

CRITICAL FACTORS AFFECTING THE IMPLEMENTATION DECISIONS AND PROCESSES OF ISO QUALITY MANAGEMENT SYSTEMS IN TAIWANESE PUBLIC SECTORS

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Abstract

This paper introduces the essence of Government Reinvention and the opportune movement for public sectors to reinvent their organizations by implementing ISO management series. An empirical study that utilizes four in-depth interviews and a mailed survey to assess initiatives and key factors of implementing ISO programs in various governmental departments in Taiwan, has been carried out. The study found five critical factors of a successful ISO implementation in public sector. The results of this study indicate that through these ISO generic management series Taiwanese government can not only promote national competitiveness but also achieve the sustainable development in Taiwan.
(GOVERNMENT REINVENTION; PUBLIC SECTOR; ISO SERIES FACTOR ANALYSIS)

1. Introduction

Taiwanese public services have experienced redundancies, cost cutting, closure of operations, and challenges to the quality of their services. Against this background, Taiwanese public services have been encouraged to adopt private sector practices for organizational survival change. Different approaches to public service management, e.g., total quality management (TQM), business process reengineering, ISO series, benchmarking, etc., which are concerned with productivity, quality, performance review and measurement, have been taken. Two major programs, the Administrative Reform Program and the Government Reinvention, have been performed since 1993. The overall goal of these programs is to plan and structure a mechanism to integrate new responsibilities while also meeting the demands of citizens to prove public sectors are providing quality services in a manner that addresses their range of financial, environmental, and social concerns. In order to achieve this goal, a customer and efficiency orientated management system of government services is necessary [1].

Since the Geneva-based International Organization for Standardization (ISO) introduced the ISO 9000 series for the purpose of facilitating global trade and quality improvement in 1987 [2], the success of ISO series has brought the idea of quality management to the attention of a much wider business community. Although ISO series are highly appreciated in business administration, these series are not limited to the business community only. Global governments are currently implementing the quality management system (QMS) with the goal of attaining certification to the International Quality Management System Standards. Under the operation of QMS, government can consolidate authority with relevant responsibility through document control and standardization of operation process.

ISO 9000, viewed as a strategy for the implementation of TQM, is currently promoted in Taiwanese public sectors. We raise the following fundamental questions: What are motivations and key factors of implementing ISO programs in various Taiwanese governments? What changes can be effected during the implementation so that governments may be said to be efficient and effective? What steps may be taken to determine whether or not they have followed the best-practice procedure and to determine whether or not they have gained all the benefits that the ISO standards have to offer? The answers to these questions are crucial to the development of an effective ISO implementation program in Taiwan. We conduct a retrospective survey of managerial perceptions about ISO implementation in Taiwanese public sectors to examine factors that have been identified as important determinants of ISO implementation - variables that have, to date, been typically studied in private sector practices.

In order to put later discussions in perspective, the following section addresses a brief description of ISO implementation programs in Taiwanese public sectors for the purpose of providing a minimal background.

2. ISO Implementation in Taiwan Government: A Background

There are near 7,800 public sectors and around sixty million so-called public servants in Taiwan [3]. Although ISO series are voluntary standards in nature and unlikely to be made mandatory by Taiwanese government at present, the series are prepared with the participation and support of many organizations in Taiwan. The premier institutions responsible for quality and the implementation of the ISO standards in Taiwan include government offices, e.g., the Bureau of Standards, Metrology and Inspection (BSMI), the Intellectual Property Office (IPO), and government-related foundations, e.g., Industrial Technology Research Institute. These institutes not only provide domestic manufacturing, service industries, and public sector services with training/coaching programs and technical assistance but also help them apply for the quality assurance registration.

According to the official data, 1,672 organizations supervised by BSMI have been certified with ISO 9000. Of these 1,672 organizations, only 8.3% (n = 139) of them are public sectors. Despite that ISO has been promoted in public sectors, this low percentage strongly suggests that Taiwanese public sectors have been slow in adopting ISO series. Yet, figure 1 shows that the rate of take-up increases yearly. Most of the 139 public sectors were certified with ISO 9002, only 6.5% (n = 9) were certified with ISO 9001. Among these 139 public sectors, “Service (57.6%)” accounts for the largest pool; and “Food and beverage (15.1%),” “Chemistry (14.4%),” and “others (12.2%)” follow it (see Table 1). Moreover, only 16 agencies among these 139 sectors are directly related to civil services and provide daily services to Taiwanese citizens¹.

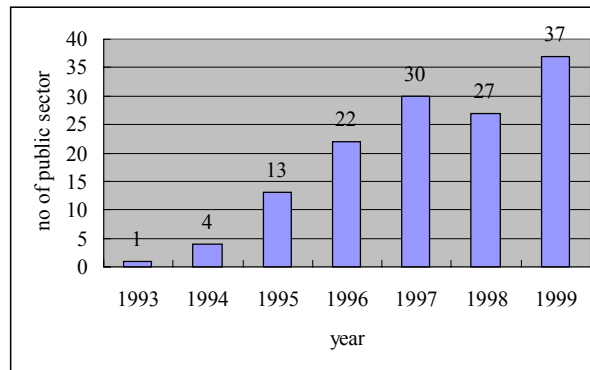


Figure 1: Numbers of Taiwanese public sectors certified with ISO from 1993 to 1999.

Table 1: BSMI Official data of ISO 9000 Certificates in Taiwan*

| Category | Private sector | Government organization | Total |
|-----------------|----------------|-------------------------|-------|
| Electronic | 212 | 0 | 212 |
| Machinery | 487 | 1 | 488 |
| Chemistry | 497 | 20 | 517 |
| Electrical | 181 | 0 | 181 |
| Food & beverage | 32 | 21 | 53 |
| Services | 41 | 80 | 121 |
| Others | 83 | 17 ⁺⁺ | 100 |
| Total | 1533 | 139 | 1672 |

*Main Source: [4].

⁺⁺All of these 17 organizations are offices related to military services.

¹ They are Taipei Rapid Transit Cooperation, Taipei City Motor Vehicle Supervision Dept., Taipei City Bureau of Civil Affairs and Affiliated Household Registries of Districts, Pan Chiao City Government (United Service Center), Taipei City Government Building, Public Affairs Management, Kaohsiung Harbor Bureau, National Tax Administration of Kaohsiung, Kaohsiung Environmental Protection Agency, Kaohsiung Customs Bureau, Kaohsiung Tax Office, National Tax Administration of Southern Taiwan, Construction Management Division of Kaohsiung City Government, Bureau of Civil Affairs, Kaohsiung County Government, Bureau of Housing and Urban Development of Taiwan Provincial Government, National Freeway Bureau, Bureau of National Health Insurance Central Branch.

3. The ISO Survey

Between March and May of 1999, we first conducted four in-depth interviews with top authorities primarily responsible for ISO implementation in government services that all had achieved ISO 9002 system in 1998. These four services were: (1) Kaohsiung Harbor Bureau, the first harbor management department achieved ISO; (2) National Tax Administration of Kaohsiung, the first central government tax administration achieved ISO; (3) Taipei Rapid Transit Corporation, the first public transit service certified with ISO; and (4) Kaohsiung City Environmental Protection Administration. This interview approach was qualitative in nature, focusing on the motivations, characteristics of organizations as well as their experiences with ISO. In addition, we executed a comprehensive survey to document the current state and the profile of Taiwanese public sectors that have implemented ISO series, and their organizational motives and experiences with the certification process.

3.1 Questionnaire designed

Our survey questionnaire was developed by the amalgamation of relevant literature on ISO 9000 implementation, particularly related to three previous survey instruments [5-7].

Amalgamating available literature [5, 6, 8-18], by examining case studies and through interviews with ISO authorities in many firms, has identified key motivations or benefits for adopting ISO series.

Put in the context of implementing ISO series in Taiwanese public sectors, for example, regulatory requirements often come from *direct request by central government* and *policy requirements of Government Reinvention*. Freeman-Bell and Grover [13], in a survey of 25 local authority services, found that one main reason for implementing ISO 9000 was as a result of customer pressure. Curry and Monaghan [19] observed that the opportunity to reduce operating costs for local authority services in implementing ISO.

Similarly, a variety of factors that influence the ISO implementation process have been identified [5, 20-25]. They are *top management's commitments and supports to achieving the certification*, *employees often resist organization changes*, *establish and maintain good procedures for communication among all levels of employees*, *encourage the employees' active participation*, *share the same views of maximizing the benefits of the standards*, *resolve conflict effectively*, *education, training, and preparation*, *a good documentation and control system*, *a strong and regular management review*, *continuous internal audits*, and *standardized coding and filing process*, and *higher costs and increased paperwork* as hurdles while they implement ISO series.

A total of 39 questions were used in the questionnaire. The major categories in the final instrument were: (1) profiles of the surveyed organizations, (2) motives or perceived benefits of implementing ISO 9000 standards, and (3) perceived critical factors in the implementing process. The survey questions used five-point Likert scale descriptors (1 = strongly disagree and 5 = strongly agree) to collect the subjective idea of managers and employees on the aspects of motivation, benefits, and execution. (The questionnaire is available on request to those who are interested.)

3.2 Surveyed Samples

According to the BSMI's official data and information collected via internet and telephone interviews with twelve local auditing agencies, we identified 118 ISO-9000-certified Taiwanese public offices, including 105 offices certified by BSMI from 1993 to 1999 and 13 offices with other agencies' registration. Considering the fact that at least two-third of these 118 sectors are branches of Taiwan Tobacco and Wine Monopoly Bureau Winery, Taiwan Sugar Corp. Factory, Chinese Petroleum Corp., Taiwan Power Company, we employed a purposive and non-random sampling method to select 22 public sectors to be the subjects of our survey. Our samples cover four central government offices, five local authorities, ten state-owned enterprises, two military agencies, and one university. Specifically, national universities in Taiwan can be regarded as public institutions and their management as public administration because of funding sources and the nature of services.

Two kinds of staff were surveyed in each chosen department, one at the senior management level, and the other one at the operational level. The purpose was to explore the experiences and perceptions of ISO series at two different organizational levels in order to develop as true a reflection as possible of the effects of the standards on both the services themselves and the overall employees. In February 1999, 664 questionnaires were delivered to the 22 selected offices, 218 were for managers, and 446 were for employees.

3.3 Reliability and Validity

The questionnaire was reviewed by a top manager of NTAK, the most successful governmental organization implementing ISO 9000 in Taiwan, and a colleague who is an expert in marketing research, and pre-test on several local administrators to ensure its content validity and to verify the clarity of the questions. Based on their comments, the terminology in various sections was improved, and greater clarification of the reason why top executives were surveyed was made in the introductory section. Internal consistency analysis of the questionnaire responses was established through the Cronbach α technique. The average α value 0.96 of the study indicates an acceptable level of reliability of the scales. In addition, factor analysis was applied to extract the main factors affecting the success of ISO programs. We employed Cronbach α to test the reliability of these factors and Communality to test the validity of corresponding items. As a result, the α values are all larger than 0.8, indicating that the factors are reliable; the communality of all items are larger than 0.5, indicating that each question in the questionnaire is valid.

4. Research Results

4.1 Profile of the responding offices

At the end of April 1999, we received 509 survey results from 21 offices. Total response rate of the mail survey was 76.7% based on valid responses; or 167 executives and top managers and 342 employees. Of these respondents, 68.6% (n = 349) are males, and 31.4% (n = 160) are females.

Public sectors -Table 2 lists the defined public sector represented by the responding offices and the number of respondents from each sector. Corresponding to the population, "Service" accounts for the largest pool of respondents among the distinct sectors, and is followed by "Food and beverage" and "Chemistry." Of these 21 responding offices, only one agency has been awarded with ISO 9001 certificates, others all have got ISO 9002 registrations.

Table 2: Types and characteristics of valid sample

| Public Sector | No. of offices | No. of respondents |
|---------------------|----------------|--------------------|
| Chemistry | 3 (14.3%) | 72 |
| Food & beverage | 4 (19.0%) | 102 |
| Services | 11 (52.4%) | 280 |
| Others ⁺ | 3 (14.3%) | 45 |

⁺Others include one university and two research centers related to military.

Budget and size - Table 3 shows that the gross annual 1999 budget of the responding offices range from below US\$1 million to above US\$300 million; and they employ from fewer than 100 to more than 900 workers.

Table 3: Budget and number of employees of surveyed public organizations/offices

| Budget | No. of offices | No. of Employees | No. of offices |
|----------------------------|----------------|------------------|----------------|
| less than US \$ 1 million | 2 | fewer than 100 | 2 |
| Between 1- 50 million | 11 | 101-300 | 4 |
| Between 50-100 million | 2 | 301-500 | 2 |
| Between 100-200 million | 0 | 501-700 | 1 |
| Between 200-300 million | 3 | 701-900 | 3 |
| more than US \$300 billion | 3 | more than 900 | 9 |

Quality systems - Only two of our surveyed offices have never implemented other quality systems. Nineteen of them have established at least one quality system, e.g., fifteen have QCC, and six province-owned enterprises have annual quality auditing systems. In particular, eight of them attempt to establish TQM afterwards, and view ISO 9000 as "the path to TQM". Yet, these eight offices with number of employees more than 900 are all relatively large organizations. This finding supports the view that large organizations are more likely to implement ISO 9000 as a part of a TQM program than small organization [6].

Sources of ISO information - More than half of these offices gained ISO information via inter-government documents. It shows that official document is the main communication tool among government departments.

External consultant - The use of external consultants is extremely important when the goal of the registration is not only the certificate itself, but also a true and meaningful improvement in quality [20]. Sixteen sectors participated in this study chose external consultants to achieve ISO certificates, and thirteen of them completed their ISO programs under the guidance of private management consulting firms. Five sectors chose to implement ISO by themselves based on the same reason, i.e., “The external consultants may not understand the operational processes. As a result, the structure established by them may not suit the company”.

Time and Cost for ISO implementation - Two thirds of them spent almost a year to gain their certificates. The expenditure of implementing ISO systems, ranging from US\$17,000 to US\$45,000 among these offices, only seem to be an issue for local governments as discussed in literature. More than eighty percent of our surveyed offices revealed various financial resources for ISO certification such as the budget complemented by their chief administration, money divert from “development and research budget,” and from the expenditure of capital accounts.

4.2 Important Results of Motivations/Perceived Benefits

The motivation issue was explored through both an open-ended question and a multiple-choice question. The multiple-choice question lists all motivations in literature that played a role in the decision to seek certification. The answers to both questions have considerable overlap. Listed in a descending order, six motivations identified in this categories are: (1) to enhance service quality, (2) to follow the global trend, (3) to improve department image, (4) to promote executive efficiency, (5) to satisfy needs of customers, and (6) to reform organization structure.

All respondents of our in-depth interviews perceived that service quality is expected by the general public owing to public services being funded substantially through taxation. Although ISO standards do not ensure high-quality goods or services[26], all respondents believed that having the quality system in place ensures that their organizations may have the capability to provide quality services to the public. Their offices adopted ISO to enhance service quality and executive/operational efficiency, and ultimately to promote their public images. For example, under the mission of establishing Kaohsiung Harbor as the Asian Pacific Operational Center, KHB employed ISO 9002 as a manner to improve the operational efficiency and service quality, to enhance executive management, and eventually, promote overall competitiveness, said by the chief of the ISO group of KHB. NTAK implemented ISO 9002 to standardize and rationalize its operation, to promote its service quality, and to win the public’s confidence and trust in tax administration.

In addition, nine five-point Likert scales measured various types of perceived benefits of ISO. Table 4 shows that the benefits of items B1-B6 are all significant, except the items of “cost reduction,” “reduce defect rate,” and “increase sales.” Surprisingly, the respondents of categories of “Chemistry” and “Food & beverage” placed relatively low priorities on “reduce defect rate” and “increase exports”. Note that employees, who make the bulk of the employee population, indicated fewer benefits of the ISO efforts compared to supervisors.

Table 4: T test results of perceived benefits for implementing ISO⁺

| Benefits | Mean (SD) of executives | Mean (SD) of employees |
|--|--------------------------|--------------------------|
| B1: Promote image of public sector | 4.19 (0.60) ^a | 3.87 (0.86) ^a |
| B2: Improve service quality and customer satisfaction | 3.99 (0.67) ^a | 3.76 (0.85) ^a |
| B3: Control quality strictly | 3.98 (0.69) ^a | 3.74 (0.87) ^a |
| B4: Well define responsibility, authority, and operation of each division. | 4.04 (0.64) ^a | 3.69 (0.89) ^a |
| B5: Enhance administration efficiency | 3.80 (0.76) ^a | 3.58 (0.92) ^a |
| B6: Put training program into practice | 3.79 (0.67) ^a | 3.59 (0.83) ^a |
| B7: Cost reduction | 3.25 (0.89) ^a | 3.13 (1.00) |
| B8: Reduce defective rate | 3.10 (0.89) | 3.09 (0.96) |
| B9: Increase sales | 3.25 (0.89) | 3.03 (0.92) |

⁺ The null hypothesis is that the mean is three, and the alternative hypothesis is that the mean is greater than three.

^a: the significant level is 0.01

4.3 Perceived critical factors in the ISO implementing process

Critical factors in the ISO implementing process were measured by 25 five-point Likert scale descriptors. In this rating scheme, a score of five means that the respondents agree there is a strongly correspondence between a particular item and their ISO implementation process. Table 5 shows except the factors of C13 and C20, the rest 23 items are all significant for executives and employees. In other words, employees do not agree that “the level of employees’ resistance against ISO” and “documentation systems integrated well” are the critical factors in the ISO implementing process. Furthermore, differences of the means within each question (based on the split between executives and employees) were compared using independence samples *t*-tests. The result shows that executives and employees perceive the importance of factors C13, C16, C20, C21, C23, and C24 differently. That is, executives perceive less resistance than employees do; and executives emphasize the impact of “the level of employee’s accommodation with ISO systems,” “the integration level of the documentation systems,” “budget supports,” “implementation models provided for all subordinate divisions,” and “experiences sharing via workshops” more than employees do.

Table 5: *T* test results of critical factors in the implementing process⁺

| Critical factors in the implementing process | Mean (SD) of executives | Mean (SD) of employees |
|---|--------------------------|--------------------------|
| C1: Recognize the spirits and concepts of ISO. | 3.80 (0.76) ^b | 3.42 (0.69) ^b |
| C2: Understand the quality policy thoroughly. | 3.97 (0.68) ^b | 3.59 (0.72) ^b |
| C3: Realize the whole process thoroughly. | 3.79 (0.78) ^b | 3.29 (0.71) ^b |
| C4: Realize operational tasks/corresponding clauses. | 3.72 (0.76) ^b | 3.26 (0.78) ^b |
| C5: Mid level managers receive an integrated training. | 4.00 (0.58) ^b | 3.78 (0.75) ^b |
| C6: Top managers firmly support the ISO program. | 4.25 (0.60) ^b | 3.97 (0.83) ^b |
| C7: Top managers actively involve in important tasks. | 4.15 (0.63) ^b | 3.81 (0.80) ^b |
| C8: Top managers fully realize implementation issues. | 4.03 (0.65) ^b | 3.70 (0.87) ^b |
| C9: The SC has sufficient authority. | 3.95 (0.68) ^b | 3.61 (0.81) ^b |
| C10: The SC can resolve conflicts efficiently. | 3.83 (0.70) ^b | 3.52 (0.80) ^b |
| C11: First-line employees receive systematic training. | 3.96 (0.71) ^b | 3.62 (0.77) ^b |
| C12: Internal auditing is continuous in all divisions. | 4.18 (0.61) ^b | 3.81 (0.74) ^b |
| C13 ⁺⁺ : The level of employees’ resistance against ISO. | 3.13 (0.83) ^a | 3.07 (1.01) |
| C14 ⁺⁺ : The level of influence of employees’ schedules | 3.31 (0.73) ^b | 3.12 (0.91) ^a |
| C15 ⁺⁺ : The decrease of working wills of employees | 3.59 (0.82) ^b | 3.46 (0.84) ^b |
| C16: Employees accommodate well with ISO system. | 3.36 (0.68) ^b | 3.28 (0.72) ^b |
| C17: Employees operate based on operational manuals. | 3.53 (0.65) ^b | 3.39 (0.73) ^b |
| C18: Divisions involved in ISO implementation fully cooperate with each other. | 3.55 (0.71) ^b | 3.38 (0.77) ^b |
| C19: Divisions implementing ISO well coordinate with divisions that are not involving in the program. | 3.43 (0.69) ^b | 3.25 (0.71) ^b |
| C20: Documentation systems are well integrated. | 3.17 (0.71) ^b | 3.06 (0.68) |
| C21: Governments provide enough budget supports. | 3.91 (0.94) ^b | 3.76 (0.92) ^b |
| C22: Establish an agency to handle tasks of quality programs in public sectors. | 3.90 (0.85) ^b | 3.72 (0.89) ^b |
| C23: Central government provides implementation models for all subordinate divisions. | 3.55 (1.05) ^b | 3.45 (1.00) ^b |
| C24: Hold workshops frequently for local authorities to exchange ISO implementation experiences. | 3.94 (0.75) ^b | 3.82 (0.84) ^b |
| C25: Governments provide regular ISO information. | 4.05 (0.65) ^b | 3.89 (0.74) ^b |

⁺ The null hypothesis is that the mean is three, and the alternative hypothesis is that the mean is greater than three.

⁺⁺ The higher of the values mean the lower of the resistance, the influence, or the decrease of the working wills.

^a: the significant level is 0.05 ^b: the significant level is 0.01

Using factor analysis, these items were then reorganized into five common factors: team leaders’ involvement and leading to top-down training (F1), policy and management support (F2), the level of ISO awareness (F3), the level of cooperation among divisions (F4), and the degree of resistance from employees (F5). Table 6 shows the items and the cumulative percentage of each factor.

Table 6: Items of factors affecting the ISO implementation process

| Factor Title | Items | Cum Pct (%) |
|--|---------|-------------|
| Team leaders' involvement and leading to top-down training | C5-C12 | 35.7 |
| Policy and management support | C21-25 | 46.3 |
| The level of ISO awareness | C1-C4 | 55.2 |
| The level of cooperation among divisions | C16-20 | 61.7 |
| The degree of resistance from employees | C13-C15 | 67.3 |

Furthermore, listed in a descending order, the most common obstacles to ISO 9000 implementation are lack of deep understanding of the ISO standards and resistance from employees. A number of respondents feel that certain difficulties in implementing quality stem from the lack of knowledge of the ISO systems. Over 42 per cent of the public sectors reported experiencing resistance within their organizations. Besides, lack of manpower, poor document control, and departmentalism also slow down the overall certification process.

5. Discussions and suggestions

The discussions with respect to the four areas identified in section 3 are as follows:

1. *Characteristics of public sectors awarded with ISO certificates* - "Service" accounts for the largest pool among the distinct sectors, and is followed by "Food and beverage" and "Chemistry." It is to be expected that most of these governmental organizations (around 90%) pursue ISO 9002 certificates. Specially, there are differences between small and large public sectors in their quality program choices: namely, large organizations are more likely to use ISO 9000 as a starting point for implementing TQM, whereas small organizations do not plan to advance to further quality programs after obtaining the ISO 9000 certificates. It is very similar to the results in industry[6].

Our research findings suggest that Taiwanese public sectors have been slow in adopting ISO series. However, the rate of take-up is expected to increase given the requirement under Government Reinvention to prove continuous improvement. Additionally, government agencies providing daily services to Taiwanese citizens such as household registration, land administration, vehicle supervisory, health care, etc., need to accelerate their efforts to promote their service quality and pursue ISO certificates.

2. *Motives/perceived benefits of implementing ISO 9000 standards* - The survey findings reflect that reasons motivated public services to adopt ISO standards are highly related to the main foci of Government Reinvention, such as enhancement of service quality in the public sector, improvement of administrative efficiency, and reformation of organizational structure. Unlike the cases in business, the benefits of "cost reduction," "reduce defect rate," and "increase sales" are not significant to public sectors. Surprisingly, even government offices in "Chemistry" and "Food & beverage" placed relatively low priorities on these items. Moreover, employees indicate fewer benefits of the ISO efforts compared to supervisors. Many respondents suspect that ISO implementation in their organizations has been mostly reduced to compliance with the Government Reinvention program instead of customer orientation. They express strong skepticism regarding the likelihood of the quality initiative succeeding. One plausible explanation for this finding is the top-down nature of the ISO efforts. The front-line employees perceive the organizational change initiated by ISO implementation efforts as something being forced on them by the upper management. On the contrary, top officials perceive ISO registration as the necessary ingredient for future success, and are generally heavily involved in the registration process. They may subconsciously justify their decisions by over-emphasizing the benefits of ISO standards.
3. *Critical factors in the implementing process* - The survey results show that team leaders' involvement and leading to top-down training, policy and management support, the level of ISO awareness, the level of cooperation among divisions, and the degree of resistance from employees are five critical factors affecting the ISO implementation in the public sector. Especially, there exist a fall between executives and employees about the resistance factor. Employees themselves think the implementation of ISO changes the present situation of their organizations, increases their burden, affects their original schedules, and even decreases their wills to work while executives underestimate the resistance from employees thoroughly. The success of the quality program is seen to be jeopardized because of that. The problem is more serious in large Taiwanese government offices, particular province-owned enterprises. One plausible explanation for this finding is those organizations

are currently facing an adversarial climate of labor-management relations because of privatization of their organizations, which hampers ISO implementation.

The experiences of Taiwanese governments with ISO implementation illustrate certain barriers faced by the public sector. Some barriers are general and common to other countries, such as organizational resistance to deep changes in their culture. Other barriers specifically belong to the environment and tradition of Taiwanese government, such as the little pressure of citizens and central governments on local elected officials to foster quality improvement. A set of suggestions for managerial decision-making, thought to be most likely to improve the implementation of ISO series in public sector, are addressed.

1. The little progress of Taiwanese public sectors in implementing ISO standards is due to organizational obstacles rather than to technical ones. The president of KHB stated that the main reason for ISO 9000 registration is for long-term strategic planning. However, many Taiwanese public offices seek certification just for the sake of it. For those offices, a culture where people ignore the limitations of the public sector and believe in the possibilities of delivering excellent service needs to be created first. Public sector service providers may have to question seriously the attitudes of the community they serve. Unless public organizations recognize and accept the centrality of the citizens' needs, any quality process become meaningless. Second, public servants should change their attitudes and view ISO as a means of adding value to the organizational processes and improving quality, performance, and productivity. Moreover, poorly managed government organizations should reengineer their basic organization processes. Otherwise, the adoption of ISO standards would only increase frustration in their organizations.
2. For a successful ISO 9000 implementation, management must determine the level of experience and competence, and needs of education and training. Many respondents of our survey feel that certain difficulties in implementing quality stem from the lack of knowledge of the ISO standards. Appropriate education and training needs to be further emphasized in the public sector to make the employees at each relevant function and level to be aware of the importance of conformance with the quality policy and procedures and with the requirements of the ISO 9000 EMS. Education and training are quite time-consuming, it is therefore advisable to start training as early as possible.
3. With regard to its quality aspects, the public organization must establish and maintain good procedures for internal communication among various levels and functions within the organization. The findings of the survey indicate a fall between executives and employees. Therefore, a dialogue with employees and consideration of their relevant concerns need to be improved in the public sector. In particular, a total employee approach and a management-labor steering committee are recommended.
4. Although the overall experience in the private sector is that, in the long run, quality programs such as ISO 9000 reduce the cost of failures and so enhance the overall financial performance, the problem in the public sector is that such savings are not as transparent. Quality programs are often viewed as a cost and not an investment in Taiwanese culture. The annual financing of Taiwanese public sector services produces a culture where it is tactful not to demonstrate savings but to emphasize lack of finances in the hope that more will be available next year. Hence, our research findings strongly suggest that most quality measurement initiatives in Taiwan have been undertaken at the central or regional level, where budgets are more sufficient, and have had little impact on local governments. Taiwanese local service providers have been slow to implement ISO series. One possible approach to resolving this is to provide minimum financial supports to local elected officials but more importantly, to show them that ISO provides a means for ensuring the increasing quality of the service at no extra public cost.

6. Conclusions

The transformation of public services is progressing, and continuous improvement in public sector is one of the highest priorities and greatest challenges in the quality movement in Taiwan. However, the citizens and public servants must believe in the genuine need for quality if it is to be of true benefit. The results of our survey carried out on ISO 9000-accredited public sectors reveal initiatives and key factors of implementing ISO programs in various governmental departments in Taiwan. The results of this study show that the registration of ISO 9000 is seen as a tool for creating the structures to integrate changed responsibilities and more importantly for the public sector to plan and allocate the resources to implement and deliver services so that they address community priorities.

The survey results raise further questions on the detail of the processes and the extent to which the public understand the management antecedents and, more importantly, raise questions about the longevity of the solutions produced. Although more local studies of quality management in public sector are now emerging, many do not refer to ISO 9000 in any detail, neither do they contain analysis by sector or organization size. The results of the preliminary research contained in this paper indicate that successful transfers of ISO 9000 from the private sector to the public sector have taken place, and the anecdotal evidence suggests that there are further possibilities to be researched. Further research is necessary to improve our understanding of ISO 9000 as it is applied to the public sector. Empirical studies are needed to validate the components of ISO success at the planning stage, the implementation stage, and perhaps more importantly, at the post-implementation stage as well.

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