

## **ISO 9000 IMPLEMENTATION AND PERCEIVED ORGANISATIONAL OUTCOME: THE CASE OF A SERVICE ORGANISATION**

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### **ABSTRACT**

*The study examines the relationship between the perceptions of the employees about ISO 9000 implementation and perceived organisational outcomes. A conceptual framework linking the level of employee influence and involvement, their perception of ISO 9000 and the perceived impact on their work and the organisational outcomes is posited. Data was collected from a random sample of 64 employees of a service organisation. Contrary to expectations, the work impact of ISO 9000 was not correlated with the efficiency and market outcomes of ISO 9000 certification but the employee involvement, influence and perception of ISO 9000 were. The conceptualization of the influence path of ISO 9000 implementation on the organisational outcomes may require rethinking as perception may have a direct effect on the outcomes without the mediation of the impact on work. In short, employees may report benefits or positive outcomes even though no change is reported in their work.*

### **INTRODUCTION**

The marketplace is becoming intensively competitive. Businesses are seeking to acquire every advantage possible in facing this uncertain milieu. A whole range of strategies and techniques are being deployed to remain abreast with, if not, ahead of the rest. A variety of quality approaches and models have been developed to enable businesses to focus on the value creation process to satisfy the customers. Within this spectrum of choices, ISO 9000 emerged in 1987 to assume a credible position as an international quality assurance model. Between 1987 and 2000, some 408,631 businesses were reportedly certified (Hazman, 2002) and the certification continues unabated (Elmuti & Kathawala, 1997). It is accepted as a truly international standard and hence, a global benchmark of organisational quality. It is also now a trade prerequisite to bidding for jobs or to entering certain markets like the European Union (Johnson, 1993; Karapetrovic, 1999).

Although the popularity or the rapid adoption of ISO 9000 suggests its value, many surveys have reported that firms embarked on certification simply because their rivals

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have it or on the belief that it will be useful or in some cases were required to do so (Mo & Chan, 1997; Quazi & Padibjo, 1997; Feng, 1998; Lipovatz, Stenos & Vaka, 1999; Tang & Kam, 1999; Acharya & Ray, 2000). But like all quality practices and prescriptions, the claims of benefits of ISO 9000 certification have far outpaced evidence. In fact, a review of studies of quality certification and business performance concluded that there was no proven link between the two (Dick, 2000). Additionally, these studies have relied on the key managers i.e. Quality Managers, Management Representatives and Chief Executive Officers for the assessment of the impact of ISO 9000. Consequently, questions have been raised about the perceptions of employees who both implement and experience the impact of ISO 9000 related changes. There has been little research to examine the employees' reaction to and perception of the many aspects of ISO 9000 implementation and also the impact of ISO 9000 on their work (Lee & Palmer, 1999). This observation is important for three reasons. First, the employees form a much broader set of respondents than do the managers. Secondly, the managers look for control while the employees are more interested in the facilitation of work. Thirdly, the employees' views of ISO 9000 implementation have a stronger bearing on the quality of service and customer satisfaction in the service sector (Schlesinger & Heskett, 1991). Since 1999, the ISO 9000 certification in the service sector is on the rise (ISO, 1999). In service businesses, where the process is relatively more important in determining service quality, the perceptions of the employees are of utmost importance (Schlesinger & Heskett, 1991). Additionally, the service sector is growing in importance in the Malaysian economy contributing to about 50% of the Gross Domestic Product and employment (Zeti, 1998). The K-economy Masterplan is poised to push the service economy into a relatively higher value added stage – the K-economy (ISIS, 2002). Therefore, it is the objective of this study to examine the relationship between the perceptions of the employees about their involvement, influence, the level of impact of ISO implementation on their work and the organisational outcomes of ISO 9000 certification in a service firm.

## **LITERATURE REVIEW**

The wide-ranging claims of the positive benefits of ISO 9000 have attracted some empirical scrutiny. Assessments of BS 5750, the forerunner to ISO 9000, were generally positive (Buttle, 1996). Weston (1995) surveyed 40 manufacturing companies in Colorado on the motivation of seeking certification to ISO 9000 and its financial, market and managerial impact. He reported that the perceived benefits were mainly internal and efficiency oriented. The impact of ISO 9000 was felt in terms of the clarification of roles and responsibilities and making certain the processes through the documentation requirements. Financial impact was hardly mentioned by the respondents. Buttle (1996) reported on a major survey of ISO 9000 in United Kingdom which offers evidence of wide ranging benefits of ISO 9000 certification

and this correlated with the willingness to recommend certification to others. However, he observed that operational or process improvement benefits appear to dominate the list of benefits as did also Lipovatz et al. (1999) in Greece. Seddon (1996) reviewed several studies (including Buttle's study) of the positive impact of ISO 9000 and concluded that they were merely opinions and had no objective basis for their conclusions. His own case study of 3 ISO 9000 certified firms highlighted, among others, the negative impact of ISO 9000 as well. He, in fact, alleged that several surveys of benefits of ISO 9000 were commissioned by parties with vested interests. Williams (1997) reported on the type of measures the small and medium sized enterprises (SME) in United Kingdom utilized in monitoring the impact of ISO 9000. The choice among different indicators of impact does not itself point toward positive impact of ISO 9000.

Mo and Chan (1997) in a survey of Australian SMEs found that most of the firms could not determine the cost of obtaining ISO 9000 certification, a key requirement in evaluating the benefits. Again the senior managers cited a range of productivity and organisational benefits. There was no direct observation or corroboration of these claims. Skrabec Jr., Rahu-Nathan, Rao, and Bhatt (1997) reported a University of Toledo survey of the anticipated and actual benefits of ISO 9000. They concluded that most of the realised benefits were mainly system benefits while market and productivity related benefits were subsidiary benefits. In contrast, Quazi and Padibjo's (1997) survey of Singaporean SMEs reported mainly market-based benefits i.e. competitive advantage, market share development and customer satisfaction. Leung, Chan and Lee (1999) survey of Hong Kong firms showed mixed benefits (in relation to cost) but the respondents were quality managers. The Taiwanese managers pointedly dismissed the notion that ISO 9000 could really boost the performance of their firms (Feng, 1998). The Indian managers anticipated many productivity-related benefits from ISO 9000 certification but only experienced the clarification of responsibilities, processes and functional integration. The study by Elmuti and Kathawala (1997) provides some support for both productivity related and quality of work outcomes. Lee and Palmer (1999) also found that manufacturing firms in New Zealand which were certified to ISO 9000 experienced significant performance improvements. Leung et al.'s (1999) survey of Hong Kong firms confirmed ISO 9000 benefits but did not show much relationship between variables like time taken for certification, time since certification and reasons for certification. Again quality managers were the primary respondents for their study. Tang and Kam's (1999) study of Hong Kong Engineering consultancies reported (quality managers were the respondents) some benefits though much less than expected.

The brief survey of empirical studies point toward the many expected but few realised benefits of ISO 9000 certification. These benefits have been largely internal efficiency oriented benefits. Senior managers as key respondents reported most of these benefits and no direct observation of the impact was attempted. The key

respondents as decision owners are likely to report and/or exaggerate the benefits of ISO 9000 certification. Given this bias, a broad-based assessment is always a more reliable basis of benefits determination. Elmuti and Kathawala's (1997) study involved the employees and it was their views on productivity that were reported. In establishing the value of ISO 9000 certification two approaches have been followed. One group of studies examines the impact of ISO 9000 on the market and financial indices. In most cases, the claims of improved customer satisfaction, new clients, improved efficiency and increased productivity are not based on verifiable data but based on self-reports. Yet another, but much smaller, group of studies seek to establish the employee and management reactions to ISO 9000. These studies examine the reactions of the employees and management to ISO 9000. The results are mixed. One notable feature of these studies is that most, if not all, studies have focused on the manufacturing sector. The service sector, where the employee reactions to ISO 9000 can immediately translate into quality impact, has been underresearched. Additionally, looking for expected market based outcomes between 6 months to 3 years of ISO 9000 certification is presumptuous (Brecka, 1994). Market gains are likely to be moderated by a whole range of factors namely, customer awareness of and value attached to ISO 9000, competitors' reactions, prior quality image of firm, the growth prospects of the market and the balance between structure (read control) and flexibility in developing and documenting the quality system. Consequently, looking for market gains may not be a good yardstick to assess ISO 9000. It is therefore no surprise that most studies indicate a preponderance of internal efficiency benefits.

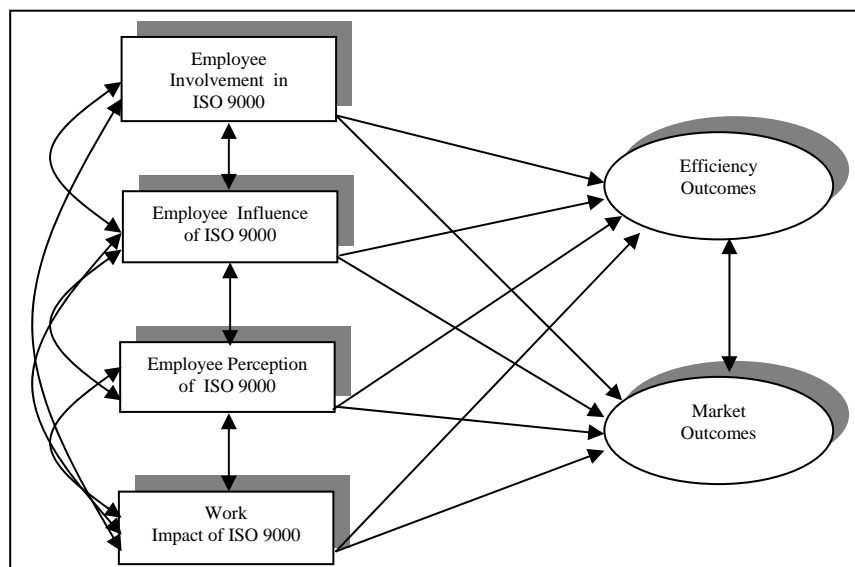
### **ISO 9000 IN MALAYSIA**

The standard was introduced in 1987 but has only recently begun to attract interest. By 2001, there were 2,544 firms certified by SIRIM QAS Sdn. Bhd. (SIRIM, 2002). The actual number of firms certified is probably more, as foreign registrars are also active in the ISO 9000 certification market. By far, the manufacturing sector has the lion's share of the certified firms but the service firms are slowly catching up as the suitability of ISO 9000 for this sector becomes apparent. The SMEs are still not actively seeking the certification despite incentives. The official adoption of ISO 9000 as the quality assurance model for the public sector propelled the standard into national limelight. Studies of the impact of ISO 9000 have been commissioned by SIRIM, an ISO 9000 registrar and therefore, are potentially biased. These studies have surveyed the management representatives or quality managers who are unlikely to provide unbiased report of the outcome. Despite the paucity of data on its effect, the certification has progressed steadily, raising concerns about its utility. Being an export oriented economy, the need to seek ISO 9000 certification is slowly becoming apparent. Exporting firms must, in many cases, obtain the certification to stay in the business. But the initial excitement and euphoria has somewhat subsided. It is,

however, not clear whether it is the naturally diminishing novelty effect or the lack of value in ISO 9000 certification.

## **THE CONCEPTUAL FRAMEWORK**

It is a basic proposition of this study that the efficiency or market benefits accrue through the collective and synergistic impact of multifaceted requirements of ISO 9000 on the work of the employees (refer figure 1). Accordingly, the study is based on the premise that employees are more representative respondents of the extent of benefits brought about by ISO 9000 implementation than a single manager who is often the decision owner. The study examines the perceptions of the employees about their role in the ISO 9000 implementation and the perceived organisational outcomes of the certification. Specifically, the organisational outcome of ISO 9000 certification is postulated as influenced by employee perception, influence, involvement in ISO 9000 implementation and work impact of ISO 9000 implementation.



*Note:* All relationships are positive.

Figure 1. The conceptual framework

The level of involvement in ISO 9000 implementation is defined as the extent of participation of the employees in units, teams or groups responsible for some aspects of ISO 9000 implementation. The higher the level of involvement of the employees in the implementation of ISO 9000, the greater the sense of ownership of the project (Cheng & Tummala, 1998). Similarly, the more influence the employees exercise, that is the extent to which the employees are able to affect decisions pertaining to ISO

9000 implementation, the more ownership they are likely to display and therefore, ameliorate the ill-effects of ISO 9000 or become less inclined to admit to any negative outcomes.

The employee perception of ISO 9000 is an overall cognitive assessment of the utility or value of ISO 9000 certification to firms. The cognitive predisposition of individuals toward new systems and technologies have a strong bearing on their readiness to adopt and consequently, on the success of new systems. In technology diffusion studies, this cognitive predisposition has been identified in many different ways. For example, Au and Enderwick (2000) labelled it as "adoption experiences", Parasuraman (2000) called it "technology readiness" while Hazman (2000b) referred to it as "satisfaction with technology". Employees, through direct and vicarious experiences, form opinions of new systems including ISO 9000. This strongly influences the absorptive capacity of an organisation with respect to new systems and technology (Cohen & Levinthal, 1990; Naik & Chakravarty, 1992; Lefebvre, Lefebvre & Roy, 1995). The more positive the perception of ISO 9000 by the employees, the more ready they will be to implement the new system.

The work impact of ISO 9000 implementation is the extent to which the work methods and processes have been changed by ISO 9000 certification. The immediate work related impact of the certification is expected to be a strong influence on their perception of organisational outcome of the certification. Seddon (1996) for instance, raised the issue of organisational and employee or work group level impact. He identified examples of negative work related impacts while managers proclaimed positive organisational outcomes. Hence, employee assessment of the work related impact provides a micro measure of ISO 9000 implementation. The impact on the work of the employee is expected to colour the perceptions of the employees about outcomes of ISO 9000 certification.

Two categories of outcomes can be identified from the literature report on the benefits of ISO 9000. These outcomes are market and efficiency outcomes (Buttle, 1996; Lipovatz et al., 1999). Market outcomes refer to better customer satisfaction, new clients, increased sales, improvement in market share, et cetera (Buttle, 1996). The market outcomes are caused by the combined effect of many variables and are unlikely to change in the short term. Isolating the effect of ISO 9000 on market outcomes is a precarious exercise but that has not stopped many from attempting it. Efficiency outcomes are internal benefits which reduce costs and increase output through role clarification, improve integration, reduce ambiguities, improve coordination and control, lessen conflicts and simplify procedure (Buttle, 1996; Dick, 2000). The efficiency outcomes are caused by and are under the control of, the management and employees. Therefore, these outcomes are more likely to be achieved in the short term through the ISO 9000 certification process. The market and efficiency outcomes, though related, are still distinct outcomes and therefore, should

be examined as separate outcome sets. This categorisation will bring some order in the discussion of the possible beneficial outcomes of ISO 9000. Additionally, businesses too are looking at the benefits in these terms (Buttle, 1996).

Much of the earlier evaluations of ISO 9000 have focussed on the manufacturing sector. This is no surprise because the standard was developed with job manufacturing as its model. The manufacturing of products is, however, significantly different from the production of services. Services are less amenable to precise measurement and control. The role of the employees in the final quality of the service or encounter is generally important to customer satisfaction. Hence, the impact of ISO 9000 on the work of the service provider will rub off on the client with varying reactions (Lovelock and Wright, 1999; Gronroos, 1993). The role of employee perceptions of the outcomes of ISO 9000 is highly evident in the service sector. Concomitantly, it is the employee's perception that is used as the basis of the evaluation of ISO 9000 implementation.

### **Hypotheses**

From the review of the literature several hypotheses can be stated for empirical testing. These hypotheses are:

- H<sub>1</sub>: Employee involvement correlates positively with perceived efficiency and market outcomes of ISO 9000 implementation.
- H<sub>2</sub>: Employee influence correlates positively with perceived efficiency and market outcomes of ISO 9000 implementation.
- H<sub>3</sub>: Employee perception of ISO 9000 correlates positively with perceived efficiency and market outcomes of ISO 9000 implementation.
- H<sub>4</sub>: Work impact of ISO 9000 correlates positively with perceived efficiency and market outcomes of ISO 9000 implementation.
- H<sub>5</sub>: The level of involvement of the employee correlates positively with employee influence, employee perception of ISO 9000 and with work impact of ISO 9000 implementation.
- H<sub>7</sub>: The level of influence of employee correlates positively with employee involvement, employee perception of ISO 9000 and with work impact of ISO 9000 implementation.
- H<sub>8</sub>: Efficiency and market outcomes are positively correlated.

## **METHODOLOGY**

The research design adopted for the study is correlational in nature. The unit of analysis is the employee. In order to avoid the confounding influence of structure, market, culture, history, leadership and industry the study was limited to employees of one firm (Delery & Doty, 1996; Chebat & Kollias, 2000).

Multiple items using Likert scales were developed based on the conceptual definition advanced in this study to measure the dependent and independent variables. These items were pre-tested and some of the non-performing items were dropped from further use. The questionnaire was piloted on 20 employees who were excluded from the final study. The Cronbach Alpha for three of the five variables were slightly lower than minimum threshold of 0.70 recommended by Nunnally (1978). Being new instruments the level of reliability achieved was understandably low but nevertheless satisfactory.

A stratified random sample of 100 employees (of 347 employees) from the Chief Executive Officer to the lowest level operative was included in the sample. A structured questionnaire was provided to all the employees and collected after two weeks. Of the 100 questionnaires distributed, only 64 were returned and all of them were usable. The response rate of 64 percent is a reasonable one. The hypothesized relationships were analysed through the use of correlation and multiple regression.

### **The Firm**

The firm was established in 1986. Since then it has grown to become a key player in the local information technology (IT) industry which is now seen as the critical sector in the emerging knowledge-based economy. The firm trades in computer hardware and related IT services. Its total revenue for 1999 was RM145.7 million which represents a 44 percent increase in revenue from 1994. It has 347 staff and 69 percent of them are in the executive rank. The majority of the employees are Malays (60 percent). Chinese make up about 33 percent while the Indians and the others the balance. The firm started the ISO 9000 certification in 1996 and by 1999 completed the certification of all divisions in the firm.

## **FINDINGS**

The sample was fairly reflective of the population of employees of the firm except that almost all the respondents were exempt status employees. Therefore, the sentiments expressed here are of those in the executive level. Functionally, the sample was distributed across the different units in the organization although two of these were underrepresented (see Table 1). In terms of the extent of experience in ISO



9000, it is fairly clear that most employees had less than 1.5 years of experience with the variability being high (standard deviation = 1.3 years). This relative inexperience among the staff with respect to ISO 9000 may induce them follow the norm than to adapt ISO 9000 to their work and organisation (Westphal, Gulati & Shortell, 1999).

TABLE 1  
PROFILE OF RESPONDENTS

Profile	No.	Percent
<b>Gender</b>		
Female	28	44
Male	36	56
<b>Race</b>		
Malays	44	69
Chinese	20	31
<b>Position of respondents</b>		
Exempt	58	91
Non-exempt	6	9
<b>Department</b>		
Solutions Integration & Services Division	16	25
Technical Services Division	2	3.1
Network Solutions Unit	10	15.6
Sales Support, Distribution, Purchasing & Marketing Units	37.5	24
Finance & Administration Unit	8	12.5
	<b>Mean</b>	<b>Std Dev.</b>
Years of experience with the company	4.75	4.2
Total years of working experience	7	4.5
Years of experience with ISO 9000 within the firm	1.3	1.0
Years of total experience with ISO 9000	1.7	1.3

### **Testing of Hypotheses**

As posited, the efficiency and market outcomes were moderately correlated ( $r = 0.441$ ,  $p < 0.001$ ). Improvements in the process and cost reductions should, in the final analysis, affect business advantage through improved customer satisfaction. As posited employee perception of ISO 9000 was significantly correlated with efficiency and market outcomes thus supporting the hypothesis of the nexus between the outcomes. Both efficiency and market outcomes correlate positively with employee perception of ISO 9000. These two variables can be said to be mutually reinforcing. A positive perception of the idea and the method of ISO 9000 will surely predispose the respondents to favorably assess the efficiency and market impact. The involvement of the employees in the ISO 9000 implementation also has a positive effect on efficiency outcomes.

TABLE 2  
CORRELATION OF THE VARIABLES

	1	2	3	4	5	6
1. Efficiency outcomes	(0.70)	(0.63)				
2. Market outcomes	0.441**	0.070		(0.64)	(0.75)	
3. Work impact of ISO 9000	-0.212	0.254*	(0.62)	0.299*	0.833**	
4. Employee perception of ISO 9000	0.356**	0.214	-0.098			(0.66)
5. Employee involvement ISO 9000	0.341**	0.053	-0.232	0.107		
6. Employee influence in ISO 9000	0.105		-0.060			

Values in the diagonal are Cronbach Alpha. \* P < 0.05, \*\* P < 0.001

The level of employee involvement was significantly correlated with efficiency but not with market outcomes. In fact, the correlation was low, negative and not significant (-0.232). The work impact of ISO 9000 was not correlated significantly with all other variables. This surprising lack of significant relationship with the other variables is perplexing considering that the impact on work is an important factor in evaluating the effect of ISO 9000. The employee perception of ISO 9000 was also significantly and positively correlated with level of employee involvement in ISO 9000 implementation. This finding bolsters the long held belief that employee involvement engenders ownership and reduces the tendency towards negative feelings. The high degree of correlation between employee influence and employee involvement points to the high degree of symbiotic dependency between these variables (Hazman, 1996).

A primary question of this study is the collective and individual influence of the variables on the type of outcomes realized. This study examined the extent of the variance in the criterion variable explained by the predictors. The model explained about 20 percent of the variance in the criterion variable, efficiency outcomes. Given the multivariate causation of the efficiency outcomes, this is a respectable effect size (Cohen, 1992). Employee involvement in ISO 9000 implementation emerged as the most important predictor followed by employee influence and employee satisfaction with ISO 9000. However, the relationship between employee influence and efficiency outcomes was negative. The inverse relationship is overtly counter-intuitive. It is plausible that high level of employee influence may cause ISO implementation to provide greater weight to employee's interests in simplifying the work processes and not necessarily seeking cost reductions. Hence, the present findings.

TABLE 3  
RELATIVE EFFECT OF EMPLOYEE PERCEPTIONS ON ISO 9000 OUTCOMES

	Criterion variable	
	Efficiency benefits	Market benefits
<b>Predictors</b>		
Work Impact of ISO 9000 implementation	-0.076	0.185
Employee Satisfaction with ISO 9000	0.213*	0.155
Employee Involvement ISO 9000 implementation	0.607***	0.534**
Employee Influence ISO 9000 implementatio	-0.422**	-0.392*
<b>Model Assessment</b>		
R <sup>2</sup>	0.254	0.146
Adj.R <sup>2</sup>	0.204	0.088
Sig. of Model ( <i>F</i> )	0.001	0.050

\* p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01

As for market outcomes, the model explained barely 1 percent of the variance. Within this weak model, employee involvement and employee influence were significant predictors. The poor explanatory power of the model can be attributed to the complex causation of customer satisfaction and market advantage which goes beyond the processes within the organization. The competitive environmental factors play a major role in the determination and changes in the market outcomes. The ISO 9000 initiated outcomes can be diluted by the negating changes elsewhere. Therefore, the path from ISO implementation to market outcomes is a meandering one with many competing influences.

## CONCLUSION

This study examined the relationship between type of outcomes of ISO 9000 certification, namely efficiency and market outcomes *vis-a-vis* employee perceptions, influence and involvement in the process of ISO 9000 implementation within a service organization. The lack of correlation between perceived work impact of ISO 9000 implementation and most other employee variables is worrisome. It is believed implicitly within the rationalist perspective that the outcomes are a function of the impact on the work. It is plausible that the employees' perception of involvement, influence and satisfaction itself is impact enough to determine their perception of outcomes of ISO 9000 certification. The impact of work may not be a necessary antecedent to the perception of the outcomes. Employee involvement, perception of ISO 9000 and influence are powerful stimuli in evoking perceptions of the outcome. And in service businesses where the human resource element is critical to quality and productivity, perceptions can strongly colour the expected outcomes. This expectancy can, in turn, catalyze the perception of appropriate or expected outcomes. In service

businesses where the service encounters are interactively determined by the service provider and the service recipient, such perceptions among the employees are powerful pre-disposers of behaviour and therefore, can condition employee behaviour. Obtaining enthusiastic commitment from the employees about ISO 9000 is a critical success factor (Cheng & Tummala, 1998).

The negative relationship between employee influence and the two types of outcome is certainly counter-intuitive. Possibly, the more influence one has over the course of ISO 9000 implementation, the more likely it is that the changes are less extensive or obtusive. Consequently, the impact of ISO 9000 is admittedly far less extensive than would otherwise be the case. This relationship may also be a function of the experience level of the employees. Given that the employees are not highly experienced, their influence in ISO 9000 implementation may not be truly productive to generate significant benefits. Where the employees are inexperienced, their involvement may be more important to realising the benefits of ISO 9000.

More importantly, this study explored the dynamics of the achievement of the benefits. For most part, the literature has pointed to the benefits without outlining the process by which these benefits are derived. The durability and sustainability of the benefits lie often in the process of seeking certification (Cheng & Tummala, 1998). The product of the process (certification) is of lesser importance. This study showed that employee involvement in ISO 9000 implementation has a significant influence on the outcomes consistent with Cheng and Tummala (1998). It is therefore, imperative that the correlates of the outcomes are identified and managed. Hopeful statements of benefits are acts of salesmanship without proper conceptualization. It is evident that in services, the perceptions and roles of the employees in the implementation of ISO 9000 play a major role in the perceived outcomes (Gummesson, 1991). Hence, the need to manage the perception of the employees through and during the ISO 9000 implementation. Greater allowance for and satisfactory experiences in the charting and implementation of ISO 9000 will pay handsome dividends. Not only will employee involvement stimulate ownership and commitment, it will also ensure that the quality system is practical and effective. As has been observed by Hazman (2000a), broader involvement of staff can help negate the tendency for the managers and consultants to design elegant systems and to reduce time to certification. The quality system so designed may not fully fit with the practical realities of the work processes with which the employees are more knowledgeable.

The employees must fully recognise and accept the level of structuring that accompanies ISO 9000. The purpose and flexibility of each process must be preserved to ensure that the employees see the value rather than the bureaucracy that seemingly emerges. In short, the employees' perceptions must be managed towards positive effect. This challenge becomes even more critical if ISO 9000 has already a bad reputation. ISO 9000 implementers must be constantly mindful of the pre-existing

perceptions among employees and work to dilute these beliefs by introducing credible evidence of success. In most cases seeking ISO 9000 certification is a top management decision. Thus, ownership of the decision and the certification may not rest with the employees. This engenders unenthusiastic involvement and lack of identification with the initiative. This attitude is likely to limit the benefits of ISO 9000 certification.

An underlying question of this study is the value of ISO 9000. The existing body of studies tends to be casual about benefits identification. More searching questions must be asked and answered. Westphal, et al.'s (1999) observation about coercive, normative and mimetic isomorphism in the context of TQM is pertinent to ISO 9000 adoption as well. The registrars often tend to be less appreciative of the multivariate business forms. This attitude unwittingly influences firms to adopt the same route or model (mimetic isomorphism) as others thus reducing the potential for positive impact, both in perception and result (Hazman, 2000b). This phenomenon is more apparent in the business to customer sector because customers are either ignorant of the standard or mistakenly associate ISO 9000 with product quality standard. Given this ignorance, market pressure could not possibly be a strong reason for certification. But the situation is different in the business-to-business sector where suppliers are routinely examined and evaluated to reduce risk of faulty products or materials. The attraction of the standard is strong especially when it does not take long to achieve it nor is the cost prohibitive. The SMEs in Malaysia can obtain reimbursement of the ISO 9000 certification cost from the Human Resource Development Fund (HRDF) and from Small and Medium Industries Development Corporation (SMIDEC). The HRDF allows for approved ISO 9000 training programmes to be reimbursed by the fund. Up to 50 percent of the certification cost can be claimed from the SMIDEC fund for quality and productivity improvements. This encourages less than critical analysis of the value of ISO 9000.

Despite the many contributions of this modest study, there remain some caveats. The low correlation and the moderate to small effect sizes attained in this study may be method and measure related. Some reliability coefficients were less than 0.70, the minimum threshold suggested by Nunnally (1978). Improvements in the reliability of the instruments will certainly enhance the explanatory power of the model. The sample size prevents the use of better model testing techniques and may also limit the statistical power of the study to detect associations. Finally, the study was based on a moderately sized information technology based service firm. To the extent that this firm and industry is not typical of others, there is some risk of generalisation. Nonetheless, the significance of the study remains.

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