

Operationalising The Balanced Scorecard: An Initial Analysis Of Factor Structure

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Abstract

To date there has been very little empirical analysis of the Balanced Scorecard (BSC) within the marketing literature. With measuring performance being a central issue in marketing and the BSC being one of the most utilised approaches, this paper investigates the BSC and its factor structure. This research tested independently the “goodness-of-fit” of both the traditional four-factor model and a later five-factor model, which included an “employee/human resource” dimension. Data were collected from a sample of medium-to-large Australian businesses. Factor analysis was conducted on the two alternative factor structures, revealing that the five-factor model fits the observed data as well as does the four-factor model, supporting the inclusion of an “employee/human resource” perspective in future BSC models.

Keywords: Balanced Scorecard (BSC), marketing, measuring performance

Introduction

Business performance measurement has become a topic of great interest, both in academia and industry (Australian Marketing Institute 2004; Clark, Abela and Ambler, 2004; Walker, Slater, Callaghan, Smyrnios and Johnson, 2004). Measuring performance has been a central issue in marketing and remains a vital concern for a large majority of organisations (Morgan, Clark and Gooner, 2002). There is heightened interest in measuring and understanding business performance, especially as it relates to market share, product quality, sources of competitive advantage, and industry structure (Deshpandé, Farley and Webster, 1993). The Marketing Science Institute’s (2004) research priorities for 2002-2004 confirmed this, with “Assessing Marketing Productivity and Marketing Metrics” voted as the highest priority topic for academic study. Unfortunately, marketing performance measurement has been criticised for its limited analytic power (Day and Wensley, 1988; Brandt, Gupta and Roberts, 2004), and the variability and excessive number of different measures available and used both by researchers and practitioners (Clark, 1999; Kokkinaki and Ambler, 1999). A consensual measure of performance would promote scholarly investigation, and clarify managerial decisions (Bonoma and Clark, 1988). However, “no other concept in marketing’s short history has proven as stubbornly resistant to conceptualisation, definition, or application” (Bonoma and Clark, 1988, p. 1).

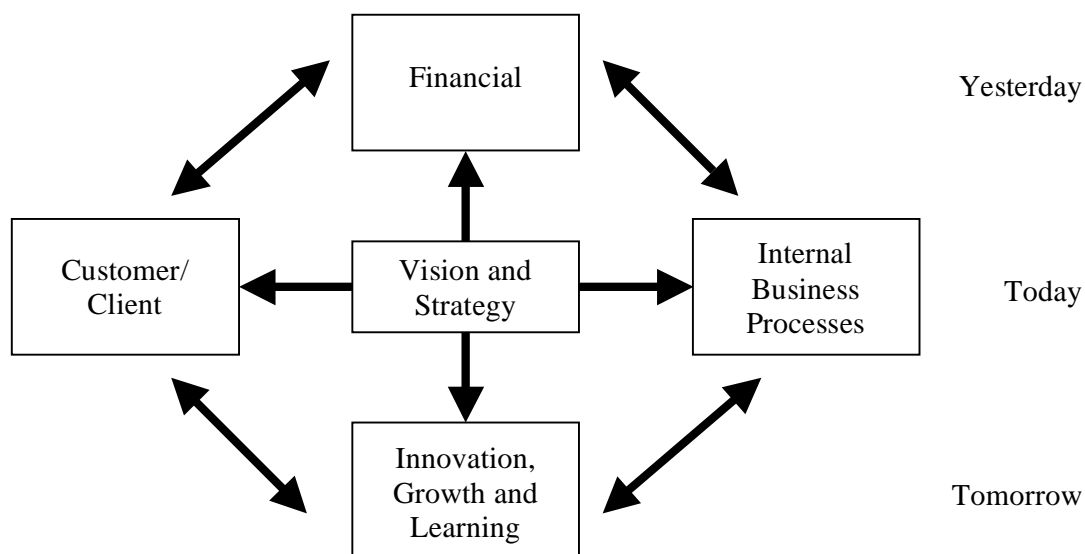
The Balanced Scorecard

Through a comprehensive and critical review of the literature, several unanswered issues have been identified that drive the discussion in this paper: 1) To what extent does the factor structure proposed by Kaplan and Norton (1992) for the BSC remain stable when literature-based performance measures are implemented? 2) What influence does the introduction of an “employee/human resource perspective” have on the original BSC factor structure?

Initial interest in, and conceptual development of, marketing performance measurement was prominent in the 1960s (e.g., Feder, 1965; Sevin, 1965). Since then, numerous empirical and conceptual studies have examined the concept. The BSC was developed and promoted by Kaplan and Norton (1992; 1993; 1996). Researchers such as Atkinson et al. (1997) considered the BSC to be one of the most important developments in management accounting. “The BSC explicitly focuses on links among business decision and outcomes, it is intended to guide strategy development, implementation, and communication” ... whilst providing “reliable feedback for management control and performance evaluation” (Malina and Selto, 2001, p. 47).

Recent data suggested that as of 2001, the BSC had been adopted by 57 per cent of organisations in the UK, and 46 per cent of organisations in the US (Neely, Kennerley and Martinez, 2004). In Germany, Switzerland, and Austria, research has shown that only 26 per cent of firms use the BSC (Speckbacher and Pfeiffer, 2003), whilst in Australia, research has shown that larger firms make more use of BSCs (Hoque and James, 2000). However, the BSC has undergone little empirical research by “marketing academics”, and there is a lack of empirical evidence that explores the performance influence of the BSC (Franco and Bourne, 2003, cited in Neely, Kennerley and Martinez, 2004). The BSC is a conceptual framework, which allows managers to look at their organisations from four perspectives: financial, client/customer, innovation/growth and learning, and internal business processes (as shown in Figure 1), whilst also enabling short-term and long-term goals to be linked (Kaplan and Norton, 1992; Solano, De Ovalles, Rojas, Padua and Morales, 2003).

Figure 1: The Balanced Scorecard



Source: adapted from Kaplan and Norton (1992; 1996)

According to Kaplan and Norton (1992; 1996), the BSC provides answers to four questions: 1) How do customers see us? (customer/client perspective); 2) What must we excel at? (Internal business processes); 3) Can we continue to improve and create value? (innovation/growth and learning perspective); and 4) How do we look to shareholders? (financial perspective).

Users of the BSC assert that it is a powerful means for translating a firm’s vision and strategy into a tool that communicates strategic intent effectively and motivates performance against

established strategic goals (Ittner and Larcker, 1998). Furthermore, the development of the BSC overcame some of the limitations that traditional performance measurement systems had propagated (refer to Ittner and Larcker 1998), by linking them definitively to strategy (Kanji, 2002).

However, researchers have noted that the BSC does not contain an employee / human resources perspective (Olive, Roy and Wetter, 1999; Maltz, Shenhar and Reilly, 2003). Arguably, a human resources perspective is desirable in performance measurement, and it should be related to those human-resource factors which are considered important strategically (Maltz et al., 2003; Neely et al., 2002). Furthermore, the BSC is essentially a conceptual model, and as such, researchers and practitioners have difficulties defining measures, since they are not established clearly (Ahn, 2001). Nevertheless, the original appeal of the BSC approach to total business performance measurement was that it organised measurement under a small set of dimensions of business performance with which any manager can work, arguably (Kaplan and Norton, 1992).

Method

Firstly, as the BSC does not specify which specific measures are to be used, a comprehensive literature review was conducted to identify the most frequently used performance measures by academic researchers. For each BSC component, these were combined to form a multi-item instrument. The instrument was refined following discussions with senior managers and academics, with the instrument reduced finally to 19 items (contact the authors to obtain a listing of questions used). Likert-type statements were used with the scale ranging from 1 = strongly disagree, to 7 = strongly agree, with only the ends of the scale labelled verbally.

Secondly, a sampling frame that consisted of 5,000 larger organisations (more than 100 employees) in various Australian business sectors was purchased from Dun and Bradstreet. Large firms were chosen because they are more likely to make more use of BSCs (Hoque and James, 2000). Marketing executives, directors or managers were selected as respondents due to their knowledge of organisational operations. A dual-method survey approach was utilised. An electronic equivalent questionnaire was created and placed online, thereby enabling all respondents who received a postal invitation to participate to respond either via the post or online. A password was utilised to eliminate unwanted respondents and secure the site. An offer of a managerial report summarising the research findings was utilised as an incentive, and two weeks following the initial mail out, all 5,000 respondents were posted a reminder. Of the 5,000 questionnaires distributed, 437 usable questionnaires were returned (384 via post and 53 online). Five hundred questionnaires were returned with a "Return to Sender" message. In addition, 119 responses were received declining the invitation to participate, due to issues such as company policy or lack of time. Consequently, a response rate of approximately 10 per cent was achieved.

Data Analysis

Response bias was investigated to see if the firms responding to this survey differed from those that did not respond. The responses of the first 50 respondents were compared with the responses of the last 50. The chi-square tests conducted on both the industry sector ($p = 0.18$) and the total number of employees ($p = 0.32$) did not indicate any significant difference

between first and last responses, indicating that the level of non-response bias was likely to be small and insignificant, and that the response sample is a reasonable representation of the Australian organisations in the sampling frame. The issue of missing data was investigated via SPSS 11.0, with the results showing that nine per cent of the data were missing, with this being under the maximum acceptable level of 25 per cent (Byrne, 2001). Nevertheless, all cases with any missing data were removed, leaving 398 complete questionnaires which were utilised.

Confirmatory factor analysis (CFA) was run using AMOS 4.0, firstly on a four-factor BSC model, which consisted of 15 items, and then secondly, on the five-factor 19-item BSC model which included the “employee / human resources perspective”. The fit statistics for the four-factor model were: $\chi^2 = 535.65$, $p = 0.001$, $df = 84$, $GFI = 0.85$, $CFI = 0.82$, $TLI = 0.78$, $RMSEA = 0.11$; whilst for the five-factor model they were: $\chi^2 = 722.13$, $p = 0.001$, $df = 142$, $GFI = 0.84$, $CFI = 0.83$, $TLI = 0.80$, $RMSEA = 0.10$. Based on these results, both factor models are unacceptable according to Byrne (2001).

Consequently, exploratory factor analysis was conducted on both factor structures in an attempt to identify better fitting models. Following the analysis, indicators were removed from both models and the CFA was re-run, and the AMOS output files were inspected for any warnings related to under-identification, over-identification or non-admissibility. No warnings were stated. The standardised results are presented in Figures 2 and 3 and the fit statistics for the four-factor model are as follows: $\chi^2 = 151.69$, $p = 0.000$, $df = 38$, $GFI = 0.94$, $CFI = 0.94$, $TLI = 0.92$, $RMSEA = 0.08$. The fit statistics for the five-factor structure model are as follows: $\chi^2 = 237.51$, $p = 0.000$, $df = 67$, $GFI = 0.92$, $CFI = 0.93$, $TLI = 0.91$, $RMSEA = 0.08$. Both model fits improved compared to the original models, but according to Byrne (2001), the results can be considered between marginal and acceptable, although according to Schumacker and Lomax (1996), the results are of an acceptable level. Fit indices have no single statistical test of significance that identifies a correct model given the sample data (Schumacker and Lomax, 1996). Many of the goodness-of-fit criteria have been formulated to range in value from 0 (no fit) to 1 (perfect fit), with many researchers using a goodness-of-fit value of 0.90 or higher as the criterion for acceptable fit (Byrne, 2001). Nevertheless, the five factor model with the inclusion of an “employee / human resource perspective” does display a similar fit to the four factor model and in turn supports the Maltz et al. (2003) and Olve et al. (1999) position on its inclusion in the BSC.

Conclusion, Research Limitations and Implications for Future Research

With the BSC being used widely, more empirical research from marketing academics should be undertaken. The present findings suggest that the five-factor model fits the observed data as well as does the four-factor model, supporting the inclusion of an “employee / human resource” perspective in future BSC models. However, fit statistics are “marginally acceptable” so the results have to be viewed with some caution until further confirmatory research is conducted. It is important to note a limitation of this study, namely that data were collected within one country, meaning that findings are not necessarily representative of different world markets. Finally, the general Kaplan and Norton assertion that the BSC should be customised for each context casts doubt on the feasibility, or even the desirability, of trying to develop standardised BSC instruments, but this should not be taken as a reason for not investigating the structure of actual BSC instruments, albeit that a wide variety of modified instruments may have to be examined and compared.

Figure 2: Confirmatory Factor Analysis of the BSC Four-Factor Model

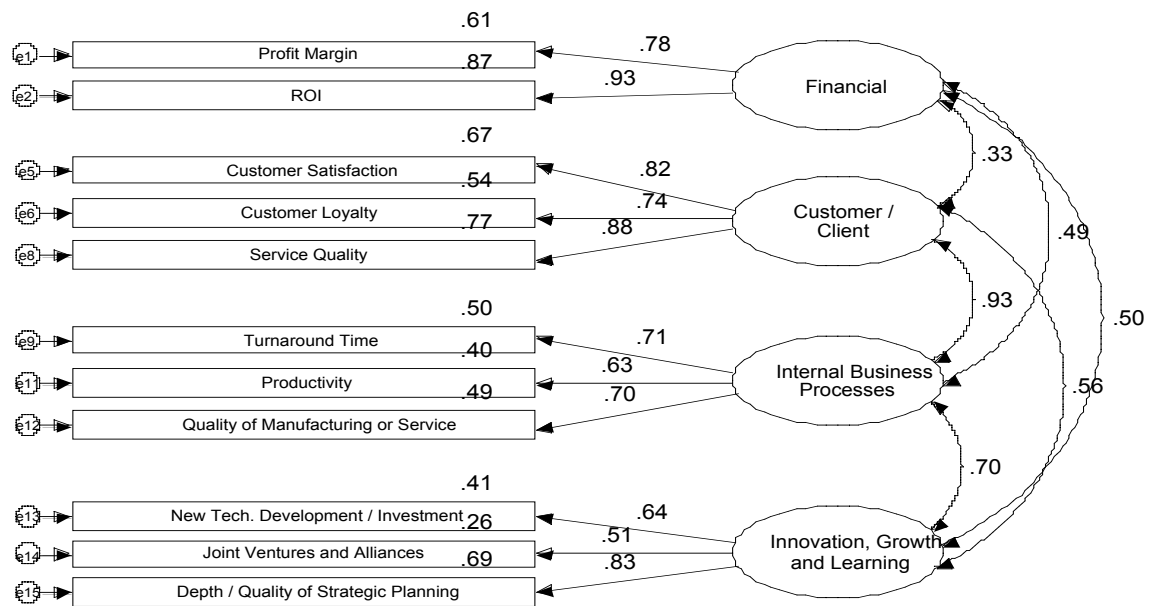
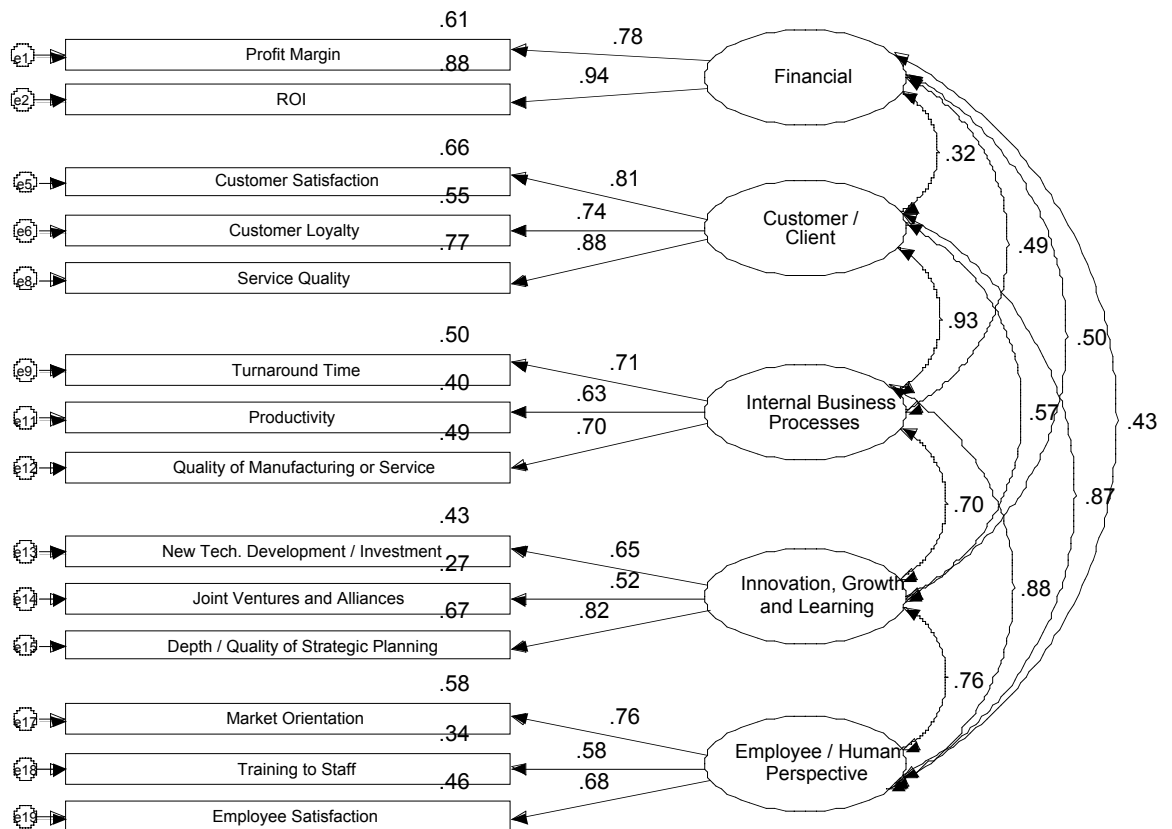


Figure 3: Confirmatory Factor Analysis of the BSC Five-Factor Model



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