

**QUALITY CULTURE AND ITS
IMPACT ON QUALITY
PERFORMANCE**

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Abstract

In the past, research has focussed on how a range of quality tools or techniques affects product quality. This overwhelming interest in the manufacturing sector has resulted in a serious lack of research on those 'softer' quality factors that are essential for service organisations to meet or exceed their performance targets. The findings of this research indicate that those quality culture factors often overlooked (top management leadership, teamwork, employee empowerment, commitment to customers) have a significant influence on common quality performance outcomes (financial and service performance, employee and customer satisfaction). Employers should be aware of these relationships to create and maintain an effective quality focussed corporate culture.

QUALITY CULTURE AND ITS IMPACT ON QUALITY PERFORMANCE

INTRODUCTION

Quality is unquestionably one of the hottest topics in the media today, frequently addressed in books, journals and training seminars. Reeves and Bednar (1994:419) for example claim that quality "is perhaps the most frequently repeated mantra among managers and executives in contemporary organisations". However the quality movement has had a troubled past. Seeking the magic elixir or 'quick fix', many organisations in the early part of this decade appears to have hastily implemented pre-packaged quality programs without fully appreciating what they were doing. In fact a large scale neglect of the "soft stuff" (Redman & Grieves, 1999:47), or the social, psychological and emotional needs of employees is now seen as the predominant reason for the failure of many early quality programs. As a result, it has been suggested that those organisations attempting to implement or manage quality programs need to pay more attention to the development of the appropriate "quality culture" (Dellana & Hauser, 1999).

This argument is based on the general premise that if the culture of the organisation does not support and reinforce a quality philosophy, the entire quality effort will be significantly undermined. Indeed, research indicates that without the supporting value system, most quality programs "run out of steam" 18-24 months after being first launched (Smith *et al*, 1993). The study has two main objectives. They are to:

- identify which quality culture factors (top management leadership, teamwork, employee empowerment and commitment to customers) have the greatest impact on quality performance outcomes (financial performance, service performance, employee satisfaction and customer satisfaction) in the Business Management service industry in Australia and New Zealand; and
- analyse the extent to which organizations in the Business Management Service industry recognize the importance of establishing and maintaining a 'quality culture'.

HYPOTHESIS DEVELOPMENT

An overview of the literature has identified four critical quality culture factors and four common performance outcomes. This suggests that there are a total of sixteen testable relationships between the four independent and four dependent constructs. A representative selection of five hypotheses was examined for this study.

General Hypothesis

A basic assumption underlying this research is that the implementation of a quality program and the generation of a 'quality culture' will lead to both material (financial and service performance) and immaterial (customer and employee satisfaction) benefits. Thus, the general hypothesis can be stated as: "There is a significant positive relationship between quality culture factors and quality performance outcomes".

Hypothesis One

Of all the quality culture factors, top management leadership is most often cited as having the greatest effect upon results. According to Ahire and O'Shaughnessy (1998:9), it is generally accepted that "top management commitment is one of the major determinants of successful quality implementation". Hence:

H1: There is a significant positive relationship between top management leadership and financial performance.

Hypothesis Two

Frequent references to the need for teams and team working are also made throughout the quality literature. There is little doubt that collaboration between managers and non-managers and across functions is a critical requirement for organisations attempting to provide quality services. The achievement of common objectives is simply not possible where "subunits emphasize their own outcomes over those of others" (Dean & Bowen, 1994:395). Thus:

H2: There is a significant positive relationship between teamwork and overall service performance.

Hypothesis Three

Much of service quality literature indicates that there is a direct relationship between employee empowerment and employee satisfaction. For example, in their article titled "Putting The Service Profit Chain To Work", Heskett *et al* (1994:165) suggest "employee satisfaction results primarily from high quality support services and policies that enable employees to deliver results to customers". Accordingly, the following hypothesis is predicted:

H3: The empowerment of employees has a significant positive relationship with employee satisfaction levels.

Hypothesis Four

A fundamental objective for quality organisations is to continuously increase customer satisfaction levels. The reason for this strong emphasis on customer satisfaction is due to the "ample evidence that market share and profitability will raise for companies that achieve high customer satisfaction ratings" (Massnick, 1996:95). Perhaps the only means of ensuring that customers are continually satisfied is to create a work environment where employees become wholeheartedly committed to the customer. Thus:

H4: A genuine commitment to customers has a significant positive relationship with overall customer satisfaction levels.

METHODOLOGY

The targeted population for this study included both privately-owned and government owned organisations listed under the title "Business Management Services" in the JAS-ANZ Register of Accredited and Certified Organisations (November, 1998). Single organisations formed the unit of analysis while individuals responsible for implementing and monitoring organisational quality programs, typically the 'quality manager', were considered to be the ideal respondents. Of the 365 organisations mailed questionnaires, 139 usable questionnaires were returned resulting in a response rate of 38.08 per cent.

Independent variables

The questions measuring the independent variables (quality culture practices) were adopted from Stoner-Zemel's (1989) "PAVE : Indicators Of Excellent Organisations" survey. Using the PAVE instrument, a total of fifteen items were selected and used to measure "quality culture". Four items were used to measure each of the first three constructs (top management leadership, teamwork, and empowerment) and three items were selected to measure the construct 'commitment to the customer'¹. Preliminary factor analysis indicated that the independent variables loaded on three separate factors, namely 'top management leadership', 'commitment to customers' and 'teamwork' (Table I).

¹ Only three items measuring 'commitment to the customer' were considered to be relevant in this study.

Table I: Factor analysis results: independent variables

Variables	Factor Loading
FACTOR 1 (Top Management Leadership)	
A common mission/purpose is frequently communicated to employees by top management [I.V.4].	.793
Goals and priorities are related by top management to the business mission [I.V.11].	.787
The work environment support continual learning [I.V.14].	.691
Employees are committed to a common mission or purpose [I.V.7].	.637
There is a feeling of cohesiveness or community in our organisation [I.V.1].	.637
Our organisation has low levels of morale [I.V.3].	-.508
Employees have the freedom to use their own judgement [I.V.8].	.473
FACTOR 2 (Commitment To Customers)	
Employees are determined to meet whatever challenges may arise [I.V.5].	.790
Employees put in a great deal of extra effort to meet customer demands [I.V.10].	.765
Employees take pride and satisfaction in their work [I.V. 9].	.696
Employees are excited about the work they do [I.V. 6].	.691
There is a feeling that employees can overcome almost any obstacle [I.V.13].	.491
Employees are committed to satisfying customers and helping the organisation meet its goals [I.V.2].	.474
FACTOR 3 (Teamwork)	
Employees coordinate their effort when necessary [I.V.12].	.806
Employees can be confused about what is expected of them in their job [I.V.15].	-.691
TOTAL VARIANCE EXPLAINED	
Factor 1 (Top Management Leadership)	42.01%
Factor 2 (Commitment To Customers)	51.43%
Factor 3 (Teamwork)	57.79%
KMO	0.90
RELIABILITY (Cronbach Alpha Coefficient)	$\alpha = 0.75$

Using SPSS 9.0 for Windows, an initial Cronbach alpha coefficient was generated for all independent variables. With an alpha coefficient of 0.75, section two of the questionnaire (quality culture factors) was deemed to have an adequate level of internal consistency, or reliability.

Dependent Variables

Those items used to measure "quality outcomes" have been used as key quality objectives in a variety of past studies that have attempted to link quality practices with quality outcomes (Powell, 1995). Once again, because reliability can be increased through the use of "two or more indicators of the same construct" (Neuman, 1997:140), three indicators of each of these four variables were selected from the literature and used in the current study. Initial factor analysis of the dependent variables suggested that two of the variables, 'market share' and 'employee turnover', should be removed from the model. The decision to remove these variables was based on each "variables overall contribution to the research as well as its communality index" (Hair *et al*, 1998:114). Having removed these two variables, the factor analysis was re-run. The remaining ten dependent variables were classified into one factor (Table II), which was subsequently named 'quality performance outcomes'.

Table II: Factor analysis results: dependent variables

Variables	Factor Loading
FACTOR 1 (Quality Performance Outcomes)	
Customer Requirements / Expectations [D.V.12]	.774
Reliability Of Product / Service [D.V. 1]	.771
Level Of Commitment To The Customer [D.V. 9]	.753
Customer Feedback On Service / Product Performance [D.V. 4]	.729
Employee Recognition And Performance Measurement [D.V. 7]	.681
Timeliness (Delivery In Full On Time To Customers) [D.V. 8]	.676
Return On Investment (ROI) [D.V. 2]	.602
Employee Education And Training Levels [D.V. 5]	.579
Cost Reduction [D.V.3]	.491
Profit [D.V. 6]	.469
TOTAL VARIANCE EXPLAINED	
Factor 1 (Quality Performance Outcomes)	43.70%
KMO	.84
RELIABILITY (Cronbach Alpha Coefficient)	$\alpha = 0.85$

Tests for reliability were also completed on all dependent variables. However due to their 'lack of fit' into the rest of the model, the dependent variables 'market share' and 'employee turnover' were removed from the analysis. Without these two variables a final Cronbach alpha coefficient of 0.85 was obtained indicating that those items included as dependent variables possessed a satisfactory level of reliability. Both independent and dependent variables were measured along ordinal, five item Likert scales.

Data Analysis

Multiple regression was used to test the general hypothesis and a series of simple regression analyses were conducted to test each of the specific hypotheses. A simplified set of regression results are presented below (Table III). In all cases, data was tested for evidence of multicollinearity through simple correlation matrices. No departures from normality, homoscedasticity or linearity were observed and no outliers were identified.

Table III: Regression results

	R Square	Sum of Squares	DF	Mean Square	F	Sig.
General Hypothesis	.521	71.83	3	23.94	48.85	0.000
H 1	.107	14.712	1	14.712	16.348	0.000
H1 (additional)	.163	22.529	4	5.632	6.492	0.000
H 2	.306	42.203	1	42.203	60.354	0.000
H 3	.283	38.985	1	38.985	53.941	0.000
H 4	.402	55.476	1	55.476	92.097	0.000

RESULTS AND DISCUSSION

General Hypothesis

According to Dow *et al* (1999:2) "the relationship between quality practices and superior quality outcomes is a fundamental and defining element of the whole concept of quality management". Thus, the aim of the

general hypothesis was to determine, in a broad sense, whether quality culture factors are significantly and positively related to both soft (employee and customer satisfaction) and hard (financial and service performance) organisational objectives. Analysis of the multiple regression results (Table III) indicated that not only was the model highly significant ($F = 48.85, p = .000$) but 52.1% of the variability in quality performance could be accounted for by quality culture factors. These results confirmed the general hypothesis. Such a result is similar to the findings of Dow *et al* (1999:18) who demonstrated that "a handful of the soft quality management practices can claim a positive relationship with quality outcomes".

Hypothesis One

The aim of hypothesis one was to investigate whether top management leadership has a positive effect on financial performance. Examination of the quantitative results (Table III) confirmed hypothesis one (Beta = .327, $t = 4.043, p = .000$). Such a finding is consistent with a number of past studies that have also found a positive relationship between executive commitment and financial performance (Powell, 1995). The results also add support to the general view that top management leadership is critically important to the success of the quality effort (Ahire & O'Shaughnessy, 1998). However, while it was interesting to note that the hypothesis could be supported, the researcher was initially surprised at how little of the variation (10.7%) in profit and return on investment (ROI) was explained by the variable 'top management leadership'. In order to further investigate the seemingly low 'R Square' result, an additional multiple regression was completed. The output however, indicated that even with four different variables, only 16.3 % of the variation in financial performance could be explained (Table III). Although not particularly revealing, such a figure compares favourably with similar tests completed by other authors. For example, in a comprehensive study, Adam *et al*, (1997) found that top management commitment and fifty-one additional 'quality improvement factors' could only explain 7.8 % of the variation in financial performance. However when viewed overall, these two results suggest that a diverse range of factors (many of which were obviously not measured in this study) influence financial performance. Additional comments suggest that it is very difficult to quantify the value of top management leadership. Perhaps the underlying message is that rather than top management focusing specifically on financial performance (the 'end'), attention should be directed towards how best to design a structure and establish a culture that will maximise the effective participation of all employees (the 'means to the end'). If top management fulfils this 'facilitative' role properly then the organisation should be rewarded with superior financial performance.

Hypothesis Two

Hypothesis two considered the relationship between teamwork and service performance. Preliminary analysis showed that all four measures of the construct 'teamwork' were significantly ($t = 7.769, p = .000$) and positively ($B = .553$) related to each of the three variables measuring 'service performance' (reliability, timeliness and cost reduction). In addition, the regression output (Table III) showed that the presence of teams in the work environment accounted for 30.6% of the variance in overall service performance (R Square = .306). These findings supported hypothesis two and coincide with other studies that have shown teamwork can have a positive impact on quality and customer service (Spreitzer *et al*, 1999). There appears to be little doubt that properly managed teams can take direct responsibility for handling customer complaints and diagnosing their own quality problems. This increased level of responsibility and accountability reinforces employee perceptions of autonomy and encourages a higher level of overall service quality.

Hypothesis Three

This hypothesis stated that empowering employees would have a positive effect on employee satisfaction levels. Initial correlation analysis and the subsequent regression output ($F = 53.941, p = .000$) indicated that hypothesis three could be confirmed. The statistical data (Table III) indicated that up to 28.3% of the variation in employee satisfaction levels could be accounted for by employee empowerment. However contrary to what one may initially expect, employee empowerment is not always well received. This type of employee concern has also been identified by Lam (1995) who conducted a detailed investigation of worker perceptions towards quality. The central finding of the study was that employees felt that quality made work more demanding and "gave them less freedom in how to do their job but greater responsibility for the results

of their work" (Lam, 1995:76). Overall this suggests that while management may 'empower' employees, the end result may not necessarily enhance employee satisfaction.

Hypothesis Four

Hypothesis four stated that a genuine commitment to customers has a significant positive relationship with overall customer satisfaction levels. The results for this fourth hypothesis were by far the most conclusive of all the study findings. With an extremely significant model ($F = 92.097$, $p = .000$) the output indicated that 40.2% of the variation in customer satisfaction levels could be explained by a genuine commitment to customers. The high t value (9.597) suggested that the variable 'commitment to customers' was significantly ($p = .000$) related to 'customer satisfaction'. In addition, the direction of the relationship was clearly positive ($B = .634$). Hypothesis four was therefore confirmed.

Almost sixty percent of the study participants indicated that establishing a work environment that encourages employee commitment to the customer is the 'most important quality culture factor in the Business Management Service industry'.

CONCLUSION

The following conclusions have been drawn from the findings of this study:

- Organisations that establish and maintain a 'quality culture' are more likely to enjoy higher levels of overall performance (in the long term).
- The commitment of the top management leadership team is positively and significantly related to financial performance.
- Team based organisations provide significantly better levels of service than organisations that have adopted a different structural form.
- Empowered employees are more satisfied than employees who are not empowered.
- Organisations that encourage and communicate their commitment to customers will record higher levels of customer satisfaction than those that do not. This suggests that organisations wishing to remain competitive should foster a work environment that is highly customer focussed.

Implications for Managers

This research has raised two specific implications for managers currently operating in the Business Management Service industry in Australia or New Zealand. First, by supporting the general proposition that quality culture factors are positively related to quality performance outcomes, the results indicate that it is absolutely imperative for managers to establish and maintain a 'quality culture' at their organisation. This is a long, slow process but one that is necessary to ensure that the organisation remains competitive. Secondly, the need to create a 'quality culture' reaffirms the critical role played by top management in the quality program. Successful large-scale change (as described above) requires visible and active leadership. During the move towards quality, employees are likely to feel disrupted, uncertain, insecure and possibly even threatened. In order to manage resistance to change and facilitate the transition towards quality, senior managers should act as role models and emphasize critical values and practices. Once the desired cultural mindset has been established, management needs to continuously demonstrate leadership in quality matters, as an example to others and to communicate the seriousness with which the quality approach is viewed. Managers should therefore realise that as quality becomes increasingly important, so too will their role as facilitators and leaders.

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