

# **The Relationship between Subjective and Objective Company Performance Measures in Market Orientation Research: Further Empirical Evidence**

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Subjective performance measures have been widely used in research on market orientation and its presumed link to company performance. However, only a small number of studies have examined the link between subjective performance measures and objective ones. This study replicates earlier research and extends previous findings using a broader sample of firms than in most previous studies, and uses slightly different measurement scales. It finds that there is a strong correlation between objective and subjective performance measures. However, this correlation is far from perfect and the article concludes that researchers should attempt to validate their results by using both types of measures.

Keywords: market orientation, performance measures, subjective, objective

## **Introduction**

Marketers have long assumed that there is a positive association between being “market oriented” and good company performance (see Esslemont & Lewis 1991). For instance, Kotler (1991 p17) states that a company operating according to the marketing concept “creates profit through customer satisfaction”. Such assumptions have only been recently subjected to serious empirical inquiry. Since 1990 there have been a considerable number of studies examining the relationship between market orientation and company performance (see Table 1). Research into market orientation and its possible effects is considered important, for example the Marketing Science Institute in the USA accorded the topic priority status for funding in the early 1990’s (Deshpandé & Farley 1998).

The body of research on market orientation is an excellent example of researchers undertaking replication of previous work in order to develop generalisations about the topic of interest. Indeed Jaworski & Kohli (1996) comment that “over the past ten years, significant progress has been made in the market orientation area. Scholarly attention has focused on the definition, measurement and impact of a market orientation”. Over a dozen studies have been conducted with many confirming positive relationships between market orientation and various performance measures.

One common feature of research into the effect of a market orientation on company performance is that studies generally incorporate subjective measures of performance as the dependent variables. The term “subjective” is used to mean that the company’s performance score is derived using a scale with anchors such as “very poor” to “very good,” or “much lower” to “much higher” compared to competitors. These can be contrasted with an “objective” measure that would be an actual percentage figure for sales growth or profitability. Jaworski & Kohli (1996) point out that this reliance on subjective measures is a limitation of the research to date. A summary of the major market orientation studies is shown in Table 1, with the particular performance variables listed for each study. The studies are divided into those that use subjective and objective measures. A brief comment as to the results is also included.

**Table 1. Previous studies on Market Orientation and performance**

Study	Sample	Performance Measure	Findings
<b>Subjective Measures</b>			
Narver & Slater (1990)	140 SBU's in one corporation	Subjective assessment of ROA for self and competitors	Positive association
Deshpandé et al (1993)	50 Japanese firms - cross industry (staff plus customers)	Subjective evaluation of profit, size, market share and growth compared to largest competitor	Positive association
Jaworski & Kohli (1993)	222 business units from sample of US corporations across industries. A second sample of 230 US managers	Subjective measure – “overall performance”. Objective measure – market share	Positive association for subjective measure but not objective measure
Slater & Narver (1993)	140 SBU's in 1 forest products corporation	Subjective evaluation of ROA, sales growth and new product success, relative to competitors	Positive association
Deng & Dart (1994)	248 firms across industries	Subjective evaluations including financial performance, liquidity, sales volume	Positive association
Slater & Narver (1994)	81 SBU's in 1 corporation and 36 in another	Subjective evaluation of ROA relative to competitors	Positive association
Greenley (1995)	240 UK companies across industries	Subjective evaluation of ROI, new product success and sales growth	Association may be positive or negative dependent on competitive environment.
Pelham & Wilson (1996)	68 US firms across industries	Subjective evaluation of business position relative to expectations	Positive association
Pitt et al (1996)	1,000 firms across industries in UK and sample of Maltese firms across industries.	Subjective evaluation of return on capital and sales growth	Positive association
Slater & Narver (1996)	228 manufacturing firms across industries	Subjective evaluation of return on assets and sales growth relative to competitors	Positive association with sales growth but not profit
Balakrishnan (1996)	139 firms in single industry study: machine tools	Subjective evaluation of relative profit, satisfaction with profit, customer retention and repeat business	Positive association
Avlonitis & Gounaris (1997)	444 Greek firms across industries	Subjective evaluation of profit, turnover, ROI, and market share	Positive association
Deshpande & Farley (1998)	82 managers in European and US companies	Subjective evaluation of sales growth, customer retention, return on investment, and return on sales	Positive association

Appiah-Adu (1998)	74 Ghanaian firms across industries	Subjective evaluation of sales growth and ROI relative to expectations	Association is moderated by environment
<b>Objective Measures</b>			
Esslemont & Lewis (1991)	3 surveys each using cross-industry NZ samples	ROI and change in ROI	No association
Ruekert (1992)	Two SBUs in one large corporation	Selected one SBU with low ROI and one with high ROI.	Positive association
Diamantopoulos & Hart (1993)	87 UK firms – cross industry	Sales growth and average profit margin compared to industry average	Positive association
Jaworski & Kohli (1993)	222 business units from sample of US corporations across industries. A second sample of 230 US managers	Subjective measure – “overall performance”. Objective measure – market share	Positive association for subjective measure but not objective measure
Au & Tse (1995)	41 Hong Kong hotels and 148 New Zealand hotels	Hotel occupancy rates	Weak association
Tse (1998)	13 Hong Kong property developers	Financial data supplied by external organisation	No association

### Previous Research

Table 1 lists 14 studies that have used subjective measures. Twelve of those found significant associations between market orientation and performance. Two found that the association was moderated by the environment. It also shows 6 studies that have used objective performance measures. One of those listed, Jaworski & Kohli (1993) used both types of performance measure. Of the six studies that used or included objective performance measures, two found a significant association, three found no association, and one found only a weak association. Therefore the substantive implications of this body of research appear to depend heavily on the validity of subjective performance measures.

The purpose of this paper is not to suggest that subjective measures are bad. There are several good reasons for using them. First, as Dess & Robinson (1984) pointed out, managers may be reluctant to disclose actual performance data if they consider it commercially sensitive or confidential. Second, subjective measures may be more appropriate than objective measures for comparing profit performance in cross-industry studies. This is because profit levels can vary considerably across industries, obscuring any relationship between the independent variables and company performance. Subjective measures might be more appropriate in this situation because managers can take the relative performance of their industry into account when providing a response (ie “rate the profit performance of your firm relative to others in your industry”). Third, performance measures such as profitability may not accurately indicate the underlying financial health of a company. Profitability may vary due to reasons such as the level of investment in R&D or marketing activity, that might have longer term effects. Last, there have been several studies that show a strong correlation between objective and

subjective measures. Most of the papers listed in Table 1 cite three particular studies that have examined the relationship between objective and subjective measures. These studies are by Dess & Robinson (1984), Pearce, Robbins & Robinson (1987), and Venkatraman & Ramanujam (1985). Unfortunately the latter study has not been published and we have not been able to examine the results. A literature search identified only two other studies, namely Hart & Banbury (1994) and Covin, Slevin & Schultz (1994). Each published study is now briefly discussed.

### Objective vs Subjective measures: Previous Findings

A summary of studies on objective and subjective performance is presented in Table 2. In three of the four cases the authors gathered both objective and subjective data on multiple aspects of performance, such as sales growth, market share and profitability. Where multiple measures of performance were used, the range of correlations found between them is shown.

**Table 2. Summary of previous research**

Study	Sample	Strength of association between subjective and objective performance measures (r)
Dess & Robinson (1984)	26 US manufacturing firms	Between r=0.48 to r= 0.61
Pearce, Robbins and Robinson (1987)	97 US manufacturing firms	Between r=0.74 to r= 0.77
Covin, Slevin and Schultz (1994)	91 US manufacturing firms	r= 0.44 (only one performance variable used, namely sales growth).
Hart & Banbury (1994) (survey conducted in 1988)	720 US firms across various industries	Between r=0.44 to r=0.55 when whole sample analysed. Up to r=0.99 when only examining firms within a specific industry.

All four of these studies found significant associations between the two types of performance measures. However, the available evidence is confined to samples derived within the United States, and with one exception, confined to manufacturing firms. Also, the degree of correlation varies considerably across these studies. As subjective performance measures are popular, and the basis for substantive conclusions being made about the relation between market orientation and company performance, we believe it would be useful to provide further evidence as to their relationship with objective performance data.

This study seeks to replicate and extend existing research under differing conditions: Australia in the 1990s rather than the US in the 1980s. We also wish to test whether the association between the two types of performance measures would be similar if a broader sample of firms was used than in most of the previous studies. We did this by including non-manufacturing firms in the sample. We found in pre-tests that many respondents did not know the profitability levels of their competitors. Therefore we created two scales to measure the absolute level of firm performance. Absolute performance seems to be a reasonable measure since is absolute performance, not performance relative to competitors that determines how much wealth is created for owners or shareholders of a business (see Armstrong & Collopy 1996). In

addition, using variations in terms of measurement scales in replication research adds confidence that results in a particular field of interest are not unduly affected by any particular measures used (Lindsay & Ehrenberg 1993).

## Sample

This research was part of a broader study into business practices and their effect on performance. The sampling frame was businesses located in South Australia listed in the *Business Who's Who* (Beck 1997). This was an appropriate sampling frame with a variety of companies from all industries, and of a wide range of sizes. The only limitations for inclusion in the sample were that the company employed ten or more people and had been operating for more than three years.

The data collection was carried out in two stages. First, eligible companies were contacted by mail. In total, 180 companies were asked to participate. A personal letter to the chief executives requested participation in a study of business practices that also involved the disclosure of company performance information. Confidentiality was assured. The letter also mentioned an incentive to participate, namely a summary of the scores for the respondent organisation compared to other similar organisations in the sample. This was found to be an excellent method to encourage participation, with 124 companies agreeing to take part, a response rate of 69%. Of those that responded, 45 provided objective as well as subjective performance data. Of these, 23 were manufacturing firms and 22 were non-manufacturing firms. The companies that provided full performance data were broadly similar to the companies that did not. Some companies were part of larger corporations but were able to provide data for their own activities.

The characteristics of the sample in terms of turnover and number of employees indicate that the sample represented a wide range of companies of different sizes (see Appendix A).

## Procedure

Data were collected in personal interviews with the chief executive or general manager. The interviews were conducted by IQCA (Interviewer Quality Control Australia) personnel. Personal interviews were used instead of the common mail survey more usual in strategy research, because it ensures that it is the intended respondent who actually completes the questionnaire.

## Measures

The objective performance measure was the current and previous years' ROI in percentage terms (e.g. 9%). As mentioned previously, not all respondents were able to provide objective data. The respondents that did, either consulted financial records or financial personnel to provide this information, or had accurate knowledge of their company's actual performance.

For the subjective measures we created two two-item scales that asked, for both the current and the previous financial year

Please rate the **overall financial result** for your firm

Please rate the **Return on Investment** or **Return on Assets** of your firm<sup>1</sup>

Eleven point scales were used, as pre-testing using seven-point scales showed that respondents tended to rate at the higher end of the scale. It was hoped that this problem would be reduced by increasing the number of scale points, and making the end-points very “extreme”. The two scale end-points used in this study were 1= *terrible* and 11= *absolutely outstanding*. The scales are shown in full in Appendix B.

Pre-tests also indicated that the performance scales were easily interpreted and understood by senior managers. The correlation between the two items measuring current year’s performance was 0.72 and for the previous year’s performance it was 0.82. These correlations were high enough to use the average score for each of the two scales as the subjective performance measure.

The mean scores and standard deviations for the three performance measures are shown in Table 5. The variance for the objective measures was much higher than that for the subjective measures. This suggests that objective measures could be more appropriate because with more variance, they would be more sensitive dependent variables.

**Table 5. Descriptive statistics for the performance measures**

Measure	Mean	Standard Deviation
Subjective Assessment of financial performance, current year (average of two items) 11 point scale	7.4	2.0
Subjective Assessment of financial performance, previous year (average of two items) 11 point scale	7.0	2.1
Objective (ROI) figure for current year	12.8	14.7
Objective (ROI) figure for previous year	14.7	14.8

## Results

The correlations between the measures are shown in Table 6. All correlations are significant at  $p < 0.05$ . The results confirm earlier findings that there are strong correlations between objective and subjective performance measures. In this study the correlation between the current year objective and subjective measures is 0.51, and between the previous years’ subjective and objective measures it is 0.48.

<sup>1</sup> In Finance terms Return On Investment and Return On Assets are different performance indicators. Pre-tests indicated that company executives regarded the terms for purposes of survey research as so close to be interchangeable.

**Table 6. Correlations between performance measures**

Measure	1	2	3	4
1 Subjective Assessment of financial performance, current year (average of two items)	1.00			
2 Subjective Assessment of financial performance, previous year (average of two items)	0.64	1.00		
3 Objective (ROI) figure for current year	0.51	0.65	1.00	
4 Objective (ROI) figure for previous year	0.58	0.48	0.86	1.00

## Discussion and Conclusions

This study has provided additional evidence that subjective performance measures of profitability are positively correlated with objective measures. We extended previous findings that were mostly limited to US manufacturing firms, to a broader sample of both manufacturing and non-manufacturing firms, and to a different business environment in another country. We also extended previous research by obtaining data on company performance in absolute terms rather than in comparison to competitors. We note, however, that the correlations are somewhat lower than in Pearce, Robbins & Robinson (1987) and Dess & Robinson (1984). They are similar to the results found by Covin Slevin & Schultz (1994), and also by Hart & Banbury (1994) in their initial cross-industry analysis.

## Directions for Future Research

The association between objective and subjective performance measures is far from perfect. There is enough divergence between the two measures to suggest it is possible that the associations found between market orientation and subjective performance might not be the same as those that might exist between market orientation and objective performance. Therefore, there is a danger of researchers getting a “false positive” finding using subjective measures.

A number of previous studies have found positive associations using subjective measures. The question is, are they valid? Therefore one direction for future research is to gather data on market orientation, and both objective and subjective performance data. Researchers can then test for associations using both types of performance data. If associations are found to hold for both types of performance it would add to our confidence in the results. This would also enable an evaluation of whether subjective financial or profitability performance responses are affected by performance in other areas such as sales revenue or market share.

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## Appendix A. Sample Characteristics

**Table 1. Number of employees in sample companies**

<b>Employees</b>	<b>Number</b>	<b>Percent</b>
Less than 30	7	16
30 to under 50	10	22
50 to under 100	11	24
100 to under 200	9	20
Over 200	8	18
Total	45	100

**Table 2. Turnover of sample companies**

<b>Turnover</b>	<b>Number</b>	<b>Percent</b>
\$1 million to under \$ 5 million	12	26
\$5 million to under \$10 million	9	20
\$10 million to under \$20 million	9	20
\$20 million to under \$100 million	12	27
Over \$100 million	3	6
Total	45	100

## Appendix B. Performance Measurement Scales

### Subjective Measures

*Please rate the overall financial result for your firm for the current year*

**Please circle number**

<i>Terrible</i>	<i>Extremely poor</i>	<i>Very Poor</i>	<i>Poor</i>	<i>Mildly poor</i>	<i>Neither good nor poor</i>	<i>Mildly good</i>	<i>Good</i>	<i>Very Good</i>	<i>Extremely good</i>	<i>Absolutely outstanding</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>

Please rate the **Return on Investment** or **Return on Assets** of your firm for the current year

**Please circle number**

<i>Terrible</i>	<i>Extremely poor</i>	<i>Very Poor</i>	<i>Poor</i>	<i>Mildly poor</i>	<i>Neither good nor poor</i>	<i>Mildly good</i>	<i>Good</i>	<i>Very Good</i>	<i>Extremely good</i>	<i>Absolutely outstanding</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>

### Objective Measures

What was the ROI (return on investment) of your firm (or business unit) for the **(1996/97** year?)

**1996/97** .....   %

What is your estimate of the ROI (return on investment) of your firm (or business unit) for **this (1997/98** year?)

**1997/98** .....   %