

## Improving Employee Satisfaction Priority through Performance Control Matrix

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### Abstract

The study addresses Performance Control Matrix (PCM) to determine service quality items of priority for improvement. Most businesses focus on customer satisfaction when undertaking surveys of satisfaction and dissatisfaction, while generally neglecting employee satisfaction. Therefore, this study develops an integrated model to improve service quality in Taiwanese finance industry employees. A questionnaire is designed to determine the priority of improvement objectives derived from certain questionnaire items that fall into the improvement zone of the PCM. Ten items are found to fall into the improvement zone of the PCM. The present results show that the finance industry employees surveyed in Taiwan were dissatisfied with their job security, salaries, annual bonus, and fair distribution of operational profits. The ten improvement items mostly belong to two dimensions - 'Pay and Benefits' and 'Motivation'. The managers of the financial institutions should seek to improve these quality attributes by devoting more resources to these items, thus promoting employee satisfaction.

**Keywords:** Employee satisfaction; Importance-Performance Analysis (IPA); Performance Control Matrix (PCM); Service quality.

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## **1. Introduction**

To sustain competitiveness and long-term profitability, businesses devote themselves not only to the attraction of new customers, but also to the retention of old customers with a view to a continuing business relationship through incremental increases in purchases and the maintenance of customer loyalty (Gorst, Kanji & Wallace, 1998). Delivering superior customer value and satisfaction are crucial to the competitive edge of a firm. Undoubtedly, service quality and customer satisfaction are principal drivers of financial performance (Deng, 2007). Businesses, therefore, pursue quality in product and service in order to satisfy their customers (Yang, 2005). Excellent service quality and high customer satisfaction is the important issue and challenge for service industry (Hung, Huang & Chen, 2003). Today, service quality is considered a critical measure of organizational performance and continues to compel the attention of managers and academics (Yavas and Yasin, 2001). Studies on service quality have extensively examined service quality measurement to help superiors effectively manage service quality delivery (Parasuraman, Zeithaml & Berry, 1988; Yang, 2007). Most businesses agree that customer service quality provided to their target customers affects global business performance to some degree and becomes a crucial business strategy (Hung et al., 2003). In the absence of objective measures, businesses must rely on consumers' perceptions of service quality to identify their strengths/weaknesses, and design appropriate improvement strategies. This makes development of psychometrically sound and managerially useful instruments to measure service quality imperative (Karatepe, Huang & Chen, 2005). Customer satisfaction increases customer loyalty, reduces price sensitivity, increases cross-buying and increases positive word of mouth (Matzler, Fuchs & Schubert, 2004). Therefore, improving customer satisfaction is a critical issue for business managers in today's competitive global marketplace. Therefore, customer satisfaction must be translated into a number of measurable models to evaluate customer satisfaction level and organization operating efficiency.

Employees' job satisfaction has become a critical issue in the last two decades. A number of studies found a positive relationship between employee satisfaction, customer satisfaction and company performance (Homburg & Stock, 2005; Tang & Lee, 2014). Recent research has shown that employee satisfaction can be linked to customer satisfaction and business profit (Chen, Yang, Shiau & Wang 2006; Briggs, Jaramillo & Noboa, 2015). Employee job satisfaction has been shown to be one of the best predictors of turnover (Lee, 1988), and it can influence customers' perception of service quality (Rafaeli, 1989). Many studies have proposed that employees are the greatest assets of a company, and that satisfied customers must satisfy employees' requirements (Nebeker, Busso, Werenfels, Diallo, Czekajewski. & Ferdman, 2001; Chen, Yang, Lin & Yeh, 2007; Yang & Chen, 2010). Employee satisfaction influences organizational performance as much as customer satisfaction. Employees are the internal customers of the business; if they are satisfied with the current working environment and they are willing to cooperate with the business to accomplish business goals (Comm & Mathaisel, 2000; Decramer, Smolders & Vanderstraeten, 2013). Most studies highlight customer satisfaction, but generally neglect employee satisfaction.

Importance and performance/satisfaction on service elements are two indicators applied to evaluate the corresponding service quality performance. Therefore, scholars have developed the Importance-Performance Analysis (IPA) (Martilla & James, 1977) and Performance Control

Matrix (Chen, 2009) to improve the disadvantage of service quality. Usually, businesses focus on customer satisfaction survey, and evaluate their level of satisfaction/dissatisfaction (Comm & Mathaisel, 2000), while generally neglecting employee satisfaction. This study includes five sections: (a) literature review (b) materials and methods (c) results of Performance Control Matrix (d) discussions and (e) conclusions.

## 2. Literature review

### 2.1 Importance-Performance Analysis (IPA)

Importance-Performance Analysis (IPA) is a technique for prioritizing attributes based on measurements of performance and importance. The IPA was introduced by Martilla and James (1977) as a method for developing and analyzing business strategies. Importance–performance analysis has been applied as an effective means of evaluating a business’s competitive position in the market, identifying improvement opportunities, and guiding strategic planning efforts (Martilla & James, 1977). Some studies have modified and extended IPA. However, the basic framework has largely remained the same (Sampson & Showalter, 1999). A set of attributes pertaining to a particular service/good are evaluated on the basis of how important each is to the customer, and how the service/good is perceived to be performing relative to each attribute. This evaluation is typically accomplished by surveying a sample of customers. Mean performance and importance scores are used as coordinates for plotting individual attributes on a two-dimensional matrix as shown in Figure 1. Numerous researches about IPA application have been published. In the field of tourism, IPA methodology had been applied in a variety of industries including tourism industry (Enright & Newton, 2004; Feng, Mangan, Wong, Xu, & Lalwani, 2014), higher education sector (O’Neill & Palmer, 2004) and hot springs industry (Deng, 2007).

Based on cell location, service quality attributes are deemed as major or minor strengths and weaknesses. Quality attributes located in Quadrant A indicate opportunities for achieving or maintaining competitive advantage and are major strengths. The management scheme for this quadrant is *keep up the good work*. Quality attributes located in Quadrant B require immediate attention for improvement and are major weaknesses. The management scheme for this quadrant is *concentrate here*. The inability to identify these attributes can threaten a business’s place in the market and typically results in low consumer satisfaction. Quality attributes in Quadrant C are minor weaknesses and do not require additional effort. The management scheme for this quadrant is low priority. Quality attributes located in Quadrant D indicate that business resources committed to these attributes would be overkill and should be deployed elsewhere. These attributes are minor strengths. The management scheme for this quadrant is *possible overkill*.

Based on this analysis, particular improvement opportunities are determined. For example, researchers commonly suggest that major weaknesses (Quadrant B) should be top priority and targeted for immediate improvement efforts (Martilla & James, 1977). Conversely, attributes deemed major strengths (Quadrant A) should be maintained, leveraged, and heavily promoted (Lambert & Sharma, 1990).

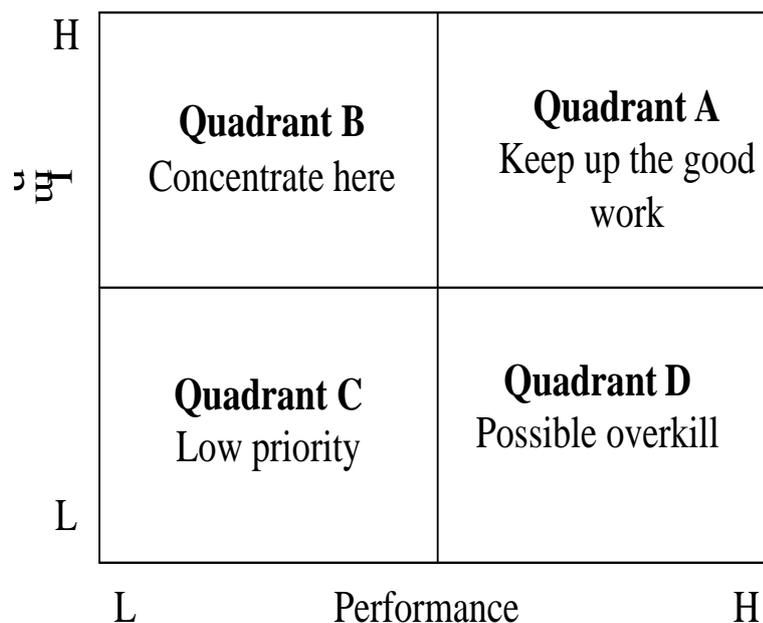


Figure 1. Importance-Performance Analysis (IPA)

## 2.2 Performance Control Matrix (PCM)

IPA has been applied in a number of settings with relatively little modification in form. However, other researchers have extended the basic IPA framework. Although various researchers have proposed minor modifications to the technique over the years, the basic framework has largely remained the same. Importance and satisfaction on service elements are two indicators applied to evaluate the corresponding service quality performance (Yang, 2005). Therefore, scholars have developed many models to improve disadvantages of service quality. Recently, Chen (2009) presented a Performance Control Matrix (PCM) in which the underlying framework was changed to consider a relationship between importance and satisfaction (Figure 2). Performance Control Matrix theorized that target levels of satisfaction for particular product/service attributes should be proportional to the importance of those attributes. The two bold diagonal lines in the performance matrix indicate the limits of the performance control zone (Maintain zone). Attributes within this zone can be maintained in accordance with the present situation. Service-quality items that fall into the bottom-right zone (Zone A; improvement zone) have greater importance than satisfaction; quality attributes in this zone, therefore, require more resources to be invested to improve satisfaction. Conversely, items that fall into the upper-left zone (Zone B; excellent zone) have less importance than satisfaction; quality items in this zone require fewer resources to be invested to prevent waste. Generally speaking, few items fall into the ‘excellent zone’.

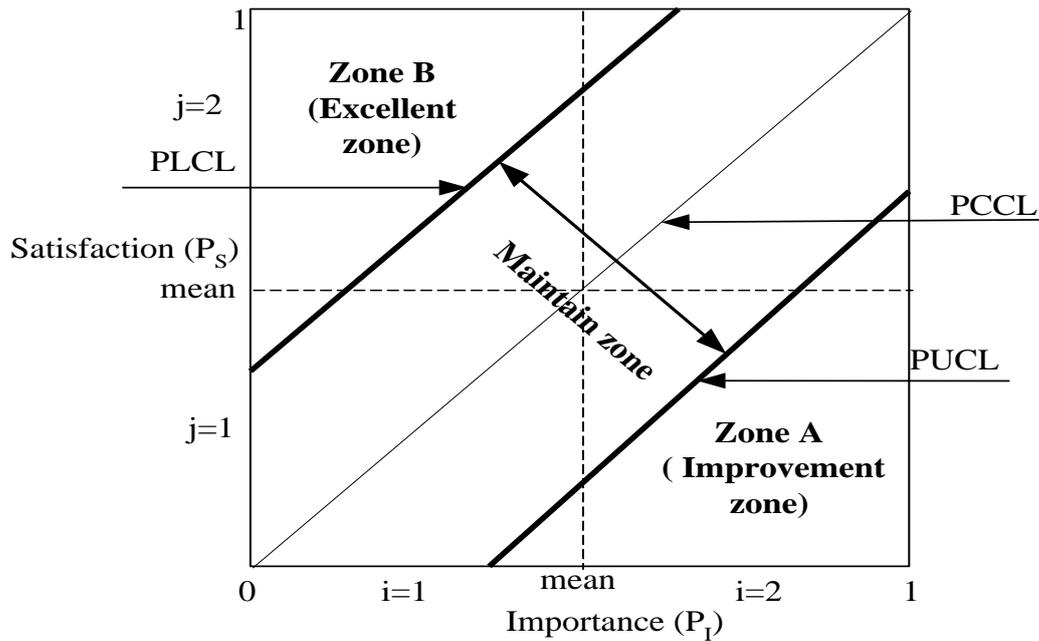


Figure 2. Performance Control Matrix

Chen et al., (2007) adopted the ‘importance’ and ‘satisfaction’ indicators to establish importance index ( $P_I$ ) and satisfaction index ( $P_S$ ) to improve service quality for higher education. Lin et al., (2006) proposed the opinion of generalization and standardization to evaluate operation performance for semiconductor industry. This study adopts the research concept proposed by Chen et al., (2007) and Lin et al. (2006) to establish performance indices and to achieve the standardization objective. In what follows, the random variable  $I$  denotes importance, whereas  $S$  denotes satisfaction. A k-point scale is adopted to evaluate the importance and of satisfaction each item. (Generally speaking, k was equal 5-point scales) The indices of importance ( $P_I$ ) and satisfaction ( $P_S$ ) are then defined as follows:

$$P_I = \frac{\bar{X}_I - \min}{5} \tag{1}$$

$$P_S = \frac{\bar{X}_S - \min}{5} \tag{2}$$

$P_I$ : index of importance

$P_S$ : index of satisfaction

$\bar{X}_I$ : mean of importance

$\bar{X}_S$ : mean of satisfaction

$\min$  = the minimum value of the k scale

Different coordinates [ $P_I$ ,  $P_S$ ] of performance indices form different areas. First, the Shewhart

control chart (Montgomery, 1991) was defined as the performance control line and the target value was set at 0. Thus, the  $\pm 3$  standard deviation was used to establish the performance upper control limit (PUCL) and the performance lower control limit (PLCL) as follows:

$$\begin{aligned} \text{PUCL} &= T+3\sigma \\ \text{PCCL} &= T=0 \\ \text{PLCL} &= T-3\sigma \end{aligned} \tag{3}$$

### 3. Materials and Methods

#### 3.1 Background of case study

America’s financial crisis had a great impact to bank industry in 2008, Taiwan’s finance industry was also devastated (particularly bank industry). Bank industry in developed countries has faced the dilemma in managing their business and it has brought up the growing awareness of performance measurement. Bank industry in Taiwan has faced the same problem as well. Between 1992 and 2014, the number of Taiwanese bank branches had grown dramatically from 1577 to 3482 and the number of foreign bank branches has also increased from 57 to 139 in total (Ministry of Finance in Taiwan, 2014) (see Table 1). Consequently, the bank industry is fiercely competitive and must establish seamless, integrated models applicable to practical strategies. On the one hand, since the banks are facing the problem of operating performance, they must establish a new management system. The banks are forced to re-evaluate what drives and how to improve the bank operating efficiency and employee satisfaction. When organizations focus on customer relation management, they should not forget that employees are also internal customers. Organizations have satisfied customers only if they have satisfied employees. Therefore, the study utilizes a survey of employee satisfaction in a finance industry to improve satisfaction.

**Table 1.** Taiwanese bank number and bank branch number

Year	Domestic bank	Domestic bank branch	Foreign bank	Foreign bank branch
1992	42	1577	37	57
1997	47	2176	46	69
2000	53	2693	39	70
2005	45	3285	36	68
2008	37	3249	31	151
2014	40	3482	30	139

Resource: Ministry of Finance in Taiwan (2014)

#### 3.2 Questionnaire design and structure

Although many studies have utilized surveys of customers to assess satisfaction, few have used surveys of employees. The present study adopts the attitude of employees who are ‘internal customers’ of the business; as such, the study developed a questionnaire seeking data on employee satisfaction and employee perceptions of importance with respect to a series of quality attributes in a finance industry.

To assess employee satisfaction and perceptions of importance in any industry, the requirements of the employees must first be determined. Different industries have different business cultures and different employee requirements (Yang, 2003; Chen *et al.*, 2006). Therefore, The present questionnaire was based on: (i) a review of the literature (Comm & Mathaisel, 2000; Metle, 2003; Chen *et al.*, 2006; Chen *et al.*, 2007); (ii) discussions with five experts (including human resources management consultants and scholars); and discussions with 12 employees in a finance business. This led to the following dimensions being used in the questionnaire:

- \* work environment (seven items);
- \* pay and benefits (five items);
- \* supervision (nine items);
- \* education and training (three items);
- \* motivation (six items); and
- \* organization vision (five items).

The final questionnaire was divided into three parts, as follows:

- \* *demographics*: sex, age, qualifications, and years of service;
- \* *importance survey*: responses requested on a Likert-type scale of 1 to 5 (with 1 representing 'extremely unimportant' and 5 representing 'extremely important');
- \* *satisfaction scale*: responses requested on a Likert-type scale of 1 to 5 (with 1 representing 'extremely dissatisfied' and 5 representing 'extremely satisfied').

### 3.3 Demographics of sample

The questionnaire was distributed by hand to 23 finance companies situated in Taiwan, in September 2008. In all, 760 questionnaires were distributed and 537 were returned (a response rate of 70.65%). Among the returned questionnaires, 19 were incomplete and therefore discarded; this left a total of 518 questionnaires for analysis. The demographics of the final sample are shown in Table 2. The majority of respondents (84.17%) were female, and most (50.77%) were aged 30–39 years. The majority of the employees (94.40%) had completed university. The majority (38.03%) had been in their present employment for 5–10 years, but a few (30.31%) had been in their present employment for 11-20 years.

**Table 2.** Demographics of sample

	Items	No	Percentage
Sex	Male	82	15.83%
	Female	436	84.17%
Age	20-29	263	50.77%
	30-39	164	31.66%
	40-49	64	12.36%
	Above 50	27	5.21%
Qualifications	Higher school	7	1.35%
	University	489	94.40%
	Master	22	4.25%
Years of service	Below 5	103	19.88%
	5-10	197	38.03%
	11-20	157	30.31%
	Above 20	61	11.78%

### 3.4 Reliability and validity of the questionnaire

To verify reliability and construct validity of the formal questionnaire, factor analysis was conducted to verify the construct validity and Cronbach's  $\alpha$  value for each dimension was computed to verify the reliability. The factor analysis was based on the principal component analysis with varimax rotation, eigenvalue exceeding 1 and factor loadings exceeding 0.5. The test value of Kaiser–Meyer–Olkin (KMO) for 'employee importance' was 0.921 and it was 0.927 for 'employee satisfaction'. The values for individual dimensions are shown in Table 3. The p-value of the Bartlett's sphericity test was almost zero. Moreover, the cumulative variance explained is 73.232%. Consequently, the construct validity of the questionnaire was quite good (Kaiser, 1974). Cronbach's  $\alpha$  for 'employee importance' was 0.908 and it was 0.897 for 'employee satisfaction'. The values for individual dimensions are shown in Table 4. These results demonstrate that the questionnaires were extremely reliable. In terms of validity, the questionnaire had been designed on the basis of related studies, consultation with service-quality professionals and consultants, and discussion with employees. This demonstrates that the scales of the formal questionnaire have considerable reliability (Cronbach's  $\alpha$  values for each dimension were greater than 0.7) (Nunnally, 1978).

**Table 3.** Results of factor analysis

Dimensions	Importance survey		Satisfaction survey	
	Eigenvalue	Variance Explained (%)	Eigenvalue	Variance Explained (%)
Work environment	3.015	15.225	4.251	17.714
Pay and benefits	2.156	9.258	1.413	6.345
Supervision	3.457	17.349	4.505	18.771
Education and training	1.958	7.512	1.176	4.443
Motivation	2.859	12.891	2.171	9.354
Organization vision	2.571	10.997	2.489	10.372

Importance survey cumulative variance explained 73.232%  
Satisfaction survey cumulative variance explained 66.999%

**Table 4.** Reliability for the five dimensions of questionnaire

Dimensions	Importance survey	Satisfaction survey
	Cronbach's $\alpha$	Cronbach's $\alpha$
Work environment	0.873	0.834
Pay and benefits	0.841	0.845
Supervision	0.922	0.819
Education and training	0.908	0.875
Motivation	0.826	0.792
Organization vision	0.844	0.793

#### 4. Results of Performance Control Matrix

The importance means, satisfaction means, index of importance and index of satisfaction of the 35 items are shown in Table 5. The standard deviation ( $\sigma$ ) of this attribute in the performance control matrix was 0.0923. This study had set the PUCL and PLCL limits at  $\pm 3$  standard deviations. Therefore, three standard deviations were set as the limits for PUCL and PLCL, which meant that PUCL was set at 0.276 and PLCL at  $-0.276$ .

These coordinates were mapped into the performance control matrix (Figure 3). The abnormal coordinates outside PUCL and PLCL were located after drawing the control lines. Abnormal coordinates (outside PLCL) were found in the case study and no items fell into the 'excellent zone'. Items found outside PUCL were items 7, 8, 9, 10, 12, 21, 26, 27, 28 and 31. Those improvement items were: Appropriate working time (No. 7), provision of good salaries (No. 8), provision of job security (No. 9), provision of good retirement arrangements (No. 10), provision adequate for an annual bonus (No. 12). The company can help to deal with customers when dispute occurs (No. 21), provision of profit-sharing plan (No. 26), provision of encouragement bonus in good time (No. 27), fair distribution of operational profits (No. 28), communication of business operational conditions to employees (No. 31). Managers should seek to improve the quality attributes that fall into the 'improvement zone'. This indicated that business resources should be increased in these items to promote employee satisfaction.

**Table 5.** Survey results of Performance Control Matrix

No	$\bar{X}_I$	$\bar{X}_S$	$P_I$	$P_S$	Regions
1	3.09	3.25	0.523	0.563	Maintain
2	3.57	4.01	0.643	0.753	Maintain
3	3.74	4.15	0.685	0.788	Maintain
4	3.89	3.78	0.723	0.695	Maintain
5	3.59	3.25	0.648	0.563	Maintain
6	4.08	4.15	0.770	0.788	Maintain
7	4.18	2.73	0.795	0.431	Improvement
8	4.75	3.14	0.938	0.535	Improvement
9	4.89	2.07	0.973	0.268	Improvement
10	4.49	2.79	0.873	0.448	Improvement
11	4.05	3.48	0.763	0.620	Maintain
12	4.68	2.95	0.920	0.488	Improvement
13	4.21	3.62	0.803	0.655	Maintain
14	4.02	3.67	0.755	0.668	Maintain
15	4.17	3.52	0.793	0.630	Maintain
16	4.01	3.87	0.753	0.718	Maintain
17	3.97	3.96	0.743	0.740	Maintain
18	4.05	4.03	0.763	0.758	Maintain
19	4.26	3.87	0.815	0.718	Maintain
20	3.85	3.48	0.713	0.620	Maintain
21	4.28	2.98	0.820	0.495	Improvement
22	4.12	4.18	0.780	0.795	Maintain

Table 5. continued

No	$\bar{X}_I$	$\bar{X}_S$	$P_I$	$P_S$	Regions
23	3.77	3.79	0.693	0.698	Maintain
24	4.16	3.88	0.790	0.720	Maintain
25	3.82	3.79	0.705	0.698	Maintain
26	4.76	2.34	0.940	0.335	Improvement
27	4.25	2.69	0.813	0.423	Improvement
28	4.37	2.89	0.843	0.473	Improvement
29	3.88	3.59	0.720	0.648	Maintain
30	4.02	3.48	0.755	0.620	Maintain
31	4.65	2.42	0.913	0.355	Improvement
32	3.89	3.55	0.723	0.638	Maintain
33	4.05	3.89	0.763	0.723	Maintain
34	4.11	3.95	0.778	0.738	Maintain
35	3.86	3.87	0.715	0.718	Maintain

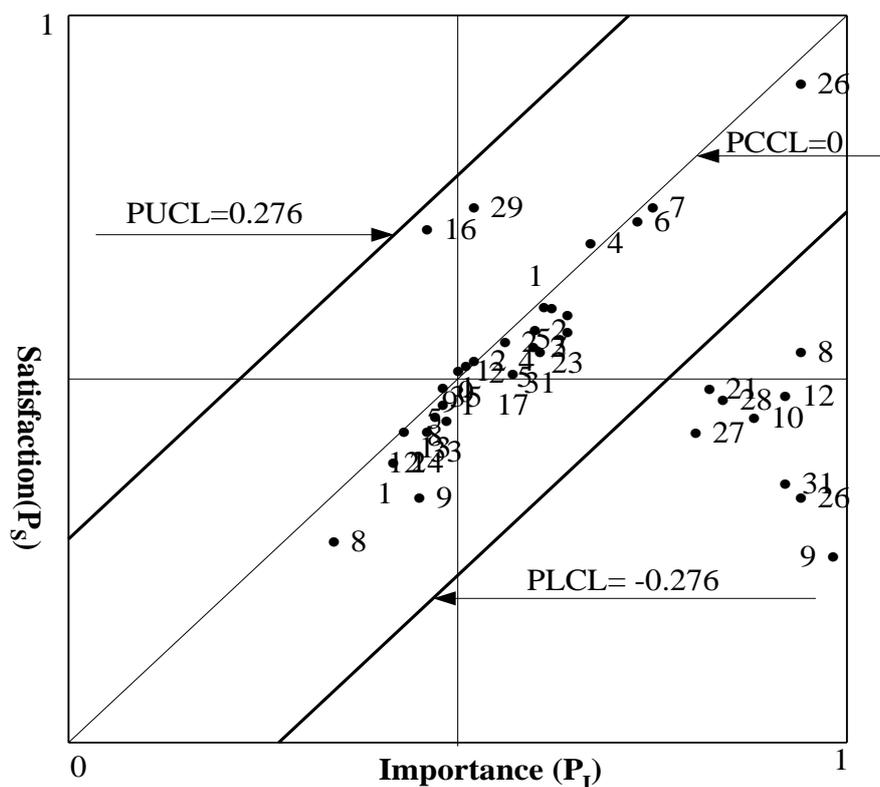


Figure 3. Performance Control Matrix of case study

### 5. Discussions

Owing to the financial crisis and given the rapidly changing nature of economic environment, the finance industry requires highly specialized skill and knowledge. Salaries, retirement arrangements, annual bonus and job security have been shown to be important personal issues that can affect the satisfaction of employees in any industry (Chen et al., 2006; Chen et al., 2007). The present results show that the finance industry employees surveyed in Taiwan were dissatisfied

with their job security, salaries, annual bonus, and fair distribution of operational profits. This finding is consistent with studies carried out and reported (Chen *et al.*, 2007; Hung, *et al.*, 2003). Consequently, the first problem that needs to be improved is the job security system. The frequent use of employee lay-offs by businesses in response to problems, when the problems frequently result from a bad economic environment or wrong investments, creates among employees a feeling of job insecurity. Therefore, businesses must establish a job-security system that allows employees to work peacefully and ensures sustainable development of the business. The second and third problems are very closely related. In Taiwan, finance businesses generally use higher salaries to attract talented employees and expect to keep the hard core of employees for boosting employee morale. During good economic times, the money allotted to individual employees can be worth millions of Taiwan dollars per person. However, many employees still feel that the allotment is unfair and insufficient. These employees hope to receive more money allotments. Therefore, businesses should make it a priority to improve the fairness of money allotment systems. Another problem that needs to be improved is the annual bonus system. Annual bonus is the performance of hard working during the entire year. Therefore, employees care a lot about the annual bonus allotment in Taiwan. When employees are satisfied with the appropriation of an annual bonus, they will be less likely to jump ship for other companies immediately after the appropriation. Since the bonus is very important to employees, an appropriation system should be established immediately for determining and distributing fair bonus levels.

## 6. Conclusions

Several quality improvement models have been developed to enable service providers to improve deficiencies in the service quality they offer. However, most models have relied solely on assessments of *satisfaction* with particular items and have thus failed to take into account the relative *importance* of various quality attributes in shaping perceptions of satisfaction. This causes difficulties for providers in assessing priorities for improvement. As organizations focus on customer relation management, they generally neglect employee satisfaction. Businesses generally determine enhancement priorities based on low satisfaction items, rather than considering actual employee requirements. Although this approach improves some quality attributes, it does not satisfy the actual employee requirements. Consequently, a lot of money is spent without improving employee satisfaction. This study makes contributions. First, the study adopts a PCM to decide improving quality items for finance industry employees. The company adopts businesses resources as the appropriate management strategy to prevent waste. Second, the study also identifies items of surplus resource investment, thereby providing the means of minimizing resource wastage. In sum, the study has presented a complete assessment model that helps managers to identify items for improvement and simultaneously promotes cost and time efficiencies in service processes.

Using these methodologies, the study has identified ten items as being of priority for improvement. The ten improvement items mostly belong to two dimensions - 'Pay and Benefits' and 'Motivation'. But, the 'Motivation' dimensions and money are inseparable. The case study shows that employees care deeply about having a job or even a steady income after the financial crisis. These research findings share the similarities with high-tech industry and education sector in Taiwan. Business resources are always limited; therefore, providers must devise appropriate improvement strategies to improve service quality while they contain costs and thus ensure a

viable competitive advantage. The present study has demonstrated that the PCM provides an excellent measuring instrument for assessing priorities for quality improvement.

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