

STRATEGIC MANAGEMENT FOR ENHANCING SERVICE QUALITY AFFECTING THE ORGANIZATIONAL IMAGE OF THE PROVINCIAL WATERWORKS AUTHORITY IN THAILAND

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ABSTRACT

Effective service quality management strategies are essential for ensuring high-quality service delivery within the Provincial Waterworks Authority (PWA) in Thailand, as they impact the business's image. The study examines how strategic management approaches can enhance service quality and, consequently, strengthen the overall image of the PWA. This research aims to 1) investigate the service quality management strategies of the PWA, 2) examine the organizational image of the PWA, and 3) analyze the service quality management strategies that influence the organizational image of the PWA in Thailand to provide practical implementation guidelines. Data were collected using a structured questionnaire administered to a randomly selected sample of 400 respondents. The data were analyzed using a commercially available statistical software package. Descriptive statistics, including frequencies, percentages, means, standard deviations, and minimum and maximum values, were employed. Additionally, inferential statistical analyses, including Pearson's correlation coefficient, tolerance, variance Inflation factor (VIF), and stepwise multiple regression analysis, were used to test the hypotheses. All statistical analyses were at a significance level of 0.05.

The research outcomes successfully fulfilled all three objectives, as summarized below:

The demographic data collected from the 400 Provincial Waterworks Authority (PWA) service users in Thailand indicated that the majority of respondents were male (55.3%). Most Users were married, possessed an educational level below a Bachelor's degree, had more than 11 years of experience as a PWA user, and reported an average monthly income of approximately 15,000 baht. The overall level of **service quality management strategies** implemented by the PWA in Thailand was also rated at a high level. Ranked from the highest to the lowest, the identified aspects included: 1) Reliability, 2) Understanding Customer Behavior while fostering positive public relationships, 3) Customer confidence as providing confidence in the safety of tap water usage, 4) Tangible Service relates the quality of service, and 5) Customer responsiveness by the ability to respond to customer needs. The overall **organizational image** of the PWA in Thailand was likewise. Evaluated at a high level. All specific dimensions were consistently rated highly. Ranked from the highest to the lowest, the organizational image dimension included: 1) Reputation, 2) Impressive service, 3) Interpersonal communication, 4) Organizational identity, and 5) Physical environment. The results confirmed that the five service quality factors were acceptable. independence for multiple regression analysis, with an inter-correlation no more than 0.80 (multi-collinearity). These factors are Tangible Service, Reliability, Customer Responsiveness, Customer Confidence, and Understanding Customer Behavior. We collectively found that we had a statistically significant influence on the overall organizational image of the PWA in Thailand. The model representing strategic factors in service quality management that influence the organizational image of the PWA in Thailand was expressed as follows: a statistical value of Service quality management strategies affected the organizational image of PWA = $0.274 + (0.269 * \text{understanding customer behavior}) + (0.156 * \text{reliability}) + (0.201 * \text{customer confidence}) + (0.154 * \text{customer responsiveness}) + (0.146 * \text{tangible service})$. The findings indicate that the service quality factor models explain factors influencing service quality that affect the organizational image of the PWA in Thailand by 89.8% and a standard error of estimate of ± 0.173 .

Keywords: Strategic Management, Enhancing Service Quality, Organizational Image, Provincial Waterworks Authority

INTRODUCTION

His Majesty King Bhumibol Adulyadej the Great (Rama IX) was more interested in water resource development than in any other type of project. His Majesty's speech at Chitralada Palace on March 17, 1986, in part, stated, "The most important principle is to have water for drinking, for use, and for agriculture, because life is there. If there is water, people can survive. If there is no water, people cannot survive. If there is no electricity, people can survive. But if there is electricity but no water, people cannot survive." (Yenthun, 2010: 44)

Water is widely recognized as a valuable natural resource and a vital element for sustaining life. Consequently, ensuring a supply of clean, high-quality water for human consumption is crucially important and safe for use. In contemporary contexts, tap water has undergone quality enhancement processes to meet consumption standards. Accordingly, the Provincial Waterworks Authority (PWA) shows a vital role in supporting communities throughout Thailand. The rapid economic and social development in Thailand has significantly escalated the demand for high-quality water supply. In response, the PWA has established specific standards for delivering clean and safe tap water to the public, commonly referred to as "drinkable tap water." (Sathien, 2016)

There is a common public misconception that tap water production involves simply pumping water from natural sources and distributing it through pipelines for public use and drink. However, for the public to reliably access clean, safe tap water for daily consumption, the raw water must undergo a comprehensive, multi-step production process. This involves securing a source of sufficient, quality raw water, followed by testing, quality improvement, contaminant removal, sedimentation, filtration, disinfection, and final water quality testing prior to distribution. Substantial capital investment is necessary for upgrading and developing raw water sources, as well as for constructing and expanding the water distribution network to enlarge the service area. This is to ensure consistent tap water service and to provide those who otherwise would not have access to tap water with the opportunity to use tap water through the investment in expanding the distribution area. (Provincial Waterworks Authority, 2009, cited in Homsakul, 2014).

The Provincial Waterworks Authority (PWA) is a state enterprise under the Ministry of Interior, established by government policy to provide quality tap water services. They are responsible for producing, transmission, and distribution of tap water nationwide for public utility purposes, prioritizing the benefits and public health. Currently, the PWA operates across ten operational areas, each managing its own waterworks offices. Its service units cover municipalities, sub-district administrative organizations, and villages across the country, excluding Bangkok, Nonthaburi, and Samut Prakan. The PWA focuses on providing impressive and reliable service to the public while strictly adhering to tap water quality standards. This focus emphasizes various aspects of service delivery, including convenience and speed, aiming for the highest customer satisfaction through consistently excellent standards in both service quality and tap water quality (Provincial Waterworks Authority of Thailand (2015), cited in Luangchangthong and Chantuk (2016)).

The current era is characterized by rapid global social and economic transformations driven fundamentally by globalization. Consequently, the PWA's the operations of organizations like the PWA are increasingly subjected to rigorous comparisons and international benchmarking, particularly concerning service quality. This globalization requires the organization to adapt both technology and customer behavior. It requires the organization to place greater emphasis on developing service quality and product standards in various forms. Competition in well-being and higher expectations for a better quality of life are also increasing. Therefore, the organization must continuously improve its services in conjunction with service quality management strategies. It includes developing executives and employees at all levels, both core and support functions, to be innovative and adapt to the changing global

landscape. They must also work together to develop and improve service towards a common goal: management strategies to develop the quality of products or services for both internal and external customers, resulting in public satisfaction and achieving international-level service quality. However, the PWA focuses on providing satisfying services to customers anytime, anywhere, and continuously implements the same standards nationwide. Public perception of the PWA's staff's services and public perception of tap water usage are also important factors. Any services improve the quality of service. Hence, public satisfaction is a necessity that the organization attends to and responds to successfully by the organization in terms of administration (Homsakul, 2013).

Accordingly, the research team has focused its efforts on examining service quality management strategies and their impact on the organizational image of the PWA in Thailand. The researchers are expected to yield valuable conclusions and practical guidelines for enhancing the strategies implemented by the PWA. Ultimately, this research aims to support the PWA (a key organization in Thailand) in maintaining excellent service quality, thereby cultivating a positive image and reinforcing public confidence in the safety of clean, drinkable tap water.

OBJECTIVES

1. To investigate the service quality management strategies of the Provincial Waterworks Authority in Thailand.
2. To examine the organizational image of the Provincial Waterworks Authority in Thailand.
3. To analyze the service quality management strategies to enhance the image of the Provincial Waterworks Authority in Thailand, providing a guideline for implementation.

METHODOLOGY

To study concepts and theories related to service quality strategies affecting the image of the Provincial Waterworks Authority in Thailand, the researchers selected Leblanc and Nguyen's (1996) concept of the Provincial Waterworks Authority's image in Thailand, cited in Bunklang (2017), Parasuraman and Berry's (2013) concept of service quality, cited in Chaengwetchachai (2016), and Barber and Goodman's (2011) customer service quality management strategy.

Population and Sample

The population used in this research consisted of 400 Provincial Waterworks Authority (PWA) service users in Thailand.

Research Instruments

This research utilized a five-item checklist questionnaire. The questionnaire was divided into four Parts: Part 1, which examined demographic characteristics, including gender, age, education level, and length of service use. Part 2, which examined the PWA's service quality management strategies in Thailand, consisted of 25 items. The questionnaires addressed five dimensions: tangible service, reliability, customer responsiveness, customer confidence, and understanding customer behavior. Each dimension comprised five items. Part 3 is about the image of the Provincial Waterworks Authority in Thailand. There are 25 questions in 5 components: organizational identity, reputation, physical environment, service and interpersonal communication. Each dimension comprised five items. Questions in Part 2 and Part 3 are Likert scale questionnaires with 5 levels: 5 = most and 1 = least. Part 4 is about suggestions on service quality management strategies that affect the image of the Provincial Waterworks Authority in Thailand. It is an open-ended question to express opinions.

Instrument Validation

The quality of the research instrument consisted of assessing the content validity of the measurement instrument using the Index of Item-Objective Congruence (IOC) technique. Three experts assessed the consistency index of the questionnaires to be at least 0.5, indicating that the questions were consistent with the research objectives and could be used for questionnaire purposes. The researchers

also measured reliability. This study tested the revised questionnaires with a non- test population of 30 participants. All variables had Cronbach's alpha coefficients, resulting in a reliability score of 0.977.

Data Collection

The research used questionnaires to collect data directly from a sample group. Permission to collect data was obtained from the sample group. Upon receiving permission, the research team administered the questionnaires and explained the topics to the sample group. After the sample completed the questionnaires, the study checked the completeness and accuracy of the questionnaires. If any incomplete responses were found, the researchers requested further questions. A total of 400 questionnaires were collected, meeting 100% of the target.

Data Analysis and Statistics

The researchers analyzed the data using statistics to calculate statistical values. The steps were as follows:

1. Descriptive statistical analysis: Describe the demographic characteristics of the data collected from the samples included in the study were frequency and percentage. They were measured using maximum, minimum, mean, and standard deviation. The relationship between waterworks service quality and the image of the Provincial Waterworks Authority (PWA) was measured using mean and standard deviation.

2. Inferential statistical analysis was used to test the following hypotheses:

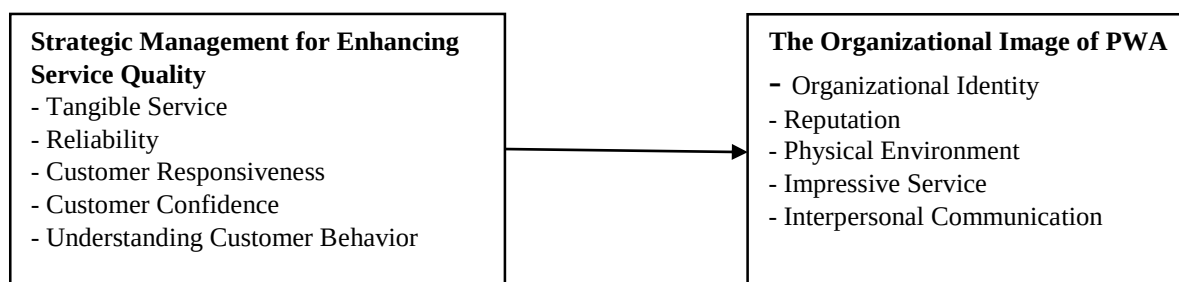
2.1 Correlation analysis was performed between all independent variables according to the conditions specified in the preliminary agreement of the linear regression analysis. Pearson's product-moment correlation coefficient was employed to examine the relationship between two quantitative variables: the PWA's service quality management strategy and the PWA's organizational image.

2.2 Developing a model of service quality that influences the image of the Provincial Waterworks Authority (PWA) in Thailand.

$$\begin{aligned} \text{Using the equation} \quad Y &= b_0 + b_1x_1 + b_2x_2 + b_3 + x_3 + \dots + b_nx_n + e \\ b_0 &= \text{Intercept} \\ b_1, b_2, b_3, \dots b_n &= \text{Regression Coefficients} \\ x_1, x_2, x_3, \dots x_n &= \text{Predictors} \\ e &= \text{Error term or Disturbance} \end{aligned}$$

Conceptual Framework

The study formulated the conceptual framework based on relevant studies, concepts, theories, and empirical research related to service quality management strategies and organizational image. Accordingly, the research conceptualization can be presented as follows:



RESULTS

The results of research on the **service quality management strategies** of the Provincial Waterworks Authority in Thailand found that the overall level of importance was at a high level. Each variable, from the highest to the lowest, was: Reliability, Understanding Customer Behavior, Customer Confidence, Customer Responsiveness, and Tangible Service as shown in Table 1.

Table 1

Service Quality Management Strategies of the Provincial Waterworks Authority in Thailand

Satisfaction Level

Mean and standard deviation of service quality management strategies of the Provincial Waterworks Authority in Thailand, by aspect and overview.

Service quality management strategy of the Provincial Waterworks Authority in Thailand	Satisfaction Level		
	$\bar{X}$	S.D.	Interpretation
1. Reliability	4.07	.682	high
2. Understanding Customer Behavior	4.07	.631	high
3. Customer Confidence	4.07	.614	high
4. Tangible Service	4.06	.602	high
5. Customer Responsiveness	4.03	.687	high
Overview	4.03	.537	high

The research results on the **Organizational Image** of the Provincial Waterworks Authority in Thailand focused on the service-related behavior of the employees. The overall picture was at a high level. Each variable was found to have a level of importance, ranked from the highest to the lowest, namely Reputation, Impressive Service, Interpersonal Communication, Organizational Identity, and Physical Environment, as shown in Table 2.

Table 2

The Organizational Image of the Provincial Waterworks Authority in Thailand

Satisfaction Level

Mean and standard deviation of the image of the Provincial Waterworks Authority in Thailand by personnel behavior, each aspect and overview.

Service quality management strategy of the Provincial Waterworks Authority in Thailand	Satisfaction Level		
	$\bar{X}$	S.D.	Interpretation
1. Reputation	4.03	.670	A lot
2. Impressive Service	4.02	.662	A lot
3. Interpersonal Communication	4.00	.671	A lot
4. Organizational Identity	3.99	.629	A lot
5. Physical Environment	3.98	.678	A lot
Overview	4.03	.537	A lot

Research results on the service quality management strategies of the Provincial Waterworks Authority to enhance the image of the Provincial Waterworks Authority in Thailand. The service quality management strategy consists of Reliability, Understanding, Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness. The five variables were found to have a relationship of no more than 0.80. In conclusion, all independent variables in this research did not have a multi-collinearity relationship between factors. Therefore, all five independent variables could be used in a stepwise multiple regression analysis, as shown in Table 3.

Table 3

The results of the correlation coefficient analysis between Service Quality Management Strategies affecting the Organizational Image of the Provincial Waterworks Authority in Thailand.

Factors	Z	X ₁	X ₂	X ₃	X ₄	X ₅
1. Z	1.000					

2. X ₁	.743*	1.000				
3. X ₂	.817*	.684*	1.000			
4. X ₃	.807*	.595*	.725*	1.000		
5. X ₄	.834*	.615*	.696*	.695*	1.000	
6. X ₅	.839*	.592*	.652*	.666*	.729*	1.000

*Statistically significant at the level of 0.05

Analysis of service quality management strategy models affecting the image of the Provincial Waterworks Authority in Thailand. The PWA's image in Thailand was $0.274 + (0.269 * \text{Customer Behavior Understanding}) + (0.156 * \text{Trustworthiness}) + (0.201 * \text{Customer Confidence}) + (0.154 * \text{Customer Responsiveness}) + (0.146 * \text{Service Tangibility})$. This factor can explain 89.80% ($R^2 = 0.898$) of the PWA's image in Thailand, with a standard error of $\pm .173$. Table 4 as showed following:

Table 4
Analysis of Service Quality Management Strategies Models (Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, Service Tangibility) affecting the Organizational Image (Organizational Identity, Reputation, Physical Environment, Impressive Service, Interpersonal Communication) of the PWA, Thailand.

Service Quality Management Strategies affecting the Organizational Image of PWA	Model 1	Model 2	Model 3	Model 4	Model 5
Constants	1.122	.677	.470	.428	.274
1. Understanding Customer Behavior	.715	.454	.328	.290	.269
2. Reliability	-	.370	.277	.209	.156
3. Customer Confidence	-	-	.270	.223	.201
4. Customer Responsiveness	-	-	-	.165	.154
5. Tangible Service	-	-	-	-	.146
R ²	.704	.831	.868	.885	.898
S.E.	.293	.221	.196	.183	.173
F	947.177*	977.674*	865.990*	758.688*	690.852*
P – value of F	.000	.000	.000	.000	.000

CONCLUSION AND FUTURE WORK

Based on the findings of this research, the researchers discuss the key findings that address the study's objectives as follows:

1. The findings indicate that the service quality management strategies of the Provincial Waterworks Authority in Thailand consist of five variables, prioritized as follows: Reliability, Understanding Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness. All factors are at a high level. The research found that PWA employees in Thailand employed service quality management strategies. Kakhai, K, Pranee, S, Saeng-on, P, Kumpetch, N. (2023). Employing service quality management strategies enables service staff to deliver services that encompass both tangible and intangible attributes, meet public or user expectations. Service providers can build reliability and gain a deeper understanding of customer behavior, attentive, reassuring practices, and the responsiveness of high-quality services to customers. Furthermore, services meet customer expectations, which include reliable and high-quality service, and build confidence through tangible responses to customer needs. This consequently enhances customer satisfaction and fosters

service loyalty and customer retention. Furthermore, this finding aligns with the theory of Parasuraman and Berry (2013), as cited in Chaengwetchachai (2016), who state that service quality is an expected requirement for all customers. Service performance can be evaluated in five dimensions: tangible service quality; employees building reliability by providing quality, accurate, and appropriate service, consistent service quality by delivering on time as promised, responsiveness by employees' willingness to assist customers promptly, building customer confidence by employees providing accurate information; employees' skills and prompt response to customer needs; and understanding customer behavior through employees' attentive, friendly service and treating each customer like family. The findings align with the concept of Inkaew (2007, as cited in Suwanpho, 2018), who states that the significance of service quality is demonstrated through its ability to benefit service businesses by enhancing customer satisfaction, reducing operating costs, and encouraging customer retention due to timely or accurate service delivery. Specifically, the research on service tangibility also supports service quality management strategies that aim to impress customers. This is consistent with Barber and Goodman (2011), who agree that all levels of employees and managers require continuous training and development in quality service to deliver satisfying services. Conversely, Zhan, Zhang, Yang, and Guo (2025) suggest a contradiction, arguing that employees' emotional self-awareness is a crucial strategy for quality service management in addition to traditional training and development. They emphasize that organizations must motivate teams to compete and self-develop to provide excellent service, primarily by actively listening to customer feedback.

2. Research found that the Organizational Image of the PWA, Thailand, which comprises Reputation, Impressive Service, Interpersonal Communication, Organizational Identity, and Physical Environment, is perceived at a high level. This suggests that the PWA's organizational image reflects the organization's personality or employee behavior, which is displayed publicly to create a positive impression among consumers. Consequently, cultivating a positive organizational image helps to build reliability, enhance customer confidence, and encourage continued patronage. This finding is consistent with the theory of Leblanc and Nguyen (1996, as cited in Bunklang, 2017), which discusses the service business image and its relation to organizational identity and reputation. A strong organizational image can thus ensure reliability in service delivery by providing guidelines for evaluating service quality within the physical environment. This involves identifying customers' true needs and ensuring clear communication during service provision to meet the unique requirements of each customer. Moreover, this perspective aligns with the concept of Siwaow (1993, as cited in Kasiphan, 2014), who asserts that the organizational image is vital for all employees to convey effectively to a large customer base. Therefore, employees must be comprehensively aware of their organization's identity. This necessitates studying and learning from the opinions of employees who hold positive attitudes toward the organizational image. Conversely, if the majority of employees hold negative attitudes, management must urgently implement development programs to enhance employees' knowledge and understanding of how to collaborate in creating a positive image for the organization. This intervention is crucial to preventing image deterioration and subsequent damage to the organization's overall performance."

3. The research results concerning service quality management strategies and their effect on the organizational image of the PWA, Thailand, provide guidelines for implementation, particularly concerning the tangible service that the results of tangible service cover intangible feelings of their overall perception of the service, such as the water users' overall sentiment toward the service delivery. Furthermore, Understanding Customer Behavior exhibited a statistically significant correlation with enhancing service quality, which in turn affects the organizational image (0.269), at a statistically significant level at 0.05. It was found to correlate highly with the PWA's organizational image at 0.898 (89.80), with a standard deviation of ± 0.173 . When analyzed collectively, all five dimensions were found to correlate significantly with service quality management strategies affecting the organizational image at a statistically significant level of 0.001. (all $P < 0.001$). In conclusion, Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, and Tangible Service were identified as the variables within service quality management strategies that significantly predict the organizational

image. These relationships are expressed by the standard score regression equation: $0.274 + (0.269 * \text{understanding customer behavior}) + (0.156 * \text{Reliability}) + (0.201 * \text{Customer Confidence}) + (0.154 * \text{Customer Responsiveness}) + (0.146 * \text{Tangible Service})$. These findings are consistent with the theory of Leblanc and Nguyen (1996), as cited in Bunklang (2017), who state that the image in the service business comprises the organization's identity (related to Reputation), the ability to guarantee service reliability, and the Physical Environment (where employees can explain why customers choose the service). This image is also reinforced by Interpersonal Communication, ensuring clarity and meeting individual needs. Furthermore, the results align with the concept of Si Khao (1993, as cited in Kasiphan, 2014), who asserts that the organizational image is critically important for all departments, and is significantly influenced by the collective opinion of most employees. If the majority of employees hold a negative attitude toward the organizational image, management must urgently initiate programs to create a positive image. Failure to do so will result in an organizational image that negatively impacts the employees, potentially leading to reputational damage and a consequent decrease in organizational performance.

Conclusion

The research decisively indicates that the PWA's service quality management strategies, comprising five high-level variables (Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, and Tangible Service), are highly effective predictors of its Organizational Image. The PWA's ability to manage these factors ensures the distribution of both tangible and intangible services that not only meet but also build positive sentiment and enhance service quality among water users, thereby strengthening the organization's overall image and performance.

Recommendations

Recommendations from the Application of the Research Results:

Based on the variables of Reliability, Understanding Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness, the PWA management team must prioritize customer needs. This requires actively soliciting customer feedback and utilizing the insights gained to enhance strategic service provision. These strategic variables are expected to strengthen the overall effectiveness of service quality management by ensuring continuous customer care, which promotes confidence, reliability, and consistent customer retention for the PWA. The research suggests that the PWA's organizational image (including Organizational Identity, Reputation, Physical Environment, Impressive Service, and Interpersonal Communication) requires continuous improvement and refinement. Specifically, the PWA should focus on staff training and professional development to enhance service quality management skills, successfully build confidence and trust among its customers. The findings reveal that the identified variables related to service quality strategic management, and organizational image can serve as the foundation for developing training curricula for front-line PWA staff. The effectiveness of these courses must be systematically evaluated to ensure successful implementation.

Limitation and Future research

The study, although rigorous, is geographically limited to the context of the PWA in Thailand. As a result, the predictive model for organizational image may have limited generalizability across individual PWA service regions and provinces, thereby constraining a comprehensive understanding the emotional and intangible aspects of water user perceptions across different service areas.

Future research should compare the model with the Metropolitan Waterworks Authority (MWA) and expand the scope to specific PWA regions to improve generalizability and precision. A qualitative study is also recommended to explore how customers' intangible (feelings) self-awareness regarding frontline staff can be integrated into training to enhance the explanatory power of the "Understanding Customer Behavior" variable and guide the development of standardized PWA knowledge management.

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