

Building marketing strategies for state-owned enterprises against private ones based on the perspectives of customer satisfaction and service quality

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1. Introduction

Service marketing and its subsequent theoretical foundation have, to a large extent, been developed with private profit-seeking organizations as the unit of analysis, and this has often led to the neglect of public services (Andreassen, 1995). However, many countries with mixed economies, like those of the Organization for Economic Cooperation and Development (OECD), have a combination of both the private and public sectors, which illustrates the importance of the role of public service organizations. Besides this, with the processes of privatization and/or deregulation, it comes the competition between both the private- and state-owned enterprises (SOEs) within the same industries. The banking, gas station, electricity, telecommunication and transportation industries in Taiwan are such examples that have arisen since their deregulation and liberalization.

In 1990, the Taiwan government liberalized the banking industry, which had previously been dominated by public banks. Sixteen new private banks began operations in 1992; thus, greatly intensifying competition in the banking industry. The petroleum market, on the other hand, had been monopolized by only one SOE—the Chinese Petroleum Corporation (CPC), which was responsible for both the production of and the outlets for gasoline. In 1987, the gas station industry was liberalized, and the number of private gas stations has been growing rapidly ever since. By the end of June 1997, there were 588 CPC-owned and 853 private-owned gas stations. In that the number of private gas stations was larger than that of the CPC, competition was considerably magnified. Normally, it should follow that competition greatly ameliorates the effectiveness and efficiency of an overall industry. However, faced with much greater competition in the deregulated environment, SOEs, such as the CPC, have had to make the right strategic moves based on their strengths and weaknesses as well as on consumers' perceptions.

In the field of service marketing, very little work has been done with regard to comparing the effectiveness of SOEs and that of private enterprises (Andreassen, 1995). Thus, one purpose of this study is to analyze the effectiveness of SOEs—that is, to perform a comparative analysis of the overall performance of state-owned enterprises with that of private enterprises in terms of customer satisfaction.

Since it is such an important indicator of customer satisfaction (Spreng and Mackoy, 1996), service quality has aroused the attention of scholars and marketers. Their efforts were devoted to first better understand its essential antecedents and consequences and to ultimately ameliorate service quality; in so doing they are able to achieve competitive advantages and build customer loyalty (Palmer and Cole, 1995; Zahorik and Rust, 1992).

To identify major competitive strategies for public service organizations, this study follows Burns (1986)'s simultaneous importance-performance analysis (SIPA) based on perceived price fairness, perceived product quality, and perceived service quality. We propose a set of marketing strategies for both the banking and gas station industries of public services, which can be applied to all public service organizations facing strong competitions from privatization in general.

2. Literature review

Because the main purposes of this paper are to compare the performance of the SOEs with that of their private competitors and then propose appropriate marketing strategies for SOEs, literatures regarding the differences between public and private organizations are reviewed first.

Perceived qualities along with customer satisfaction are important factors in building customer values. If an organization wants to outperform its competitors and thus gain competitive advantages, it is imperative that it offers relatively greater perceived qualities, especially those important to customers. Given that this paper investigates service industries, perceived service quality and its dimensions are briefly discussed in the following. Concepts of customer satisfaction and the SIPA for marketing strategies are also introduced.

2.1. Differences between public and private organizations

The global trend toward privatization has been attributed to many factors, the primary being the generally disappointing performance of SOEs in terms of efficiency and profitability (Heracleous, 1999). A great deal of research with regard to post-privatization effects has demonstrated that the performance of newly privatized SOEs has improved due to privatisation. To illustrate this point, Megginson et al. (1994) studied the outcome of 61 privatized enterprises in 32 industries in 18 countries and found that profitability, sales, operating efficiency and capital investment of privatized enterprises increased significantly after privatization. A World Bank study also investigated the outcome of 12 privatisation programs in four countries, and those results similarly showed that productivity rose in nine cases (the remaining cases were unchanged); capital investment rose; and in three cases, workers were better off through equity participation (others remained the same). Most importantly, consumers mostly received better service and lower prices, except in five cases where prices increased to reflect real cost structures (Gala et al., 1994). The reported benefits of the privatization experience of six states in the USA (mostly contracting out functions previously carried out by the state) have included substantial cost savings, higher revenues and improved service for their residents (United States General Accounting Office, 1997). Based on the strong evidence showing that the performance of SOEs did substantially improve after privatization (Heracleous, 1999; Megginson et al., 1994; Gala et al., 1994), it is reasonable to conclude that the economic performance of private enterprises usually outshines that of SOEs.

Though little literature has compared the performances of SOEs and private enterprises, which are directly competing in the same industry, Vining and Boardman (1992) did compare performance differences among 370 private companies, mixed enterprises, SOEs and co-operatives in Canada. They too found that private companies generally have higher profitability and efficiency than do the others. More recently, using the sporting service sector that is comprised of public and private service organizations, Martinez-Tur et al. (2001) have investigated the moderating effect of ownership type on the relationship between service structural complexity and customer satisfaction. Generally speaking, strong support was found for the notion that customers of public sports facilities were less satisfied than those of private ones. However, unlike private organizations pursuing profit goals, the public service organizations received the vast majority of their funding from government subsidies and merely a small amount from market user fees. In the current study, public organizations are gradually seeking for profit because of privatization and deregulation. Public and private ones are direct competitors within the same industry.

The performance measure of public organizations has considerably changed; whereas in the 1980s the focus was on the economy, efficiency and effectiveness, in the 1990s attention shifted to quality and customer satisfaction (Kouzmin et al., 1999). Even so, few research studies have measured the performance of public organizations in terms of service quality and customer satisfaction, both of which have continued to gain importance in the present competitive environment. Therefore, this paper compares and contrasts the performance of public and private organizations in terms of service quality and customer satisfaction.

2.1.1. Perceived service quality

The construct of quality as conceptualized in the service literature centers on perceived quality. Thus, in this paper, perceived service quality is defined as the consumers' judgment of an entity's overall excellence

or superiority, which contrasts with objective quality. Perceived quality is a form of attitude, related but not equivalent to satisfaction, and results from a comparison of expectations with perceptions of performance (Parasuraman et al., 1988).

2.1.2. Dimensions of perceived service quality

The dimensions of service quality refer to the attributes which contribute to consumer expectations and perceptions of service quality, thus serving as the determinants of consumers' quality assessment (Rowley, 1998). The most well-known, commonly used service quality scale is the SERVQUAL, a general instrument for measuring service quality developed by Parasuraman et al. (1988). It includes five dimensions of service quality: (1) tangibles: appearance of physical facilities, equipment, personnel and communication materials; (2) reliability: ability to perform the promised services dependably and accurately; (3) responsiveness: willingness to help customers and provide prompt service; (4) assurance: knowledge and courtesy of employees and their ability to convey trust and confidence; and (5) empathy: caring, individualized attention that a firm provides its customers.

Numerous studies have investigated the validity of the SERVQUAL since its original work (Orwig et al., 1997). Some have suggested that it should be preceded by a test of reliability and factor analysis or that the construct validity should be examined on an industry-by-industry basis (Carman, 1990; Babakus and Boller, 1992; Finn and Lamb, 1991). The current study does not intent to repeat the validation of SERVAUAL, but adopts its dimensions to develop our measurements of service quality and adjusted it to fit the nature of the banking and gas station industries.

2.1.3. Customer satisfaction

Customer satisfaction refers to customers' post purchase evaluation of a product or service offering (Hunt, 1977). Zeithaml and Bitner (1996) have contended that service quality, product quality, price, contextual factors and individual factors individually influence customer satisfaction. Service quality evaluation focuses only on the dimensions of service quality. Thus, *perceived service quality* can be considered just one of the determinants of customer satisfaction. Parasuraman et al. (1994) have similarly suggested that service quality, product quality and price are all of equal importance affecting customer satisfaction. Since most service industries provide both tangible products and intangible services (Rathmell, 1966; Shostack, 1977; Rushton and Carson, 1989), it is justified to simultaneously test the effects of service quality, product quality and price on customer satisfaction.

This paper focuses on three factors affecting customer satisfaction, namely perceived product, perceived price and perceived service quality, but it does so by dealing with the banking and gas station industries individually. For the banking industry, the effects of perceived service quality and perceived price on customer satisfaction are discussed; whereas for the gas station industry, the effects of perceived service quality and perceived product quality on customer satisfaction are presented. Because a bank's financial products (for example, deposits, loans, foreign exchange, futures, etc.) are all intangible, it can be said that no tangible product is offered in the banking industry. In contrast, being government regulated, prices at every gas station are identical throughout Taiwan, which means the price issue does not have any influence on customer satisfaction.

2.2. SIPA and competitive advantage

Besides identifying the determinants of overall customer satisfaction in banking and gas station industries, another purpose of this paper is to provide appropriate marketing strategies for public service organizations. We adopt the SIPA as a tool to analyze the strengths and weaknesses for public banking and public gas station organizations compared with their private competitors; accordingly, priorities are identified, and appropriate marketing strategies for each of them are recommended. Because the SIPA is formulated from the importance-performance analysis (IPA), both instruments are briefly described in the following.

2.2.1. IPA

Martilla and James (1977) first introduced the IPA as a tool to identify marketing strengths and weaknesses as perceived by customers. This method defines a two dimensional grid, with the horizontal axis pertaining to the judged performance of a company, rated from 'fair' to 'excellent,' and with the vertical axis indicating the importance of the attribute rated, ranging from 'slightly' to 'extremely' important. An importance-performance grid is formed with four quadrants yielding prescriptions for appropriate actions that need to be taken (Martilla and James, 1977, p. 78). The 'Keep Up the Good Work (high importance/high performance)' quadrant indicates that an advantage should be maintained. The 'Concentrate Here (high importance/low performance)' quadrant designates areas that should be given top priority to overcome these critical weaknesses. The attributes in 'Low Priority (low importance/low performance)' are indicative of low salience and require no additional or immediate resources. The 'Possible Overkill (low importance/ high performance)' points out overly used resources and unneeded performance perceived by prospective customers. These classifications help a manager to identify the directions and priorities to improve the company's performance and to increase customer satisfaction.

A variant of the IPA is the Management Opportunity Grid (MOG) (Chakravarthy et al., 1996). Similar to the IPA, the MOG is also a four-quadrant grid, but it uses each attribute's possible impact on loyalty as the importance score in the vertical axis and customer satisfaction to represent the performance in the horizontal axis. The four suggested strategies of the MOG are; (1) doing well-maintain and monitor (high impact/ high satisfaction); (2) high potential opportunity (high impact/low satisfaction); (3) do something if you have time (low impact/low satisfaction); and (4) no problem (low impact/high satisfaction).

Both of these grids are easy-to-use (Yavas and Shemwell, 1997), but their implications for marketing strategies are unclear because the focal firm's competitors are concealed within these grids. For example, customers might be satisfied with the performance of a firm on one attribute, however, the firm actually performed worse than its competitor on it. Therefore, marketing efforts should be concentrated on 'keep up the good work (high importance/high performance)' quadrant instead of 'concentrate here (high importance/ low performance)' quadrant when the focal firm performs significantly worse than its competitors in the former but does significantly better in the latter. Therefore, a modification of the IPA where primary competitors' performance is directly added provides more discernible competitive strategies for managers confronting strong competition.

2.2.2. SIPA

Burns (1986) improved the IPA by expanding it to explicitly include competitors' performance. A primary competitor must first be identified for the purposes of comparison. The original two-dimensional grid is transformed into a three-category conceptualization chart. The importance of a particular attribute is characterized as either 'high' or 'low,' while evaluations of competitive performances on the various attributes are identified as either 'poor' or 'good'. By simultaneously taken into account the level of importance, a company's performance, and major competitors' performance on each attribute, eight outcomes are generated and appropriate marketing actions are conveyed for each case.

Work resembling this was done by Yavas and Shemwell (1997) who used four categories, namely the above three plus the attribute determinacy; hence, formulating a grid with 16 strategic suggestions. Determinant attributes are those clearly distinguishable among competitors through repeated measure design MANOVA and a series of comparison tests. This modified grid is sophisticated, but the concept of 'attribute determinance' is perhaps somewhat redundant and too complicated for some. The current study follows Burns (1986) SIPA. The degree to which an attribute influences consumer satisfaction is included in the importance of an attribute. By comparing the performance of SOEs and their private competitors, the differences between them can be readily identified.

3. Research methodology

This paper adopts two data sets which consist of one sample for the banking services obtained by Chiao (1999) and the other for gas station services obtained by Lee (1998). The results of both samples were extracted from structural questionnaires with similar research design for testing hypotheses and research models regarding to service quality and customer satisfaction. The two samples and measurements are

briefly described in the following.

3.1. Sampling and data collection

Since the liberalization of the banking industry, the total number of banks in Taiwan has grown rapidly. In 1999, domestic banks were made up of small- and medium-sized enterprise and regular domestic banks, with the latter further classified into public, specialized banks, public, commercial banks and private, commercial banks. Public and private commercial banks were in the most competitive segment of the banking industry, accounting for 78% and 70% of total domestic banking in terms of book value and numbers, respectively. Thus, commercial banks were selected by Chiao (1999) to investigate customer satisfaction. Public specialized banks were not included in the data set. As stated earlier, because banks offer no tangible products, only the effects of perceived service quality and of perceived price fairness on customer satisfaction were considered.

The research targeted individual Taiwan consumers using one main commercial bank for transactions. A total of 1150 questionnaires was distributed; 690 were returned for a total of 610 useable questionnaires, which constituted an effective rate of 53% (Chiao, 1999).

As for the petroleum and gas station industry, before the year 2000, only one state-owned enterprise, the CPC, provided gasoline to all gas stations in Taiwan. By the end of June 1997, there were 588 CPC-operated and 853 private-owned gas stations. Theoretically, the quality of all gas products should be the same since they were all supplied by the CPC. However, consumers' perception of gas quality differed depending on the gas station (Lee, 1998). The price of gas in all gas stations was consistent due to the monopolistic supply, so it was excluded from this data set. Only the effects of perceived service quality and of perceived product quality on customer satisfaction are discussed in the case of gas station services. Questionnaires, totaling 9959, were randomly distributed to car and motorcycle drivers, and 3578 were returned of which 3140 were useable for an effective rate of 31.5%. All the data are categorized as being from CPC-owned or private-owned gas stations.

3.2. Measurements

The variables in this paper include customer satisfaction, perceived service quality, perceived product quality and perceived price fairness. Each was measured with a Likert-type five-point scale. The definition and measurement of each variable are described in the following.

3.2.1. Customer satisfaction

A direct performance appraisal was chosen for this study to measure customers' overall satisfaction with the bank or gas station, as suggested by Finn and Kayande (1997). This paper used a single-item, 'How satisfied are you with the bank (or gas station)?' The satisfaction level was coded from 1 to 5, representing in ascending order 'very dissatisfied', 'dissatisfied', 'neutral', 'satisfied' and 'very satisfied.'

3.2.2. Perceived service quality

Both surveys adopted the SERVQUAL as the base of their measurements of service quality, 21 items for the banking and 25 items for the gas station industries. All items were modified in accordance with the nature of the industry. An overall service quality item was then listed at the bottom of the 21 or 25 items. All statements were formed positively in a five-point Likert-type scale ranging from 'strongly disagree' to 'strongly agree.' The overall service quality item was used to evaluate its effect on customer satisfaction. The sets of individual items measuring the dimensions of service quality were used to further analyze priorities with regard to the improvements in service required that should be considered, incorporated and exploited in future marketing strategies.

3.2.3. Perceived product quality

Perceived product quality is defined as the customers' judgment of the quality of the gas offered by the gas station. This paper determined respondents' judgment using a single-item, 'The quality of gas offered by

the gas station is good,' that was ranked from 'strongly disagree' to 'strongly agree.'

3.2.4. *Perceived price fairness*

Perceived price is what is given up or sacrificed to acquire a service or product (Athanasopoulos, 2000; Cronin et al., 2000; Voss et al., 1998; Zeithaml, 1988). Respondents of the banking survey were asked, 'How satisfied are you with the overall pricing of the financial products and services (for example, deposit interest rates, loan interest rates and various kinds of service fees) offered by the bank?' which was ranked from 'very dissatisfied' to 'very satisfied.'

3.2.5. *Importance of service quality attributes*

Another section measured the importance of each of the service quality attributes described above. Respondents of both the banking and gas station surveys were asked, 'How important do you feel about (the service quality attribute)?' with a ranking from 'very un important' to 'very important' on a five-point Likert-type scale. There were 21 and 25 items for the banking and the gas station industries, respectively. The importance combined with the performance of the items for the service quality attributes were again used to further analyze the priorities for improvements in service for future marketing strategies.

3.3. *SIPA analysis*

In the SIPA analysis, both the importance and performance of the service quality dimensions are classified into two groups. The former is classified into 'high importance' and 'low importance,' while the latter is classified into 'good performance' and 'poor performance.'

For the classification based on importance, the first step was to calculate all the mean scores of the importance of each service quality attribute. Then the mean value of all the mean scores served as the cutting point for importance classification. Any service quality attribute with a mean score higher than the overall mean value was classified into 'high importance'; otherwise it was classified as being of 'low importance.'

To classify service performance, the first step was to calculate the overall mean value of all the performance mean scores for the service quality attributes. This mean value represented the cut-off point for the classification of 'good' or 'poor' performance. The average performance of each service quality attribute for both public and private services were calculated separately, but the same criteria were used to determine categorization as 'good' and 'poor.'

4. Results and discussion

4.1. *Comparison of customer satisfaction between public and private enterprises*

4.1.1. *Banking services*

It is empirically confirmed that public banks' overall performance in terms of customer satisfaction is inferior to that of private banks ($t=-2.460$; $p<0.05$, Table 1). Besides this, when it comes to perceived service quality, one of the determinants of customer satisfaction, that of public banks is significantly lower than that of private banks ($t=-4.050$; $p<0.001$). However, customers evidently do not perceive differences in terms of price fairness, which can most likely be attributed to the intense competition and narrow price gaps among banks.

In order to further identify what the effects of perceived price fairness and perceived service quality on customer satisfaction are, a regression analysis is performed. Because the correlation between the perceived price fairness and perceived service quality is significant ($r=0.397$, $p<0.01$), the VIF is examined before proceeding the regression analysis to ensure no multicollinearity problem. The values of VIF are between 1.187 and 1.213 (in Table 2), which are far below the critical value of 10 (Hair et al., 1992; Neter et al.,

1990). The results of the regression analysis (see Table 2) illustrate that for customers of public banks, private banks as well as the total industry, both perceived price fairness and perceived service quality play significant, and almost equal, roles in forming customer satisfaction.

With the above results combined, two implications for public banks emerge. First, as they clearly lag behind their private competitors, they need to take immediate action to improve the level of their customers' satisfaction. Second, since none of the customers perceive any difference between public and private banks as far as price fairness goes, the only way for public banks to improve customer satisfaction is to upgrade the perceived service quality, which is crucial either to retain their current customers or to attract new customers from private banks.

4.1.2. Gas station services

The empirical results confirm that just like the case of banks, public gas stations' overall performance in terms of customer satisfaction is lower than that of their private competitors ($t=-4.088$; $p<0.001$, in Table 3). On top of this, public gas stations' perceived service quality is significantly lower than that of their private competitors ($t=-7.856$; $p<0.001$). Surprisingly, customers perceive higher product quality in the gas purchased at public gas stations ($t=23.624$; $p<0.001$), but actually the gas is the same at both public and private gas stations due to the monopolistic source of supply. This illustrates the image of being trustworthy that public gas stations have and points to a strong intangible asset for them to leverage.

Table 1
Relative performance of public and private banks

	Overall banking industry		Public banks		Private banks		t-Test
	Mean	Std.	Mean	Std.	Mean	Std.	
Perceived price fairness	2.987	0.704	3.023	0.658	2.960	0.737	1.115
Perceived service quality	3.431	0.773	3.288	0.775	3.541	0.754	-4.050***
Customer satisfaction	3.213	0.709	3.130	0.725	3.275	0.691	-2.460*

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

Table 2
Effects of perceived price fairness and service quality on customer satisfaction for banking service

	Public banks		Private banks		Total industry	
	Coefficient	VIF	Coefficient	VIF	Coefficient	VIF
Intercept	0.729***		1.130***		0.941***	
Perceived price fairness	0.355***	1.213	0.325***	1.196	0.329***	1.187
Perceived service quality	0.404***	1.213	0.334***	1.196	0.376***	1.187
Adjusted R^2	0.403		0.351		0.379	
Model F	89.768***		94.308***		186.466***	

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

The correlation between the perceived product quality and perceived service quality is significant ($r=0.202$, $p<0.01$), and the VIF values are between 1.043 and 1.094. Both indicate no multicollinearity problem for regression analysis. The regression results of the effects of perceived product quality and perceived service quality on customer satisfaction are shown in Table 4. The results of the total industry and public gas stations are similar, and both reveal the important roles that perceived product quality and perceived service quality play on customer satisfaction. However, the results of private gas stations are not in the same pattern. The difference seems to be in the fact that customers of private gas stations care less about product quality so much so that perceived gas quality does not contribute to customer satisfaction, though it might be expected that customers perceive gas offered there to be of lower quality. Apart from this, the marginal effect of perceived product quality on customer satisfaction is much smaller than that of perceived service quality, which means more resources and efforts should be focused on the latter.

Two implications for public gas stations can be concluded from the above results. First, public gas stations are also behind their private competitors and cannot afford to wait longer to improve customer satisfaction. Second, they should improve service quality right away. Although the perceived product quality of the public is better than that of the private outlets, customers of the private gas stations do not value it. This means that the only way for public gas stations to attract new customers from private gas stations is to improve their perceived service quality. Aside from this, in light of the small marginal effect of perceived product quality, it should be much more efficient for them to retain their current customers by improving service quality. Public gas stations should not only upgrade service quality but also promote a stronger, better corporate image, one of providing good service quality to enhance customers' perceived service quality.

Table 3
Relative performance of public and private gas stations

	Overall gas stations		Public gas stations		Private gas stations		t-Test
	Mean	Std.	Mean	Std.	Mean	Std.	
Perceived product quality	3.841	1.049	4.233	0.794	3.404	1.123	23.624***
Perceived service quality	3.340	0.730	3.244	0.771	3.446	0.666	-7.856***
Customer satisfaction	3.572	0.776	3.519	0.813	3.631	0.729	-4.088***

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

Table 4
Effects of perceived product and service quality on customer satisfaction for gas stations

	Public gas stations		Private gas stations		Total industry	
	Coefficient	VIF	Coefficient	VIF	Coefficient	VIF
Intercept	1.390***		2.101***		1.767***	
Perceived product quality	0.093***	1.094	0.021	1.093	0.032**	1.043
Perceived service quality	0.535***	1.094	0.423***	1.093	0.503***	1.043
Adjusted R^2	0.292		0.157		0.234	
Model F	341.637***		139.116***		480.042***	

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

4.1.3. For public organizations (SOES)

The empirical results of this paper seemingly confirm conventional wisdom that public organizations are less effective than their private competitors in terms of mustering customer satisfaction. From the analysis of their worse performance, it is noted that the common resolution is to improve overall service quality. To figure out efficient and effective ways to achieve this, the next section further analyzes the attributes of service quality as well as the perceived price and product quality based on the SIPA, and then proposes priorities that should be on the agenda when developing future marketing strategies.

4.2. Priorities for marketing strategies based on relative competitive position

The empirical results of the SIPA grids for banking and gas station industries are presented in Tables 5 and 6, respectively. For banking services, the cut-off point of high versus low importance for all service attributes is 4.1699 while the cut-off point of good versus poor performance is 3.2928. As for gas station services, the cut-off point of high versus low importance for all service attributes is 4.2474 while the cut-off point of good versus poor performance is 3.5826.

Based on the importance, performance of public banks, and performance of private banks, each service attribute is classified into one of the eight categories of the SIPA grids. Furthermore, the performance differences of each service attributes between the public and private sectors are compared to further inform appropriate marketing strategies for public organizations. Detailed analysis for marketing strategies about each industry based on SIPA grids and performance differences is presented below.

4.2.1. Marketing strategies for public banks

Head-to-head competition: Head-to-head competition is principally centered on the trustworthiness of the bank, the guarantees offered by the bank, the reliability of the employees, the service domain required by customers, and the accuracy of operation and services. They are all very important to customers, and the performances of public and private banks are both rated 'good', which means above the cut-off point. However, public banks still do not perform as well as their private counterparts at the last two attributes: the service domain required by customers ($t=-3.191$, $p<0.001$) and the accuracy of operation and services ($t=-2.383$, $p<0.05$). Because private banks are late movers, they have to offer a greater variety of services and be more responsive to customers' changing demands to continue to attract new customers from public banks. Besides, private banks also create the customer value by providing more accurate services through effective internal operation systems and capable employees. In fact, customers obviously recognize their efforts in these two attributes. Therefore, to be prudent, public banks should especially be more alert to change as well as keep working on all of the attributes to avoid having them turned into competitive disadvantages.

Competitive advantage: It is clear that public banks have no competitive advantages compared with their private competitors. In fact, among all the important attributes, they show no superior performance for any one attribute. Public banks must consequently try to identify areas with the most potential (see the *Neglected opportunity*) in order to establish competitive advantages.

Competitive disadvantage: Customers seem to feel that public banks perform significantly worse than their private competitors do in eight important attributes, which constitute one-third of all service attributes: the way in which the employees treat customers ($t=-7.062$, $p<0.001$), meeting customers' requirements when needed ($t=-3.593$, $p<0.001$), employees' willingness to help customers ($t=-6.285$, $p<0.001$), the speed with which employees respond to customers ($t=-4.788$, $p<0.001$), in-time service delivery ($t=-2.812$, $P<0.01$), enough service-related information ($t=-2.483$, $p<0.05$), clear communication about services and expenses ($t=-5.329$, $p<0.001$), and most up-to-date equipment ($t=-2.576$, $p<0.01$). These areas should currently be the top priorities for public banks to improve so as to prevent continuous erosion of their market share to private banks.

All these items, except for the most up-to-date equipment, relate to the attitudes and abilities of the employees as well as to the design of their internal operations. Two kinds of training are required for public bank employees. One is to set up a customer-oriented service standard to enhance employees' basic service performance with clear communication and enough service-related information. For example, customers usually do not have the knowledge about APR, lending procedures, credit policies, and their rights regarding personal financial management. They may not fully understand these terms even though relevant information is provided. So providing relevant information in simplified language and clear explanations will unquestionably be useful. Another is to upgrade service proficiency to enhance employees' sensitivity and flexibility, response speed and in-time service delivery. Such training can improve employees' abilities and service attitudes. In order to thoroughly cultivate a more customer-oriented culture, standardized customer service programs and techniques to increase employees' willingness to help customers and response speed should also be incorporated into operating rules and evaluation systems.

In addition, hiring enough manpower and setting up proper service procedures for quick response and better in-time service delivery should be considered to provide employees commensurate abilities. As for meeting customers' requirements, capable and sensitive employees are required. It is also important that prompt internal procedures to serve customers more efficiently and properly be established and kept up. Regarding the most up-to-date equipment, public banks should at least keep up with their private competitors to offer the same kind and level of services (e.g. user friendly ATMs for self-services) to meet customers' demand.

Neglected opportunity. There are two very important attributes performed poorly by both public and private banks. First, customers would apparently like more attention paid to their rights. Banks should provide a more customer-oriented culture and more efficient service systems as well as to develop greater sensitivity on the part of the employees to capture the chance. Second, customers also demand the convenience of parking, so this should be built into the long-run business planning as a critical criterion for the location of

new branches. If public banks meet these customers' needs before private banks do, ideal opportunities will open up for them to create competitive advantages. However, because public banks perform significantly worse than their private competitors in the first (i.e. caring attitude about customers' rights) ($t=-3.897$, $p<0.001$), they should at least try to perform as well as their private competitors to again avoid having them turned into competitive disadvantages.

Areas of 'Competitive disadvantage' and 'Neglected opportunity' need to be given high priority, and attributes in 'Head-to-head competition' also need to be continually addressed. Public banks do not have to allocate their resources in all of the attributes, particularly those with relatively low importance to customers. However, they still ought to pay attention to the relative performances between public and private banks, especially to their significantly weaker attributes, not to mention the changes in customers' needs and preferences. By being alert, they can avoid having these attributes becoming competitive disadvantages, and can acknowledge the emergence of the attributes in the areas of 'Head-to-head competition' or 'Neglected opportunity.'

Table 5
Advantage-disadvantage analysis of public and private banks based on SIPA

Importance	Public performance	Private performance	Marketing opportunities	Service attribute	t-Value of performance difference	Importance score	
High	Good	Good	Head-to-head competition	Degree to which the bank is dependable	-0.339	4.5230	
				Guarantees offered by the bank	0.398	4.5148	
				Reliability of employees	-1.913	4.4557	
				Providing service domain required by customers	-3.191***	4.2574	
	Poor	Poor	Good	Competitive disadvantage	Accuracy of operations and services	-2.383*	4.2279
					Delivery of services on time	-2.812**	4.3311
					Treatment of employees toward customers	-7.062***	4.3279
					Speed with which employees respond to customers	-4.788***	4.3016
					Degree to which customers are informed about the services provided	-2.483*	4.2541
					Fulfilment of customers' requirements when needed	-3.593***	4.2525
					Employees' willingness to help customers	-6.285***	4.2393
					Most up-to-date equipment	-2.576**	4.2213
					Clear communication with customers about all service contents and associated expenses	-5.329***	4.2082
					Caring attitude about the rights of customers	-3.897***	4.3393
Low	Good	Good	False competition	Convenience of parking	-1.841	4.2311	
				Compensation for customers within the promised time period when the service offered is defected	-2.961**	4.1689	
				Dress code/clothing of employees	-3.310***	3.3869	
				Internal displays/ decoration	-0.261	3.3689	
	Poor	Poor	Poor	False advantage False alarm Null opportunity	Price	1.115	4.1689
					Initiative taken to understand customers' needs	-3.368***	4.1295
					Ability to satisfy customers' individual needs	-1.044	4.0787
					Long period of service hours	-1.441	3.7508

Note 1: * $p<0.05$, ** $p<0.01$, *** $p<0.001$; for all attributes, the public performs worse than the private (i.e. positive t -values).

Note 2: The mean value of the importance score (i.e. cut-off point of high versus low importance) is 4.1699.

Note 3: The mean value of the performance score (i.e. cut-off point of good versus poor performance) is 3.2928.

Note 4: A positive t -value represents that public banks perform better than private banks on this service attribute. A negative t -value means that private banks perform better than public ones.

Table 6
Advantage-disadvantage analysis of public and private gas stations based on SIPA

Importance	Public performance	Private performance	Marketing opportunities	Service attribute	T-value of performance difference	Importance score				
High	Good	Good	Head-to-head competition	Entrance/exit of the gas station is easy to access from/to surrounding roads	-0.662	4.5588				
				Layout of the gas-filling area in the station is good	-3.157**	4.4956				
				Eye-catching signposts are present to facilitate recognition and search	-7.170***	4.4519				
				Gas-filling service is delivered correctly	4.067***	4.4303				
				Location of the station is convenient	-3.055**	4.4243				
				Employees are always willing to deliver service quickly	-9.634***	4.4160				
				Employees can operate the gas-filling equipment skillfully	1.780	4.4126				
				Employees wear uniforms	7.078***	4.3079				
	Poor	Good	Poor	Competitive advantage	Quality of the gas offered is good and trustworthy	23.624***	4.5517			
					Gas-filling equipment is accurate	12.929***	4.5237			
					Washrooms are clean and hygienic	-6.564***	4.5108			
					Employees always treat customers with a kind, polite attitude	-11.284***	4.3785			
		Poor	Good	Competitive disadvantage	Service is consistent regardless of the time or employee	-5.615***	4.3366			
					Employees guide cars in, out, and to the right place for gas-filling	-17.018***	4.3212			
					Longer operating hours are in place to facilitate gas-filling	-22.481***	4.2819			
					Surroundings are green, clean and neat	-5.028***	4.2735			
					Employees respond to customers' requirements even when busy	-8.772***	4.2734			
					Poor	Poor	Neglected opportunity	Customers receive care, and services are continuously improved	-12.166***	4.2260
								Employees always smile	-12.436***	4.2157
								Employees take the initiative to advise customers as to the amount or quantity of gas-filling and 'from zero to start'	-2.653**	4.1775
Employees have the required knowledge to answer customers' questions.	-0.567	4.0558								
Low	Good	Poor	False competition False advantage False alarm	Appearance of the building is attractive	-12.701***	3.3952				
				Services other than gas-filling are available	-13.840***	3.7440				
				Employees provide customers personal care and attention	-10.688***	3.7432				
				Appearance of the gas-filling equipment is up-to-date	-13.293***	3.6795				

Note 1: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; The positive t -values indicate that the public stations perform better than the private.

Note 2: The mean value of the importance score (i.e. cut-off point of high versus low importance) is 4.2474.

Note 3: The mean value of the performance score (i.e. cut-off point of good versus poor performance) is 3.5826.

Note 4: A positive t -value represents that public gas stations perform better than private ones on this service attribute. A negative t -value means that private gas stations perform better than public ones.

4.2.2. Marketing strategies for public gas stations

Head-to-head competition: The results for the strengths and weaknesses of public gas stations compared with their private competitors are shown in. There are many important attributes in the category of head-to-head competition. Although the performances of the public and private banks are both rated as good, public gas stations still perform significantly worse in four (out of eight) attributes than their private competitors do. This suggests great potential for these attributes to be converted into competitive disadvantages; hence, public gas stations should be more attentive in these areas.

Certain attributes are costly and time-consuming to be improved, such as the lay-out of the route to the gas-filling area in the station ($t = -3.157$, $p < 0.01$), easy access for entrance/exit ($t = -0.662$, $p > 0.05$), and

convenient locations ($t=-3.055$, $p<0.01$). It is suggested to consider these items into long range corporate planning. An eye-catching signposts ($t=-7.170$, $p<0.001$) should be an effective weapon because public gas stations can quickly outperform their private rivals with ease. Quick service delivery ($t=-9.634$, $p<0.001$) is related to employees' attitudes and abilities, which can be improved through proficiency and customer-oriented culture training as well as appropriate performance appraisal systems. Proper operating procedure and enough manpower are also required to support employee's abilities for quick service delivery.

There are three attributes in head-to-head competition that public gas stations perform better than their private competitors do: correct gas-filling service ($t=4.067$, $p<0.001$), employees in uniforms ($t=7.078$, $p<0.001$), and skilful gas-filling workers ($t=1.780$, $p>0.05$). Correct gas-filling service refers to providing honest and trustworthy services. On other words, customers do not worry being cheated in public gas stations. Public gas stations should, as a consequence, leverage this by promoting awareness and a corporate image of being trustworthy. Regarding employees in uniforms, the advantage of this attribute is not sustainable due to its easiness for imitation. As for skilful gas-filling workers, it is a basic, hygiene factor and both public and private gas stations perform comparably well (i.e. no significant difference). Proper employee training for gas-filling service is especially important due to high turnover rate in this industry. In conclusion, public gas stations still have to continuously pay attention to these three attributes.

Competitive advantage: Public gas stations perform better than their private competitors do in two areas which customers perceive as very important: the quality of the gas ($t=23.624$, $p<0.001$) and the accuracy of the equipment ($t=12.929$, $p<0.001$). The quality of the gas is a characteristic of the physical product and should not be confused with service. Gas quality is critical for customers in deciding which gas station to go to. The gas quality actually should be the same for public and private gas stations because there is only one manufacturer and supplier, the public petroleum firm-CPC. However, customers are still concerned about the quality of the gas offered by private gas stations and judge the quality by their perception. They think public gas stations will not cheat them by reducing either quality or quantity. According to Zeithaml (1988)'s notion of perceived quality, the intrinsic attributes are hard to detect so the extrinsic attribute, such as reputation, is the main evaluation criteria for gas quality. As for the accuracy of the filling equipment, this once again is related to the issue of honesty. Customers widely hang on to the belief that public gas stations have no incentive to cheat them by reducing the volume.

These two attributes provide public gas stations very strong competitive advantages over their private competitors because the nature of the advantages is associated with reliability and trust, which are very difficult to develop and take time to nurture. The public firm seems to have a more sustained competitive advantage in these areas, a factor which often relates to corporate image.

Competitive disadvantage: The competitive disadvantages of public gas stations come from many important service attributes and are the most urgent areas to improve upon. This is because of their significant poor performance relative to their private competitors (all p-values are less than 0.001). Clean and hygienic washrooms ($t=-6.564$, $p<0.001$), 'green, clean, and neat surroundings ($t=-5.028$, $p<0.001$)', and longer operating hours ($t=-22.481$, $p<0.001$) are essential to customers. All of these cost little but can substantially improve the service quality perceived by customers. Thus, these three attributes should be improved right away.

Other competitive disadvantages are employee-related factors. As for employees' humane and polite attitude ($t=-11.284$, $p<0.001$), this demands employee training, an appropriate evaluation system, and a more customer-oriented culture. Since the entire service requirements are listed in employees' manuals, managers of public gas stations should identify the reasons for inconsistencies in their service ($t=-5.615$, $p<0.001$) and for employees' not following rules and then solve the issues through training, establishing appropriate evaluation systems, and/or increasing manpower. The other disadvantages of public gas stations regard responsiveness: employees' willingness to respond to customers' requirements in rush hours ($t=-8.772$, $p<0.001$) and guiding drivers in, out, and to the right place for service ($t=-17.018$, $p<0.001$). The former is related to the attitudes of employees and can be solved by additional training along with the establishment of an appropriate performance appraisal system. However, it might also be a result of short of manpower in peak hours. It is an issue that should be considered more seriously to prevent longer

waiting time and quality erosion. The last disadvantage is a part of the operating system. The guiding rules are listed in employees' manuals, but not actually executed. Managers should monitor and lead employees to follow their operation manuals. The above disadvantages are priorities for public firms for fear that their direct and severe adverse consequences may further worsen if not corrected at once.

Neglected opportunity: No attribute is neglected opportunity for public gas station to work on; so public gas stations should concentrate on those attributes in 'Competitive disadvantage' and 'Head-to-head competition.' No neglected opportunity is also a sign of highly competition in this industry that all players have studied consumers' needs thoroughly.

To sum up, service attributes in 'Competitive disadvantage' should be improved as soon as possible. Attributes in 'Head-to-head competition' and 'Competitive advantage' also need to be kept upgraded. Public gas stations should allocate resources to these crucial attributes, which are perceived highly important by customers, and should do their best to perform better than their private competitors on these attributes.

5. Conclusions

The main purposes of this paper are to assess the effectiveness of public service organizations and to compare them with their private competitors, and then propose appropriate marketing strategies for SOEs. Owing to the liberalization in the banking and gas station industries in the early to mid-1990s in Taiwan, these two industries consist of both public and private enterprises competing directly; hence, they provide appropriate comparisons for the purpose of this study.

The results show that overall customer satisfaction of public service organizations is much less than that of private enterprises. The dissatisfaction toward public banking and gas station services is mainly based on their poor service quality. Although the perceived price fairness of public and private banks are similar and although the perceived product quality and accuracy of quantity supply of public gas stations are higher than that of private ones, the perceived service quality is relatively lower for both public banks and gas stations than their private competitors, which leads to customer dissatisfaction.

5.1. Overall suggestions for public service organizations

Based on the findings of this study, public service organizations need to improve those employee-related attributes of service quality since they are the main sources of the competitive disadvantages. This is, indeed, consistent with service marketing literature that the 'people factor' is an essential component of perceived service quality (Ganesh et al., 2000; Chiou et al., 2002).

However, public organizations should first analyze the nature of those employee-related service attributes to distinguish employees' attitudes from their abilities. Managers should set up customer-oriented standardized operating procedures to maintain basic service requirements, such as providing service-related information, standard ways to approach customers, to improve response speed, in-time service delivery, and so on. Major efforts should immediately be devoted to service attributes that are related to employees' abilities. Intensive employee training can enable service reliability, consistency and speed. In the case of gas stations, providing sufficient manpower in peak hours can also ensure faster service and responses. Issues that are related to employees' attitudes might not be solved in a short period of time. Managers should not only continuously give employee training but also develop appropriate evaluation systems to cultivate a customer oriented culture to change employees' attitudes, and thus their behavior. If a customer-oriented culture is well developed, undoubtedly it follows that a customer oriented corporate image will be enhanced as well.

Further, because the service quality evaluation is based on consumers' perceptions rather than on objective comparisons, public organizations should not only improve service quality itself but also promote a strong corporate image for good service quality to enhance customers' perceived service quality.

It is evident that public banks and gas stations offer services providing low customer satisfaction owing to

the low degree of congruency between customer preferences and SOEs' performance. Moreover, they perform relatively worse than their private competitors do in almost all of the service attributes. This was also, in fact, one of the reasons that the Taiwan government moved in the direction of deregulation and gradually forced the privatization of SOEs. After some 10 years of deregulation, public banks and gas stations still face strong competition from their private competitors, but nevertheless, continue to provide relatively poor services. If there were any competitive advantages for public services, it would be in their reliability and trustworthiness. Customers trust their product quality and accurate equipment (i.e., gas pumps). However, the 'no cheating' image will no longer be a core competence after the SOEs privatize. Improving service quality and 'better service' image is the only way to keep competing with private enterprises. The SIPA provides direction to consumer satisfaction efforts. Public banks and gas stations should concentrate on service attributes in 'Neglected opportunity' and immediately improve what is in 'Competitive disadvantage.'

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