The relationship between competitive strategies and product quality

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Abstract
Purpose – The purpose of this paper is to examine the underlying strategic intent of quality performance. Specifically, the study aimed to examine the individual impact of differentiation and cost leadership as well as their interaction effect on quality performance.

Design/methodology/approach – This study employed a data set drawn from 102 managers of Australian manufacturing firms. Multiple regression analysis with moderating effect was used for analysing the relationship between the competitive strategies and quality performance.

Findings – The findings indicated that product quality was predicted by differentiation strategy, but not cost leadership strategy. However, the effect of differentiation on quality was moderated by cost leadership whereby the higher the cost leadership, the stronger the effect.

Research limitations/implications – The small sample size which was dominated by small-to-medium sized firms (SMEs) was the major limitation of the study. The sample size and distribution also inhibited the comparison of the results between industry sectors.

Practical implications – The results contribute to a better understanding on how quality can be effectively employed as a base for realising competitive strategy. In particular, the positive interaction between differentiation and cost leadership in predicting quality performance suggests the synergy between the two as well as supporting the cumulative view of competitive strategies.

Originality/value – By testing the interaction effect of differentiation and cost leadership in predicting quality performance, this study advances the previous works on the area which looked at the relationship between quality performance and each of the two competitive strategies separately.

Keywords Competitive strategy, Product quality, Manufacturing industries, Australia

Paper type Research paper

Introduction
Much has been written about quality as a source of competitive advantage in the last decade; however, little attention has been given to examine how quality performance can be effectively employed as a base for realising firms’ competitive strategy (Gale and Klavans, 1985). More importantly, literature has shown conflicting arguments concerning the strategic orientation that drives quality performance, particularly between differentiation and cost leadership. One group of scholars suggest that quality fits differentiation strategy, whilst the others hold that quality is positively related to cost reduction which would fit the objective of cost leadership strategy (Morgan and Piercy, 1996). Further to this, linking quality with both differentiation and cost leadership strategies leads to the issue of compatibility between both strategic orientations (Hill, 1988).

In light of the above, it is important to examine the link between quality performance and the two competitive strategies – cost leadership and differentiation – to provide a better understanding of the extent to which quality can serve the
underlying intent of each of the two competitive strategies. In order to resolve this inconsistency, this paper presents an empirical study that was designed to serve two purposes. First, it sought to examine the effect of the adoption of different strategic competitive strategies – differentiation and cost leadership – in predicting quality performance. Second, it considered the co-alignment between differentiation and cost leadership – which has been a contentious issue – in predicting quality performance.

**Literature review**

**Cost leadership and differentiation**

When outlining the idea of generic competitive strategies, Porter (1980) holds that cost leadership and differentiation signify two fundamentally different approaches to achieve competitive advantage. Cost leadership strategy seeks to achieve above-average returns over competitors through low prices by driving all components of activities towards reducing costs. To attain such a relative cost advantage, firms will put considerable effort in controlling and production costs, increasing their capacity utilization, controlling materials supply or product distribution, and minimising other costs, including R&D and advertising.

In contrast, differentiation strategy aims to build up competitive advantage by offering unique products which are characterized by valuable features, such as quality, innovation, and customer service. Differentiation can be based on the product itself, the delivery system, and a broad range of other factors. With these differentiation features, firms provide additional values to customers which will reward them with a premium price.

The relationship between these two generic strategies has been debated since their origin. Porter (1985) originally suggested that they are fundamentally inconsistent to each other, and therefore, firms must make a choice between them. That said, he did note that cost leaders can only achieve superior performance if the firm provides an acceptable level of value to buyers; that is meeting the buyers’ expectations. Similarly, differentiators can achieve a competitive advantage if the premium price charged to customers is not offset by the cost of “funding” the differentiation features. However, he strongly stressed the incompatibility between the two, for example, by suggesting that differentiation is usually costly. He also used the phrase “stuck in the middle” to emphasise that the combination of cost leadership and differentiation will unlikely to produce a sustainable competitive advantage. This argument has been opposed by a number of scholars who asserted that it is not only possible for firms to combine both strategies but also that such combination will produce competitive advantage (Hill, 1988; Miller, 1992). Almost a decade later, Porter (1991) revised his earlier argument. His amended view was that:

> competitive advantages can be divided into two basic types: lower cost than rivals, or the ability to differentiate and command a premium price that exceeds the extra cost of doing so.

Any superior performing firm has achieved one type of advantage, the other, or both (p. 101).

**Quality as competitive advantage**

By adopting a generic competitive strategy, firms will translate the underlying intent of the strategy into various operational performance measures. These include quality, innovation, service, brand, flexibility, and price. This study focused on quality as
a strategic performance as a reflection of a competitive strategy of the firms. Over the past two decades, quality has been heralded as the source of competitive advantage (Forker et al., 1996; Hans and Will, 1993; Raghunathan et al., 1997). Quality has gone through an evolution process, from an operational level to a strategic level, and some scholars have given strong support for the view that quality must be adopted as a strategic goal in organizations (Adam, 1992; Garvin, 1988; Schonberger, 1992).

Despite the arguments concerning the importance of quality and its role in determining firms’ competitive position, only few papers have provided conceptual understanding and empirical evidence of a link between quality and competitive strategy (Chang et al., 2003; Morgan and Piercy, 1996). This issue will be discussed in more detail shortly.

The link between quality and competitive strategy

As noted earlier, literature has presented inconsistent arguments concerning the link between differentiation strategy, cost leadership strategy, and product quality (Belohlav, 1993). The core of these arguments lies in the fit between quality and either differentiation or cost leadership. Each of these is outlined below. Porter (1980) categorised quality as a primary basis for differentiation strategy as firms adopting this strategy will uniquely position their products based on several attributes leading to a premium price. He specifically suggested that quality creates a differentiation point which separates, even insulates, a firm from competitive rivalry by creating customer loyalty as well as lowering price sensitivity. In this way, the firm will be protected from competitive forces that reduce profitability. Similarly, Philips et al. (1983) noted that among the many sources of differentiation, quality was the approach that most often characterizes a differentiation strategy. They also noted the conventional wisdom which suggests an incompatibility between high quality products and low cost for the reason that quality usually requires more expensive materials and processes, which is not supported under a cost leadership regime. This school of thought, however, does not totally negate the link between high quality and low cost. Rather, it suggests that high quality products will eventually result in lower costs after the firm attaining benefits on economies of scale via higher market share (Kroll et al., 1999; Philips et al., 1983).

A second line of argument supports the link between quality and low cost. The strongest support for this notion comes from total quality management (TQM) proponents. Deming (1982), with his “quality improvement chain” concept, argued that organizations can enhance their competitiveness by improving quality. This will result in cost reduction through eliminating scrap and rework. The concept of quality costs developed by Crosby (1979) and Juran and Gyrna (1993) provide explanations on the link between quality performance and cost reduction. The idea of quality cost suggests that any defective products (i.e. poor quality) will incur costs, commonly labelled as failure costs, which include the costs of rework and scrap. In the light of the link between quality performance and quality costs, firms need to devote their efforts on controlling processes to minimise defects in their outputs, which will also reduce the failure costs. In turn, this reduction will result in lower production costs and overall operation costs (Ardalan et al., 1992; Millar, 1999). This is because the improvement of quality performance will not only impact on one particular functional area (i.e. production) but also inter-functional areas within organisations (Mandal, 2000).
The inclusion of activity based costing as part of TQM techniques (Beheshti, 2004; Hunt, 1993; Montes et al., 2003; Ross, 1995) further indicates the link between cost control (which characterises cost leadership strategy) and quality. Several empirical studies have exemplified the link between quality performance and cost reduction. For example, Maani et al. (1994) showed that quality performance (in terms of scrap, rework, and customer complaints) not only has a favorable impact on the operational variables (i.e. production cost, on-time delivery, WIP levels, worker idle time, lead time, productivity), but that its impact will also be apparent at the business performance level (i.e. ROS, ROA, sales volume, market share). The arguments for quality costs have been extended to the point where firms can achieve better financial performance by reducing failure costs rather than by improving sales (Harrington, 1987). This was evidenced in the 1980s when the lower price and higher quality of the Japanese products flooded global markets which had previously been dominated by Western companies (Raisinghani et al., 2005).

This causal link between quality and cost, therefore, is different from that held in a classical economics theory, as was noted earlier. Here, quality is considered as directly inverse to cost. This seems to be compatible with a cost leadership strategy that seeks the lowest possible unit cost in production. The chain of reactions starts with quality improvement which results in cost reduction, which results in firms having the opportunity to offer high quality with low prices. In this way, firms will be rewarded with higher market share and a better competitive position in the market (Deming, 1982). In essence, this school of thought holds that there is no conflict between quality and cost as opposed the traditional view which suggests that higher quality means higher costs (Fawcett et al., 2000; Luchs, 1986).

Aside from the opposing arguments outlined above, several scholars have suggested the “unification” of differentiation and cost leadership brought by quality. Belohlav (1993), for example, argued that attaining high quality performance allow firms to pursue not only a differentiation strategy, but also a cost leadership strategy. He further suggested that quality bridges the two different perspectives of strategy into one dimension called the “value dimension”. From a theoretical point of view, this argument allows the compatibility between cost leadership and differentiation strategies which has been extensively debated in strategic management literature (Hill, 1988). Moreover, it is consistent with the demand for pursuing cumulative dimensions of performance (Corbett and van Wassenhove, 1993; Flynn and Flynn, 2004; Flynn et al., 1999; Noble, 1995). Specifically, Reed et al. (1996) show how quality simultaneously encompasses both differentiation and cost leadership. They argue that by focusing on customer needs, quality is concerned with providing better products that satisfy customers’ needs. This is associated with differentiation strategy. At the same time, by focusing on internal processes, quality also leads organizations to reduce cost as a result of the elimination of defects and waste. This makes it compatible to cost leadership strategy. The implication of this notion is that competing on quality will provide firms with double advantages by providing customers with both differentiated products and lower costs (Gale and Klavans, 1985; Ho et al., 2005; Reitsperger et al., 1993).

Given these three key arguments, it is hypothesised in the current study that quality performance is predicted by differentiation strategy, cost leadership strategy and a combination of both strategies. As such, the following three hypotheses are postulated:
**Research method**

*Sample and procedures*

Empirical data was obtained via a survey of 1,000 managers. The majority of these managers held senior position within their companies and had knowledge of past and present organizational practices relating to quality and innovation. Participants were selected randomly from Australian companies in both manufacturing and non-manufacturing sectors. Only one site (or plant) per organization was included in the sample.

Of the 1,000 questionnaires originally sent out, 150 were returned unmarked, which reduced the population size to 850. Of this 850, 194 surveys were returned with answers. This constituted an overall response rate of 22 per cent. As the focus of this study was on manufacturing sectors, all surveys returned from non-manufacturing organizations were discounted. This reduced the sample size by a further 48 per cent, leaving a total sample size of 102.

Of the 102 companies included in the final sample, 93 per cent were small-to-medium sized enterprises, employing 500 employees or less. Approximately, 60 per cent of the sample were companies with less than 100 employees. In terms of the positions of the respondents who represented these organizations, more than 65 per cent were either quality managers or production/operations managers and 25 per cent were senior managers (either general managers or managing directors). The remaining respondents held positions in either finance, marketing, human resources, and administration.

The research instrument comprises three measures that were derived from previous studies on business strategy and TQM. Perceptual measures were used to gauge the level of strategy adopted in the firm and the firm’s performance using five-point Likert scale as outlined below.

**Competitive strategy measures**

The competitive strategy measure comprised of selected items from the scale developed by Miller (1988). The reason for this choice was that the scale included both attitudinal and behavioural aspects of differentiation and cost leadership strategies. The original competitive strategy scale by Miller was altered slightly for the purpose of this study, by excluding any items that were not measured via a Likert-scale. Additionally, items that were purely quantitative (e.g. R&D expenditure and sales) were excluded *post-hoc* due to difficulties in obtaining responses.

The three-item differentiation strategy measure assessed the use of major and frequent product innovations, product novelty, speed of innovation, and the innovative orientation of the firm. Items relating to more radical innovations, such as undo competitors and high-risk R&D projects, were excluded as they were not relevant to
the quality focus of this study. Whilst quality is related to innovation, it is more related
towards incremental than radical innovation (Prajogo and Sohal, 2001).

The cost leadership scale comprises of two items measuring the extent of
price-cutting, expenditure minimization and cost control within the firm. This is
similar to the content of the scale used by Fuentes et al. (2006). Most importantly,
it is consistent with Porter’s (1980, p. 35) description of this strategy, as the:

...aggressive construction of efficient scale facilities, vigorous pursuit of cost reduction from
experience, tight cost and overhead control, avoidance of marginal customers accounts and
cost minimisation in areas like R&D, service, sales force, advertising and so on.

The other items in Miller’s scale of cost leadership were not considered as truly
reflective of cost leadership. For example, timid and incremental behaviours in
decision-making do not necessarily constitute cost leadership strategy.

Quality performance measure
In this study, quality performance is also considered to be a multidimensional measure.
The scale used by Ahire et al. (1996) was adopted for its content validity, construct
validity, and reliability. The scale comprised of four items reflecting dimensions of
quality performance: reliability, performance, durability, and conformance to
specification. These items were derived from Garvin’s (1984) quality dimensions.
As Garvin has been acknowledged as one of the authorities in the area of quality
management, this establishes the content validity of these items. Ahire et al. (1996)
reports strong validity for the scale, with several goodness of fit indices and a
Cronbach’s $\alpha$ of 0.92. Compared to other constructs mentioned above, this scale has
superiority in terms of validity and reliability compared to other studies (Dow et al.,

In terms of the data collection approach, the construct used perceptual data where
the respondents were asked to assess their organizational performance relative to
competitors in their industry (Ahire et al., 1996). Whilst this approach may appear
somewhat inferior because of the potential self-perceptual bias, it can overcome the
problem of inter-industry differences as respondents are asked to assess these quality
indicators in comparison to the major competitors in the industry (Dow et al., 1999).

Data analysis
Scale validity and reliability
To check the validity and reliability of the three measures, the method employed by
Flynn et al. (1994), Samson and Terziovski (1999), and Meyer and Collier (2001) was
followed. Unidimensionality of the three measures was assessed via principal
component analysis with varimax rotation. All items loaded strongly ($>0.5$) on their
appropriate factors which supported their unidimensionality (Hair et al., 1998).
The strong factor loadings also indicate convergent validity for the three scales
(Anderson and Gerbing, 1988). The discriminant validity of the three scales was tested
by pairing each of the scales and subjecting them to confirmatory factor analysis
(CFA). Two models of CFA were run with the first model allowing the correlation
between the two scales to be estimated (unconstrained), and the second model setting
the correlation between the two constructs to 1 (constrained). The difference of the
$\chi^2$ value of the two models in each pair was compared to 6.64 to test if the two scales
were statistically different at $p < 0.01$. With three scales, the number of possible combinations between them was also three. Thus, three pairs of discriminant validity tests were run, and the results (not reported here) showed significant differences between all pairs at $p < 0.01$.

The reliability analysis was conducted by calculating the Cronbach’s $\alpha$, with each of the three measures exceeding the 0.6 threshold required of exploratory studies (Nunnally, 1978). No item was deleted during the validation process. The final results of construct validity and reliability tests of the 11 constructs are reported in Table I.

Once the factor analysis was completed, factor scores were calculated to provide estimates for each of the three measures.

**Bivariate correlation**

Pearson correlations were performed as a preliminary analysis on the relationship between differentiation, cost leadership, and quality. The results are presented in Table II.

Differentiation had no statistically significant relationship with cost leadership with Pearson $r$ close to 0. This suggests that whilst the two strategic intents are different, they are not antagonistic to each other. This supports what Porter suggested that as cost leaders could not ignore the bases of differentiation, so, too differentiators could not ignore their cost position so as to not lead them into inferior cost position in the market. The weak correlation between the two strategies also minimised the potential problem of multicolinearity when they were subjected to regression analysis in the next stage of analysis (Tabachnick and Fidell, 2001). Differentiation strategy was also shown to be significantly related to quality performance ($p < 0.01$, Pearson $r = 0.44$), whilst cost leadership, however, did not show a statistically significant relationship with quality performance ($p > 0.05$ and Pearson $r = 0.00$).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Items</th>
<th>Factor loading</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiation</td>
<td>Major and frequent product innovations</td>
<td>0.88</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Product novelty or speed of innovation</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Growth-, innovation-, and development-oriented</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Cost leadership</td>
<td>Price cutting and minimization of expenditures</td>
<td>0.86</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Cost centres and fixing standard costs are used</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Product quality</td>
<td>Product performance</td>
<td>0.84</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>Conformance to specifications</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Durability</td>
<td>0.84</td>
<td></td>
</tr>
</tbody>
</table>

Table I. Scale validity and reliability

<table>
<thead>
<tr>
<th></th>
<th>$V_1$</th>
<th>$V_2$</th>
<th>$V_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiation ($V_1$)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost Leadership ($V_2$)</td>
<td>-0.04</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Product quality ($V_3$)</td>
<td>0.44**</td>
<td>0.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Notes: $N = 102$; ** $p < 0.01$

Table II. Correlation analysis
Multiple regression analysis

Hierarchical multiple regression analysis (MRA) was performed to further test the relationships revealed in the correlation analysis as well as examining the interaction effect between two competitive strategies in predicting quality performance. Both differentiation and cost leadership were treated as independent variables and quality as a dependent variable. Organisational size (in terms of number of employees) was included in the equation as a control variable as previous studies have shown it to affect quality performance (Ahire and Golhar, 1996; Brah et al., 2002). The interaction effect was represented by the product term between differentiation and cost leadership. In order to generate a standardized regression model when an interaction term is present, all variables were converted into z-scores prior to analysis (Tabachnick and Fidell, 2001). Three regression models were run in a hierarchical order. The first step only included control variable (i.e. size) as an independent variable, the second step was to add control variable and main effects (i.e. differentiation and cost leadership), and the third step was to further add the interaction (i.e. product term) between differentiation and cost leadership. The results are presented in Table III.

As shown in model 1, size did not show a significant effect on quality performance. In model 2, differentiation showed a significant effect on quality ($\beta = 0.43$, $p < 0.01$) whilst cost leadership did not ($\beta = 0.05$, $p > 0.05$). This confirms the results of the correlation analysis (Table II). Therefore, $H1$ is supported, whilst $H2$ is not supported. The explained variance ($R^2$) of model 2 was 20 per cent, thus showing a 19 per cent increase from model 1 at a significance level of 0.01. This was unique effect over and above the variance contributed by size. In model 3, the interaction between differentiation and cost leadership showed a significant effect on quality ($p < 0.05$, $\beta = 0.20$). The increment explained variance ($\Delta R^2$) was 24 per cent, hence increasing 4 per cent from model 2 at a significance level of 0.05. This indicates an interaction effect between differentiation and cost leadership in determining quality performance; hence, supporting $H3$. The positive sign of the interaction effect indicates that when cost leadership is high, the positive relationship between differentiation and quality performance is stronger. The interaction effect is shown in Figure 1.

The effect of differentiation on product quality was illustrated with the slope of the line. In the case of low score of cost leadership, the line was nearly flat, indicating a very low effect. On the other hand, when cost leadership is high, the slope was steep, indicating strong effect.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$p$-value</td>
<td>$\beta$</td>
<td>$p$-value</td>
<td>$\beta$</td>
<td>$p$-value</td>
</tr>
<tr>
<td>Size</td>
<td>-0.12</td>
<td>0.23</td>
<td>-0.11</td>
<td>0.24</td>
<td>-0.11</td>
<td>0.24</td>
</tr>
<tr>
<td>Differentiation</td>
<td>0.43</td>
<td>0.00**</td>
<td>0.38</td>
<td>0.00**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost leadership</td>
<td>0.05</td>
<td>0.57</td>
<td>0.06</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation × cost leadership</td>
<td></td>
<td></td>
<td>0.20</td>
<td>0.02*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$ (explained variance)</td>
<td>0.01</td>
<td></td>
<td>0.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td></td>
<td></td>
<td>0.19**</td>
<td>0.04*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table III. Hierarchical MRA

Notes: $N = 102$ firms; $^* p < 0.05$, $^{**} p < 0.01$; $\beta$: standardised regression coefficient
Discussion and implication of the findings
Two major inferences can be drawn from the results in terms of how quality is linked to a competitive strategy. First, the finding did not support the link between quality and cost leadership strategy despite arguments supporting the relationship between quality and cost reduction noted earlier. However, a closer look at the nature of the link between quality and cost suggests that this finding is not surprising. For example, while holding the inverse link between quality and cost, Deming (1982) sternly warned that solely focusing on low cost will undermine firms' commitment to produce high quality products. In particular, he was strongly against the policy of creating competition among suppliers and changing suppliers frequently in order to press the price of supplied material down. This policy, he argued, had been responsible for firms producing poor quality products (Deming, 1986). Therefore, what Deming tried to argue was that cost reduction is a by-product of quality, not the opposite. Another explanation for this finding can be derived from the concept of quality cost. As summarized by Hackman and Wageman (1995, p. 310):

... the fundamental premise of TQM is that the costs of poor quality (such as inspection, rework, lost customers, and so on) are far greater than the costs of developing processes that produce high-quality products and services.

This notion entails that reduction in (failure) costs requires firms to invest in prevention and appraisal costs which will result in the improvement of quality performance. Thus, firms cannot simply “reduce costs at all costs”. Further to this, it is important to differentiate low cost and low price although the two often relate to each other. However, in the context of quality, whilst quality is associated with low cost, it is not “economy” product (Gale and Klavans, 1985). High quality products can be sold at a premium price. With low cost of production, profit margins are increased. This allows firms to perform above average.

Figure 1. Interaction effect between differentiation and cost leadership in predicting quality performance
The second inference relates to the finding that, cost leadership moderates the relationship between differentiation and quality performance. In other words, quality is a realisation of “cost-conscious” differentiation strategy. This is because, by pursuing quality, firms not only offer products which are better (i.e. different) from competitors in their performance, but they also produce products at a relatively lower cost. On the external side, quality – in terms of performance, reliability, and durability – serves differentiation strategy. These aspects of quality are important in determining customers’ perceptions on the product. On the internal side, quality – in terms of conformance to specification or low failure costs – attends cost leadership strategy. Several studies support this notion as they distinguished these two aspects of quality (i.e. quality by design and quality by conformance) and showed the double-impact of quality on organisational performance. Quality by design is positively related to customer satisfaction, whilst quality by conformance positively affects low cost (Forza and Filippini, 1998; Fynes and Voss, 2001).

The synergy between external differentiation and internal cost leadership provides firms with flexibility to select the scheme of competition they want to pursue by charging premium price with higher quality or offering lower price with relatively equal quality level to competitors. This issue is particularly important when considering the industry life cycle. Meirovich (2006) argued that as an industry grows into maturity, customer needs and products’ attributes are better tied and customers become more familiar with industry products. As a result, the role of design quality diminishes. At the same time, as more customers enter the market, the volume of product’s usage increases. At this point, firms have to deal with large production volume and the focus then shifts into maintaining a high degree of conformance. Specifically, he stressed that “in the maturity and decline stages it is not possible to define cut-and-dried priority between the two quality components” (p. 211).

By and large, the findings support the argument that quality allows the pursuit of differentiation and cost leadership strategies simultaneously. In particular, the findings support the notion that quality “unifies” these two different strategies. This is in line with the assertion that quality allows firms to accumulate multifaceted competitive advantage which is increasingly demanded by the severe competition of today (Belohlav, 1993).

**Conclusion, limitations, and future research**

This study has shown that quality was primarily predicted by differentiation strategy. This relationship, however, is moderated by cost leadership strategy. This result reconciles various arguments concerning the link between the three variables. The author acknowledges the limitations of using perceptual measures of company performance. That said, this method has been found to moderately correlate with more objective measures of performance (Curkovic et al., 2000). Still, as Ketokivi and Schroeder (2004) suggested, a careful interpretation and generalization of the results needs to be taken when using perceptual data to measure firm’s performance.

This study could be furthered in several ways. First, future studies can segregate different dimensions of quality (Chang et al., 2003; Forker et al., 1996) and examine the relationship between these dimensions to different strategies (Sousa and Voss, 2002). Second, future studies can examine the contingency factors which drive the choice of the strategic intent and performance, particularly in different business environments.
Specifically, analysis can be done to examine the impact of the fit between environment, competitive strategies, and quality performance in determining business performance. Addressing this issue can be done by comparing the relationships between strategy and quality in various industry or product sectors (Jabnoun et al., 2003; Sousa and Voss, 2001; Vokurka and Davis, 2004). The issue of maturity can also be applied at firm’s level by examining the effect of firm’s age on its strategy and quality performance (Madu and Kuei, 1995; Sureshchandar et al., 2003). Finally, future studies can improve the balance of the proportion of organisational size which in this study was dominated by SMEs. This is because not only size can affect performance, but it also influences the strategic choice of the firm (Davis and Vokurka, 2005), and, perhaps, moderates the relationship between strategy and performance.

References


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**Appendix. Differentiation strategy**

Indicate the degree of emphasis which the firm places on the following activities (1 = strongly disagree, 3 = neutral, 5 = strongly agree):

- Development and introduction of major and frequent product innovations is our primary strategy.
- Our company always attempts to be ahead of competitors in product novelty or speed of innovation instead of following competitors in introducing new products or services.
- We are growth-, innovation-, and development-oriented rather than favouring the tried and true market.

**Cost leadership**

Indicate the degree of emphasis which the firm places on the following activities (1 = strongly disagree, 3 = neutral, 5 = strongly agree):
• Price cutting and minimization of expenditures is our very important strategy.
• Cost centres and fixing standard costs by analysing variances for cost control is used frequently throughout the firm instead of only rarely or for a small part of operations.

Product quality
Relative to the major competitors in our industry (1 = worst in industry, 3 = average, 5 = best in industry):
  • The performance of our product is . . .
  • The reliability of our products is . . .
  • The durability of our products is . . .
  • The conformance to specification of our products is . . .

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