The Causal Relationship between Service Quality, Customer Satisfaction and Profitability in Taiwan Banking Industry

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Abstract

“Are there economic benefits to improving Service Quality in Taiwan banking industry” is the research problem of this study. Service Quality is perceived quality; it is different from objective or actual quality; it is a judgement usually made within a customer’s evoked set. In literature review, the author finds that: (1) The issue of Service Quality has received considerable argument in the Marketing literatures. (2) In many ways, service quality is similar to an attitude. (3) Customer satisfaction is distinct from service quality. (4) Customers’ expectations of firm’s quality are adaptive. (5) It is difficult for traditional financial ratio to measure the economic benefits of service quality improvement. (6) The effects of service change become noticeable only in the long run. (7) The most important single factor affecting a business unit performance is the quality of its goods and service.

According to service quality and profitability theoretical background, this study developed the theoretical framework of this paper. This study also designed structural and measurement models to investigate the causal relationships between service quality, customer satisfaction and profitability in Taiwan banking industry. And then, tested relationship by examining the significance of the LISREL estimated path coefficient that links the variables noted.

The major conclusion from this study is that the performance base scale developed SERVPERF model and the customer satisfaction on profitability model are confirmed in Taiwan banking industry. The remaining questions addressed in this study are essential managerial issues. The results suggest that perceptive quality is an antecedent of attitude; Service quality is an antecedent of customer satisfaction; Customer satisfaction has a direct effect on purchase intention; Customer satisfaction is an antecedent of profitability. Finally, the author pinpoints gap between customer and service provider to interpret “Profitability is positively affected by service quality improvement.”

1. Introduction

The banking industry has a conservative style due to the traditional management methods used in the past and legal restrictions. Because the level of quality of business activities is very high and price competition is easily imitated, non-price competition can reach Porter's [16] so-called differentiation competitive superiority; furthermore, with non-price competition, service quality is invariably raised and new financial goods are introduced.

The most recent research has begun to voice suspicions as to whether or not several of the concepts underlying quality control's operationalization to improve customer satisfaction and company quality ultimately produce their intended goals. On the road to improving quality, numerous setbacks can be encountered, causing several companies to discard quality improvements. For this reason, limitations in the relationships between research quality, level of customer satisfaction, and banking achievements are shown to be very important, and became this study's most interesting research topics.
1.1 Research Intentions
The aforementioned research background generated several ideas for researching the service quality of banking activities:

(1) Banks are one of the four representative service industries used in developing SERVQUAL by PZB [15]; to consider the degree of believability and effectiveness of using SERVQUAL, we choose the banking industry as the objective.
(2) The evaluation of the banking industry's achievements are important points to scholastic and business research, but the evaluation of related management achievements of both domestic and foreign banks have mostly been restricted to an analysis of financial ratio, rarely focusing on qualitative analysis of service characteristics.
(3) The popularity of service quality in industry and management periodicals has gradually grown. But questionnaires of service quality investigations only examine the customer's perspective, and seldom show the perspective of quality managers.

1.2. Research Goals
Based on the research questions, this study extends several research goals:

(1) According to causal relationship model of service quality, customer satisfaction, and purchase intentions developed in the literature, evidence in Cronin and Taylor [7] was used to establish a customer purchase intentions model.
(2) According to the literature, we designed a model of the causal relation between customer satisfaction, market share, profitability, and the relationships between the empirical evidence.
(3) Utilizing gap theory, we attempt to merge the causal relationships between service quality, customer satisfaction, and profitability, and discuss them.

2. Literature Review

2.1. Development of Service Quality
Before 1983, the definition of quality mostly adopted the concept of quality control; corresponding standards just considered achieving quality. Juran [12] defined quality as "suitable use". Crosby [9] defined quality as "consistent with needs", considering that quality and operational standards corresponded.

(1) Quotes on Quality Control Concepts
Cornell [6] considered that the service industry needed a broader definition of quality that that used by the manufacturing industry; Zimmerman [20] took the quality control concept of the manufacturing industry and applied it to service quality. He considered what service quality needed to encompass: practicality, replication of manufacturing ability, immediacy, ultimate user satisfaction, and corresponding standards.

(2) Understanding Quality Formation
According to the concept of Zeithaml [21], consumers perceive that the formation process of service quality uses both interior and exterior attributes of low-level production quality (service), passing through an internal united comparison (evoked set), proceeding to form a higher level of perceived service quality.

PZB [14] analyzed four representative service industries by using interviews with groups of customers and quality managers, categorizing the principal influences on service quality, to obtain five gaps in the customer aspects and 4 gaps in the aspect of service quality; they also utilized the concept of consumers' internal united evaluation (evoked set) to establish a service quality model.

2.2 Assessment of Service Quality
PZB [15] proposed SERVQUAL to assess the perception of service quality, with the unequivocal definition of perception of service quality as gaps in the levels of consumers' perception and expectations, as \( Q = P - E \).

Zeithaml [21] proposed a comprehensive perception of quality assessment analogous to the position that the assessment is from the consumer's internal united comparison (evoked set) with an added judgement. In this paper, we take Zeithaml and PZB's concepts for service quality definitions, insert them into Fisbein's attitude assessment model, and obtain the service quality attitude assessment formula's common form:

\[
Q = \sum_{j=1}^{n} \sum_{i=1}^{m} w_{ij} (p_{ij} - e_{ij})
\]

where \( m \) is conscious structure no.
$i$ is the construct structure  
$j$ is the $j$th item  
$w_{ij}$ is the $i$th perception construct, the $j$th item's performance  
$p_{ij}$ is the $i$th perception construct, the $j$th item's expectations  
$E_{ij}$ is the $i$th perception construct, the $j$th item's expectations  
$n_i$ is the $i$th perception construct aspect together with the $i$th customer attribute, and $i$'s importance level.

In the empirical evidence portion, this study analyzes service quality measurement for a common extension: $w = 1, E = 0$ for Cronin and Taylor's [7] SERVPERF.

2.3 Assessment of Banking Profitability and Growth

The scope of the banking industry includes 22 items of business activities like deposit of money, foreign exchange, security, and trust, etc. In this study, we focus on the scope of banking business activity management to measure the profitability and growth situation of service quality of banking management, also we do not choose to use the stationary state of financial analysis, so we use Shanghai Commercial Bank's growth and profitability situation for the achievement judgement items (see Table 1), to judge the influence of service quality improvements on management achievement targets.

<table>
<thead>
<tr>
<th>(1) Deposit activities</th>
<th>(2) Loan activities</th>
<th>(3) Overdue loans</th>
<th>(4) Foreign exchange</th>
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<tr>
<td>(5) Trust activities</td>
<td>(6) Securities activities</td>
<td>(7) Surplus</td>
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Overseas, there are several strategic variables within meta-analysis research; Capon, Farley, and Hoenig [4] discovered there to be a positive relationship between quality and economic rewards. Anderson and Sullivan [2] and Oliver and Swan [13] discussed the intense interrelationship between customer satisfaction and level of loyalty. And Reichheld and Sasser [17] discussed why increasing the level of customer loyalty can lead to higher profitability. Rust and Zahorik [18] used empirical evidence to show the relationship between the level of customer satisfaction with a therapy service organization and profitability. But, these studies mostly just considered the relationship between two variables, and did not simultaneously consider multiple cause and effect relationships.

In a synthesis of analyses of related foreign and domestic research, this study organizes the following points:
(1) Previously, most research on management effectiveness went no further than analyzing financial ratios, fewer considered service quality incorporating non-financial ratios in banking effectiveness evaluations.
(2) Both domestic and foreign scholars seldom directly discuss the causal relationships of service quality and management profitability.
(3) Most foreign researchers when discussing the causal relationships between service quality and profitability use a single causal relationship, and do not simultaneously consider the difference of multiple causal relationships among customer satisfaction, market share, and profitability.

3. Research Plan

Service quality is one type of perception quality, the measurement of which requires the customer themselves to make a subjective judgement. Consequently, developing the theoretical background for the measurement of customer's perceptions, attitudes, and purchase behavior with respect to service quality is the focus of this study plan. Furthermore, measuring the influence on profitability after quality improvements also in an important part of our work, so developing the theoretical background for a model to measure the influence of quality on profitability is another important aspect of the study.

1. Determining the Causes of the Level of Customer Satisfaction

Before discussion of this study plan, we first introduce Anderson, Fornell, and Lehmann's [1] formula of the concepts of customer satisfaction level (equation a1)

$$\text{SATISFACTION}_t = \Phi_1 (\text{QUALITY}_{t-1}, \text{PRICE}_{t-1}, \text{EXPECTATION}_{t-1}, \zeta_1)$$  \hspace{1cm} (a1)

$$\text{EXPECTATION}_{t} = \Phi_2 (\text{EXPECTATION}_{t-1}, \text{QUALITY}_{t-1}, \zeta_{2t})$$  \hspace{1cm} (a2)
ζ: Other elements affecting the measurement (like environmental trends, company-specific factors, error items)

The equation explains that the level of customer satisfaction is influenced by comprehensive service quality, price, and expectations. Numerous studies have shown that perception of service quality can influence the level of customer satisfaction[2,3,10].

(2) Distinguishing Between Service Quality and the Level of Customer Satisfaction

This study organizes related differences in service quality and the level of customer satisfaction from the literature. Bolton and Drew [3] suggest that service quality and satisfaction are distinct constructs. The most common explanation of the difference between the two is that perceived service quality is a form of attitude, a long-run overall evaluation, where satisfaction is a transaction-specific measure[3,15].

(3) Service Quality and Attitude

Scholars have different ways of looking at service quality definitions and concepts: (1) PZB [15] considered that the assessment of service quality is P - E; (2) Cronin and Taylor [7] considered that using P to assess service quality is somewhat better than P - E; academics have suggested that service quality and the level of satisfaction are two different structural concepts [3,7]. Nevertheless, the ways of looking at service quality and attitudes of these academics are still to a great extent consistent. Considering that perception of service quality, one kind of outer manifestation of attitude, is a long-run overall evaluation.

3.1. Theoretical Background for Assessing Customer Service Quality Attitudes

In order to assess how customer perception of service quality influences purchase behavior, this study designs a model of the relationship of perception of service quality and attitude; this model is based on establishment of attitude theory [3,7], separated into equations 1 to 8 as described below: procedure 1-5.

Procedure 1: Customer Satisfaction and Perception of Service Quality

\[(CS/D)_t = f_1 (DISCONFIRM_t, PERFORM_t, EXPECT_{t-1})\]  

Equation (1) represents that the current customer satisfaction is a function of the current disconfirmation, current performance and the residual expect of the prior period.

Procedure 2: Customer Attitude

\[ATTITUDE_t = f_2 ((CS/D)_t, ATT_{t-1})\]  

Equation (2) represents that the current attitude is a function of the current customer satisfaction and the residual attitude of the prior period.

Procedure 3: Generalization model

\[ATTITUDE_t = f_3 (DISCONFIRM_t, PERFORM_t, EXPECT_{t-1}, ATT_{t-1})\]  

Equation (3) represents that the current attitude is a function of the current disconfirmation, current performance, the residual expect of a prior period, and the residual attitude of the prior period.

Procedure 4: Customer Satisfaction and Service Quality Attitude

\[ATTITUDE_t = f_4 (DISCONFIRM_t, PERFORM_t, ATT_{t-1})\]  

Equation (4) is from equation (3), represents that Customer’s expectations of firm’s service quality are adaptive, so we don’t think about expectation.

\[SQ_t = f_5 ((CS/D)_t, DISCONFIRM_t)\]  

Equation (5) represents that service quality is a function of the current customer satisfaction, and the current
As can be learned from the literature, service quality is similar to attitude [15]; if analyzed from the aspect of consumer behavior, attitude is a function of perception. So one can regard perception of service quality as a combined variable of attitude.

\[
ATTITUDE_t = f_6 (PSQ_t, (CS/D)_t, ATT_t-1)
\]  

Equation (6) represents the current customer service quality attitude is a function of the current perception of service quality; current customer satisfaction, and the attitude of the prior period's service quality.

Procedure 5: Attitude and Purchase Behavior.

\[
PI_t = f_7 (ATT_t)
\]  

Equation (7) represents that the current purchase behavior is a function of the current service quality attitude.

\[
PI_t = f_7 (ATT_t) = f_8 (PSQ_t, (CS/D)_t, ATT_t-1)
\]  

Equation (8) represents that current purchase behavior is a function of current perception of service quality, current customer satisfaction, and residual perception of a prior period. Deserving special attention is that several scholars consider that service quality is also an explanatory variable for the level of customer satisfaction. So adding these relationships into the model for consideration, the overall perception model becomes as in Fig. 1.

![Fig.1 The SERVPERF Structural Model](source: Cronin and Taylor [7])

### 3.2. Theoretical Background for the Level of Satisfaction and Profitability Model

Customer satisfaction is one result of bank marketing activity, it has several inter-relationships within the consumption process with after-purchase behaviors (changed attitudes, repeat purchases, and level of brand loyalty). Churchill and Surprenant [5] considered that the concept of customer satisfaction can be included directly in bank marketing concepts, as satisfying consumers' demands and desires produces company profits.

The theoretical background of profitability is based on Anderson, Fornell, and Lehmann [1] who discovered the structure of the relationship between customer satisfaction, market share, and profitability. Divided into equations 9-11 from the literature and Szymanski, Bharadwaj, and Varadarajan [19], an integrated analysis (meta-analysis) of market share and profitability relationships result in building this part of the path.

Procedure 1: Customer Satisfaction and Profitability
\[ \text{EXPECT}_t = g_1(\text{EXPECT}_{t-1}, \text{QUALITY}_{t-1}, \zeta_t) \]  
(9)

\( \zeta \): Other factors affecting the measurement (like environmental trends, special company functions, error items)

Equation (9) represents that current expectations are a function of prior expectations, prior service quality, and other factors.

\[ \text{SATISFA}_t = g_2(\text{QUALITY}_t, \text{PRICE}_t, \text{EXPECT}_t, \zeta_t) \]  
(10)

Equation (10) represents that the current level of satisfaction is a function of the variables of current service quality, current price, current expectation, and current other factors.

\[ \text{PROFIT}_t = g_3(\text{SATISFA}_t, \zeta_t) \]  
(11)

Equation (11) represents that current profitability is a function of the variables of current customer satisfaction and other factors.


It is known from the literature that with a situation of same-quality supply and different-quality demand, the level of customer satisfaction and market share have a negative correlation; in a situation of same-quality supply and same-quality demand, the level of customer satisfaction and market share are positively correlated. Fornell [10] suggested that the relationship of the gap in quality between market share and customer satisfaction must be negative. But this study first discusses the influence of the level of customer satisfaction with service quality on purchase behavior. So from the aspect of customer satisfaction, we discuss its influence on market share, and because both the supply aspect of banking services and the banking demand of customers do not have the same perception service quality, this research subjectively hypothesizes that market share is the explanatory variable for the level of customer satisfaction.

Procedure 3: Analysis of the Relationship of Market Share and Profitability

Szymanski, Bharadwaj, and Varadarajan [19] used meta-analysis methods to study the results of market share on profitability, classifying 76 categories of research discoveries, so market share was used as the independent variable for regression analysis with profitability. That study discovered that, on average, market share has a positive influence on profitability, and market share is profitability’s explanatory variable, but these will receive the influence of three hidden intermediary variables, divided into: (1) overlooked concerned variables (errors in model design), (2) sample characteristics, and (3) assessment characteristics.

So, this study chooses to use market share for the explanatory variable of profitability, using the relationships of customer satisfaction, market share, and profitability as shown in the flowchart of Fig. 2.

![Flowchart](image-url)
3.3. Research Structure and Hypotheses

The study topic discusses whether or not an improvement in quality affects profitability; after establishing a model for the service quality effect on purchase intention, and a model for customer satisfaction on profitability, we discuss this research topic from the two different angles of assessment of both customer aspects and management aspects (see Fig. 3).

![Causal Relationships between Service Quality, Customer Satisfaction, and Profitability Model](image)

3.4 Research Hypotheses

This study as based on the literature evaluates the results and pathways of relationships of research structure, to develop the following hypotheses, to accomplish the research investigation based on the following:

(1) Customer Aspects
Hypotheses 1: Perception of quality has a significant influence on attitude (\( \gamma_{21} \)).
Hypotheses 2: Service quality is the explanatory variable for customer satisfaction (\( \beta_{12} \)).
Hypotheses 3: Customer satisfaction has a significant influence on attitude (\( \beta_{21} \)).
Hypotheses 4: Customer satisfaction has a significant influence on purchase intention (\( \beta_{31} \)).
Hypotheses 5: Service quality has a significant influence on purchase intention (\( \beta_{32} \)).

(2) Management Aspects
Hypotheses 6: The level of customer satisfaction has a direct influence on bank profitability (\( \gamma_{21} \)).
Hypotheses 7: Customer satisfaction has a direct influence on market share (\( \gamma_{11} \)).
Hypotheses 8: Market share has a direct influence on bank profitability (\( \beta_{21} \)).

3.5. Samples and Sampling Method

This study sampling is based on conceptual sampling, focusing on managers and customers of the banking industry to proceed with the investigation of the situation with this branch office, with manager and customer questionnaires distributed in a ratio of 1:3.

3.6. Questionnaire Design and Contents

(1) Customers Aspect Questionnaire

The questionnaire on customer attitudes toward service quality perception considered questions of the level of trust and effectiveness, so we chose the broadly used researcher's choice of PZB's [15] SERVQUAL assessment measurement table. SERVQUAL has two parts, consumer expectations and performance feelings, each with 22
itemized questions. The performance-based scaled developed SERVPERF is efficient in comparison with the SERVQUAL [7]. This study used the performance feelings part, SERVPERF, as measurement scale.

(2) Management Aspect Questionnaire
The objectives of the questionnaire in this part is banking main office business activities managers, assistant managers, or branch managers. Only this main office or branch office has answered questions concerning the level of satisfaction with one-year's business activity's target accomplishment situation; also available are one-year's market share's reorganization situation and the level of satisfaction of customers toward this main office or branch office service. From a discussion of the literature and interviews with experts, we still elected to use an assessment of the Shanghai Commercial Bank's achievements.

3.7. Data Analysis Methods
Because many differential analytical methods can at one time just handle the relationship between one set of independent variables and dependent variables, there is no way to simultaneously handle the relationships between a series of dependent variables; furthermore, as to linear structural relations, LISREL is one computer program which can be used to organize a causal model. For this reason, this study chooses to use a linear structural model to analyze the causal relationships between service quality, customer satisfaction, and profitability, as discussed with statistical analysis tools.

4. Results
4.1 Customer Aspect
Customer aspect data were gathered from personal interviews conducted at branch bank and mail in Taiwan. A total of 145 usable questionnaires were gathered from customers during March of 1995. The reliability in SERVPERF scale is 0.9448 (coefficient alpha in excess of 0.8), suggests that SERVPERF can be treated as unidimensional. Table 2 give the results of the LISREL VIII-based analysis for SERVPERF. Specifically, the chi square statistic universally indicates a general fit between the theoretical and measurement models for SERVPERF; the AGFI are also indicative of a general fit as 0.79 shows. These empirical results suggest that the unidimensional structure proposed by Cronin and Taylor [7] for SERVPERF model (see Fig. 1) is confirmed (i.e. the theoretical model is not rejected) in the research samples.

Hypotheses 1 addressed is whether perception of quality affect their attitude ($\gamma_{21}$); Hypotheses 2,3 considered is whether the causal order of the perceived service quality-satisfaction relationship ($\beta_{12}, \beta_{21}$); Hypotheses 4 investigated is whether customer satisfaction affects their purchase intentions ($\beta_{31}$); Hypotheses 5 addressed is whether consumer’s perceptions of service quality affect their purchase intentions ($\beta_{32}$). As indicated in table 3, the results suggest that (1) perception of quality has a significant (p<0.01) influence on attitude in the research samples (see table 3, path $\gamma_{21}$), (2) service quality has a significant (p<0.01 ) effect on customer satisfaction in the research samples (see table 3, path $\beta_{12}$), but customer satisfaction does not have significant(p<0.1) effect on service quality in the research samples (see table 3, path $\beta_{31}$), (3) customer satisfaction has direct effect on purchase intentions in the research samples (see table 3, path $\beta_{31}$), and (4) Service quality has a significant (p<0.025) impact on purchase intentions in research sample (see table3, path $\beta_{32}$).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SERVPERF</th>
</tr>
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<tbody>
<tr>
<td>$\beta_{21}$</td>
<td>-1.27</td>
</tr>
<tr>
<td>$\beta_{12}$</td>
<td>1.02</td>
</tr>
<tr>
<td>$\beta_{31}$</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Table 3 Standardized Parameter Estimates for Service Quality Causal Model
### 4.2 Management Aspect

Management aspect data were gathered from personal interviews conducted at the head office and mail in Taiwan. A total of 124 usable questionnaires were gathered from branch bank managers during March of 1995. The reliability in management aspect questionnaire is 0.96 (coefficient alpha in excess of 0.8), suggest that the questionnaire measurement is consistent. Table 4 give the results of the LISREL VIII-based analysis for management aspect model. Specifically, the chi square statistic universally indicates a good fit between the theoretical and measurement models for management aspect model; the AGFI are also indicative of a good fit as it shows 0.9. These empirical results suggest that the management aspect model structure (see Fig. 2) is confirmed in the research samples.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>LISREL Estimate</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_{21} )</td>
<td>-1.25</td>
<td>-1.58 a</td>
</tr>
<tr>
<td>( \gamma_{11} )</td>
<td>-0.07</td>
<td>-0.78</td>
</tr>
<tr>
<td>( \gamma_{21} )</td>
<td>1.16</td>
<td>4.03 c</td>
</tr>
</tbody>
</table>

where: \( a = p<0.1 \), \( b = p<0.025 \), \( c = p<0.01 \)

Hypotheses 6 addressed is whether the level of customer satisfaction has a direct influence on bank profitability(\( \gamma_{21} \)): Hypotheses 7 considered is whether customer satisfaction has a direct influence on market share(\( \gamma_{11} \)): Hypotheses 8 investigated is whether market share has a direct influence on bank profitability(\( \beta_{21} \)). As indicated in table 5, the results suggest that (1) customer satisfaction has a significant (\( p<0.01 \)) influence on attitude in the research samples (see table 5, path \( \gamma_{21} \)), (2) customer satisfaction does not have a significant effect on market share in the research samples (see table 5, path \( \gamma_{11} \)), (3) market share has significant (\( p<0.1 \)) effect on bank profitability in the research samples (see table 5, path \( \beta_{21} \)).

### 4.3. Assessment of Limitations

It is evident from customer aspect \( \beta_{31} \) that the level of customer satisfaction will directly influence purchase intention; furthermore, service quality also influences purchase intention (\( \beta_{32} \)). When customer's purchase intention strengthens, it raises the level of loyalty to this bank, imperceptibly influencing this bank's business activity growth and profitability.

If viewed from a managerial model, managers consider that customer satisfaction with service quality influences profitability (as \( \gamma_{21} \) shows), and actual improvements in service quality can influence profitability. Perhaps some discrepancies exist between these two as far as perception of service quality and between the customer aspect model and the management aspect model (PZB (1985) perceived that service limitations existed between the customer aspect model and the management aspect model.). For this reason, this study took customer aspects and management aspects models and synthesized them as in Fig. 3. The synthesis target is a more commonalized causal relationship model of service quality, level of satisfaction, and profitability; from the three results of this study, empirical evidence certainly exists for a causal relationship.

### 5. Conclusions

The major conclusion from this study is that the performance-based scale developed SERVPERF model and the customer satisfaction on profitability model are confirmed in Taiwan banking industry. Discussion of the empirical
evidence: From the customer's aspect, service quality has a noticeable influence on the level of customer satisfaction and customer satisfaction has direct influence on purchase intentions, but customer satisfaction does not have significant effect on service quality. The results that service quality exerts a stronger influence on purchase intentions than does customer satisfaction. Thus branch bank managers need to emphasize service quality and customer satisfaction, it raises the purchase intentions to this bank.

From management's perspective, customer satisfaction has a noticeable influence on profitability. Although discrepancies exist between customers' and management's perceptions of service quality, the limitation model can assess the causal relationship between service quality, customer satisfaction, and profitability. These results reveal an important point: continuing to improve quality has a noticeable effect on profitability.

References