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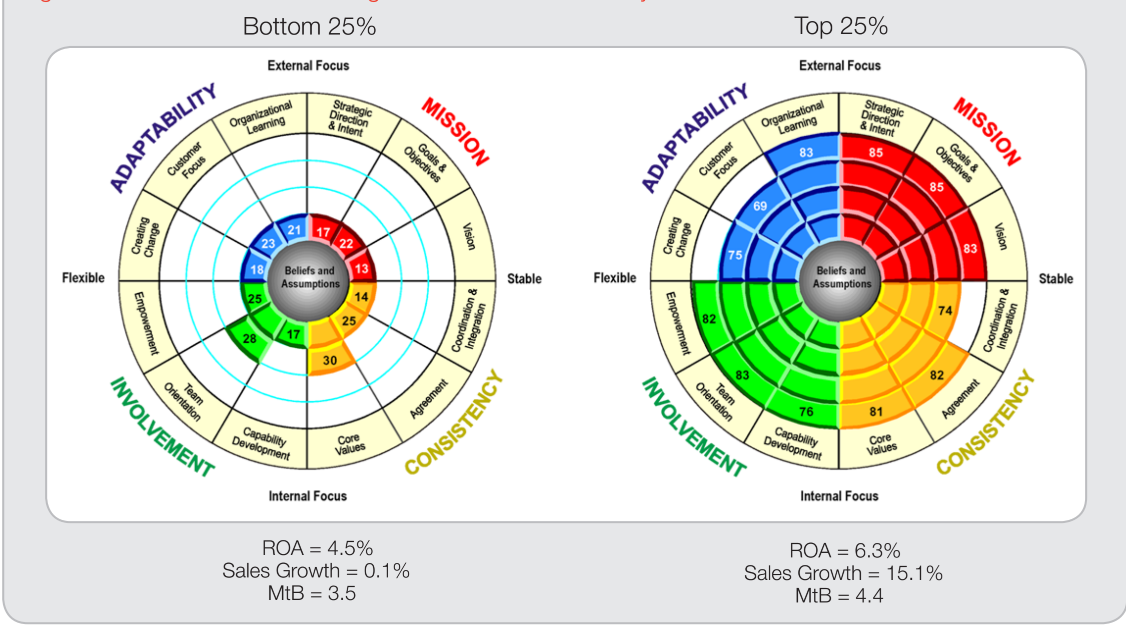
Proving the Link: ROA, Sales Growth, Market to Book

An organization's culture is critical to its success or failure (Schein, 1992; 1999). Many executives, managers, employees and experts intuitively recognize the importance of an organization's culture for the health of the organization. However, prior to 1984, there was no hard evidence to prove the relationship between organizational culture and bottom-line performance results. For the last twenty years, Dr. Daniel Denison, of IMD Business School in Lausanne, Switzerland has been conducting research to prove the link between organizational culture and bottom-line performance metrics. (Denison 1984; Denison 1990). This Research Note highlights the latest compelling evidence linking organizational culture to bottom-line metrics such as return-on-assets, sales growth and market-to-book ratio illustrating that a strong and effective organizational culture can provide a competitive advantage to an organization.

We used the data collected from 102 public companies that completed the Denison Organizational Culture Survey (DOCS). This research shows a strong and significant relationship between culture and financial performance. Figure 1 shows the DOCS composite profiles for those companies in the top 25% versus those in the bottom 25% on their overall organizational culture results. Table 1 translates these differences into financial results, showing that those companies with the most positive culture scores also have the best financial results.

Figure 1 = Scores on Denison Organizational Culture Survey



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Research Method

To examine the relationship between culture and performance, we looked at a sample of public companies surveyed using the Denison Organizational Culture Survey from 1996 to 2004. We included organizations if more than .5% of all employees responded or there were over 100 total respondents. We did this to ensure that the employees surveyed adequately represent an organization's culture. Additionally, we removed projects if they were a subdivision of a public company. The result was a sample of 102 companies in 29 industries incorporated primarily in the US (89%). (Past research indicates that the DOCS results are comparable across countries [Denison, Haaland, & Goelzer, 2003].)

Measuring Performance

Once we had the sample, the next step was to measure performance over time. We chose three financial metrics to examine: return-on-assets, sales growth and market-to-book ratio.

First we took a look at return-on-assets. Return-on-assets is the percentage of profits derived from a company's total assets. In other words, return-on-assets tells you how much profit a company generated for each dollar in assets. The higher the percentage of ROA, the better the organization is at using its invested capital, or assets, to turn a profit. For example, if two companies independently invest $100,000 in equipment for a project and one company produces $10,000 in profit and another produces $12,000, the second company has a greater return-on-assets.

Second and related to profitability, we took a look at sales growth. Sales growth is usually expressed as the percentage of increased sales from one year to the next. For example, if we surveyed an organization in 1999, year 0-1 sales growth was calculated by subtracting the sales from 1998 from the sales from 1999. To get the percentage, we divided the difference by the 1998 sales.

Finally we looked at the market-to-book ratio as a way of measuring an organization's performance. The market-to-book ratio shows how the value of a company by comparing the book value of a share to the market value of a share. For example, assume an organization has $100 Million in assets on the balance sheet and $75 Million in liabilities. The book value of that organization is $25 Million. (Assets – Liabilities = Book Value) If there are 10 million shares outstanding, each share would represent $2.50 of book value. If each share sells on the market at $5 (market value), then the market-to-book ratio would be 2 (because 5/2.50 = 2). Essentially, market value is the investment community's expectations of the company's worth.

We predicted that the companies with higher scores in the DOCS culture traits of Mission, Consistency, Adaptability and Involvement would also have better return-on-assets, sales growth, and market-to-book ratios than those with lower scores. To test our hypothesis, we linked the organizations in our database to publicly-available financial performance data from Standard & Poor's COMPUSTAT database.

Table 1: The Results

Performance Measure	Bottom 25%	Top 25%
Return-on-Assets	4.5%	6.3%
Sales Growth	0.1%	15.1%
Market-to-Book Ratio	3.5	4.4

"Culture matters... If the organization begins to fail, this implies that elements of the culture have become dysfunctional and must change. Failure to understand culture and take it seriously can have disastrous consequences for an organization."

(Edgar H. Schein, The Corporate Culture Survival Guide, 1999, p.3)

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The Results

The results of our analyses show some exciting findings. As you can see in Table 1, in the year of the survey, those organizations with scores in the bottom 25th percentile for traits of Mission, Consistency, Involvement, and Adaptability earn $4500 for every $100,000 spent on assets, while those in the top 25% earned $6500. This profitability is also related to how fast these companies are growing. The sales growth of the top 25% was 15% whereas those in the bottom 25% were staying even at .1% growth. Turning to the market-to-book ratio, the investment/market community is recognizing the organizations with the higher culture scores at 440% of book value versus 350% for organizations in the bottom 25%.

This evidence indicates that the companies with higher culture scores have better performance in the year of the survey. But this study also allowed us to take a look at the longitudinal data and the results indicate that those high scoring organizations also perform better in the future. Figures 2, 3, and 4 illustrate how the bottom and top 25% rank in their industry (by SIC code) over a three year period for each of the three performance measures.

All three graphs indicate that today's culture affects tomorrow's performance. Figure 2 shows that companies in the top 25% improved to the 70th percentile in industry return-on-assets within a three year period. The lower scoring companies barely stay even. Similarly, Figure 3 shows that, as measured by sales growth, the companies in the top 25% consistently beat their industry average. Figure 4 shows a dramatic reversal over the three years with the top 25% improving in the investment community's assessment of their market value while the bottom 25% declined.

Figure 2 = Return-on-Assets

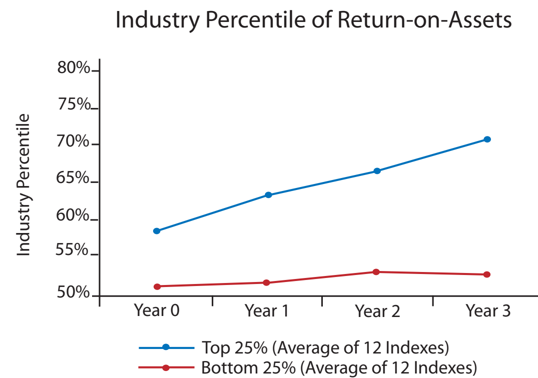


Figure 3 = Sales Growth

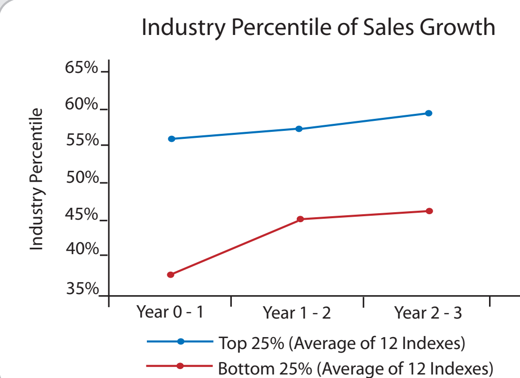
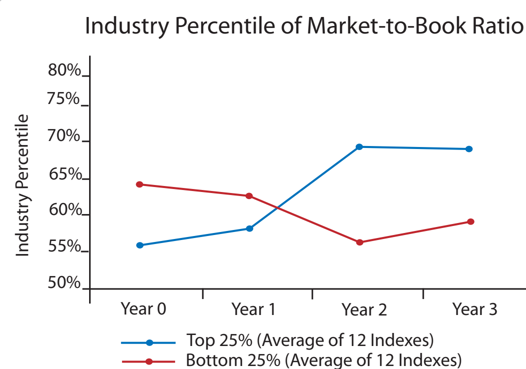


Figure 4 = Market-to-Book Ratio



Conclusion

These results indicate that culture has not only a short-term impact on performance but lasting effects as a competitive edge in the industry. Specifically, this research has shown a premium of almost 2% on ROA, sales growth that is 15% higher, and a 90% greater market value for organizations scoring in the top (vs. bottom) 25th percentile on the DOCS. Culture makes a difference in bottom-line performance. As a measurable and controllable aspect of your organization, it is a lever that can improve future performance. Executives, managers, and employees can focus on their organization's culture today to improve their bottom-line performance tomorrow.

The Denison Model

This research uses a culture model developed by Daniel Denison built to explain the cultural factors leading to financial performance and organizational effectiveness (Denison 1990). The model assesses four behavioral traits: Involvement, Consistency, Mission, and Adaptability. These traits are each broken down into three indexes. Ultimately, they can be defined as "a code, a logic, and a system of structured behaviors and meaning that have stood the test of time and serve as a collective guide to future adaptation and survival" (Denison 1990, 175). The traits and definition of culture match Schein's notion of the "shared basic assumption that the group learned as it solved its problems of external adaptation and internal integration" (1992, 12). The notion of survival in the external environment is manifested in the adaptability and mission traits which describe how strategically-oriented and customer-focused an organization is. The learned responses to the "problems of internal integration" are manifested by the traits of involvement and consistency.

"This research shows us how we can measure culture in a way that is useful to managers because it links culture with other bottom-line performance measures."

(Dan Denison, Denison Consulting)

Related Resources

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Denison, D. R. (1990). Corporate culture and organizational effectiveness. New York: John Wiley & Sons.

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