



## 20 years of studies on the balanced scorecard: Trends, accomplishments, gaps and opportunities for future research



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### A B S T R A C T

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Robert Kaplan and David Norton introduced the Balanced Scorecard in their 1992 *Harvard Business Review* article. 2012 marks 20 years since that article. This anniversary has motivated me to review the state of research on the balanced scorecard, to highlight gaps in that research and to outline some ideas for further research. To this end, I reviewed 114 articles published in 25 accounting journals and 67 articles in business and management journals in the period 1992–2011. The findings of this literature review are presented in three parts. First, the reviewed articles are categorised by topics, research settings, theories, research method, and primary data analysis techniques. Second, the contributions of research to the field and the lessons learned from these studies are discussed. Third, knowledge gaps in existing balanced scorecard research are identified, leading to consideration of several ideas for future research. The last section offers my final remarks.

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### 1. Introduction

2012 marks 20 years since the first publication of the balanced scorecard article by Robert Kaplan and David Norton in the January–February issue of *Harvard Business Review*. After a year's research activity inside 12 companies, Kaplan and Norton (1992) disseminated their findings through a performance measurement framework which they developed and called the *Balanced Scorecard*. Kaplan and Norton's original version of the balanced scorecard expanded on mere financial performance measures and incorporated operational performance measures categorised by three perspectives: customer satisfaction, internal business processes, and innovation and learning. Following that article, and examining more than 300 organisations, Kaplan and Norton produced a series of articles (Kaplan, 2009; Kaplan & Norton, 1993, 1996a, 1996b, 2000, 2001a, 2001b, 2004a, 2006a, 2008a) and several books (Kaplan & Norton, 1996c, 2001c, 2004b, 2006b, 2008b) to advance the knowledge base of the balanced scorecard. About 15 years ago, in a review essay, Atkinson, Balakrishnan, Booth, Cote, Grout, Mali, Roberts, Ulan, & Wu noted that “the balanced scorecard is among the most significant developments in management accounting and thus, deserves intense research attention” (1997, p. 94). In its 20 years of existence the balanced scorecard has generated enormous interest in academic and industrial communities (Barnabe & Busco, 2012; Kraus & Lind, 2010; Malina, Norreklit, & Selto, 2007; Norreklit, Norreklit, Mitchell, & Bjomenak, 2012; Salterio, 2012).

The 20th anniversary of the balanced scorecard provides the opportunity to explore the status of related research from 1992 to 2011. Several notable prior reviews<sup>1</sup> of the management accounting research (e.g., Chenhall, 2003, 2009; Chenhall & Smith,

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<sup>1</sup> This list is illustrative, not exhaustive.

2011; Hesford, Lee, der Stede, & Young, 2009; Langfield-Smith, 2008; Merchant & Otley, 2007; Selto & Widener, 2004; Shields, 1997; Wagenhofer, 2006) have provided useful insights into the role of management accounting and performance measurement systems in organisations, yet these reviews have not taken the balanced scorecard as their primary focus. My aim here is to expand upon these previous reviews and to contribute to the performance management research literature in the following way. First, I tabulate, review, and synthesise studies related to the balanced scorecard published in accounting, business and management journals. Using this summative account of published research, I discuss how prior balanced scorecard studies have contributed to the field. Next, I identify gaps in published research, which suggest some opportunities for future research. In the final section, I offer my conclusion. My review in this article will provide future balanced scorecard researchers with much food for thought, leading to a “new” knowledge base for the balanced scorecard research field.

## 2. Review approach

In this review, I used 25 highly ranked<sup>2</sup> accounting journals and 46 highly ranked business and management journals (see [Appendices A and B](#)). I also utilised the Google search engine to locate additional publications on the balanced scorecard. I browsed those publications, determined their relevance and then further downloaded the relevant ones. To be more up to date, I also searched for recent articles published during 2012. From the outset, the focus of my review was on publications that explicitly concentrated on the balanced scorecard. The search began using the terms “Balanced Scorecard”, “Balanced Business Scorecard”, “Scorecard”, “BSC”, and was based on articles published by an individual journal and available on its web homepage. The initial results revealed several articles without direct connection to the precise review requirements, as it picked up all articles that contained the words “balanced”, “business”, or “scorecard”. Therefore another round of searching was carried out on these articles using the same terms in the search bar in the PDF version of the individual article, and then physically examining them to determine the extent to which they carried insights and experiences related to the balanced scorecard.

Following the framework of [Shields \(1997\)](#) which was also used by [Chenhall and Smith \(2011\)](#) and [Hesford et al. \(2009\)](#), the published articles were classified by (a) topics, (b) research settings, (c) research theories, (d) research methods, and (e) primary data analysis techniques. I used percentages relating to all these five categories. I then reviewed the selected articles presented in [Appendices C and D](#) to illustrate the state of knowledge on the balanced scorecard. Based on this exercise, I identified several central themes, namely theory and research methods; economic benefits and performance improvement; decision-making usefulness; strategic communication; role of consultants; gaining external legitimacy; strategic alignment; and causal-chain focus and pitfalls of the balanced scorecard. These themes are not exhaustive. For example, there is little on organisations’ actual use of the balanced scorecard, how they use it, and what they think of it. Nevertheless, I believe this review identifies important issues pertinent to those interested in balanced scorecard practice, will help detect gaps in the knowledge base surrounding the balanced scorecard, and will recommend some new directions for future research. [Fig. 1](#) presents the review approach used.

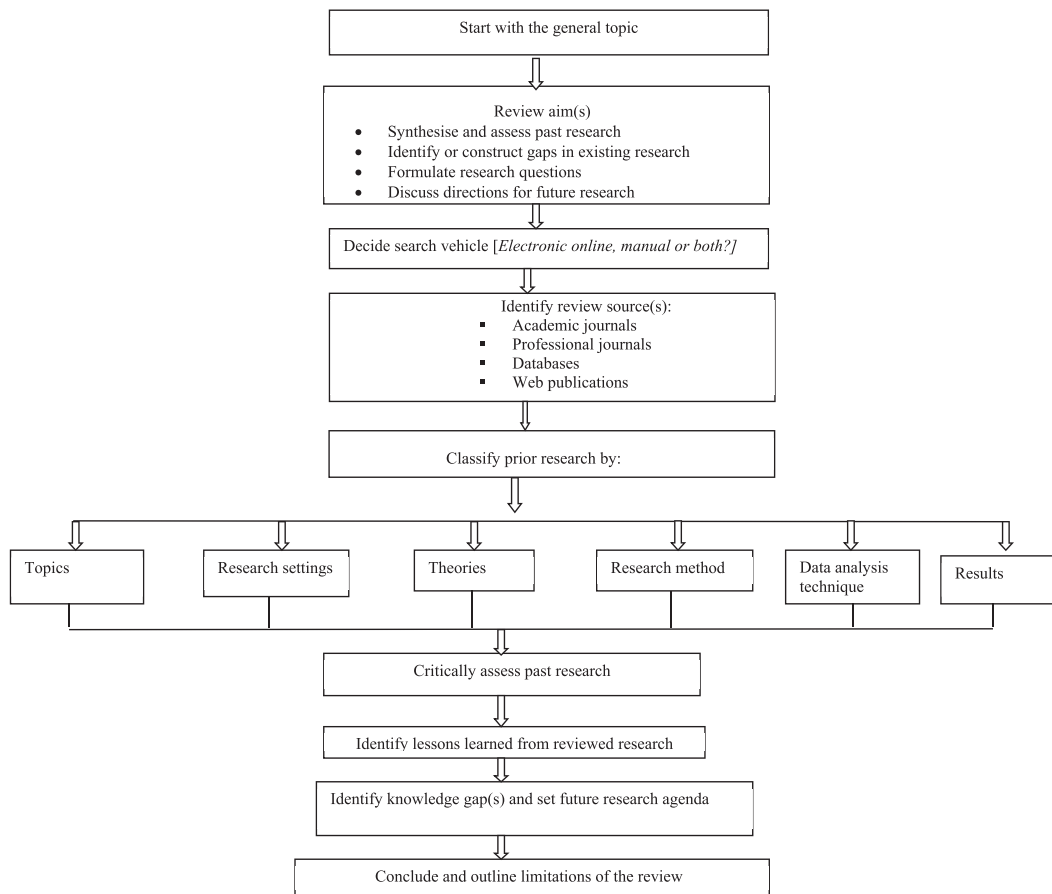
Before presenting my review findings, I briefly outline the conceptual foundations of the balanced scorecard developed by Kaplan and Norton since its introduction in the literature.

## 3. Conceptual foundations of the balanced scorecard

In the late 1980s, many scholars expressed concern about traditional performance measures that focused solely on financial metrics ([Johnson & Kaplan, 1987](#); [Kaplan & Norton, 1992](#); [Lynch & Cross, 1991](#)). Scholars prior to Kaplan and Norton (e.g., [Berliner & Brimson, 1988](#); [Bromwich & Bhimani, 1989](#); [Johnson, 1988](#); [McNair, Lynch, & Cross, 1990](#)) criticised such measures for encouraging managers to focus on short-term financial results while sacrificing long-term prospects. These and other scholars (such as [Lynch & Cross, 1991](#); [Merchant, 1985](#)) promoted the idea that in addition to financial measures of performance, non-financial measures such as on-time deliveries, process cost reduction, quality, cycle time, and product complexity would benefit organisations in the longer term (for good coverage of these ideas, see [Chenhall & Langfield-Smith, 2007](#)). The idea of linking measures to strategy is also not unique to the balanced scorecard. [McNair et al. \(1990\)](#) introduced a performance pyramid in which the vision of the “balance” was incorporated into the financial and non-financial measures of performance. [Grady \(1991\)](#) also stated that the strategic objective of a company ought to be broken down into critical success factors and critical actions. Furthermore, the French are known to have used a rather similar system called *Tableaux du Bord*<sup>3</sup> for decades (for details, see [Epstein & Manzoni, 1998](#); [Lebas, 1994, 1996](#)).

<sup>2</sup> As in other reviews ([Chenhall & Smith, 2011](#); [Shields, 1997](#)), I applied some subjective criteria in my selection of journals for review. I used three journal rankings lists: a) the 2010 Australian Business Deans Council (ABDC), b) the 2010 Excellence in Research for Australia (ERA) of the Australian Research Council (ARC), and c) the 2010 Association of Business Schools (ABS) in the UK. The ABDC and ERA lists rank “Best or leading journals in its field” as “A” and “Highly regarded journal in the field or sub-field” as “A”. In the ABS list, a world elite journal is denoted by “4\*”, a top journal is denoted by “4”, a highly regarded journal by “3” and a well-regarded journal by “2”. Restricting the sample to articles published in highly ranked journals was based on [Shields’ \(1997\)](#) argument for “sample homogeneity.” These selected journals provided homogeneity because of their similarity in editorial scope, styles, policies, and the composition of the editorial board.

<sup>3</sup> *Tableau du bord* means dashboard, which allows managers to operate the system or systems under their control ([Lebas, 1996](#), cited in [Atkinson et al., 1997](#), p. 93).



**Fig. 1.** Literature review approach.

Using ECI Company's performance measurement practice, in 1992 Kaplan and Norton introduced the idea of combining financial and non-financial (customer, internal business, and innovation and learning) perspectives in a single performance scorecard model, the Balanced Business Scorecard. In their subsequent publications, Kaplan and Norton omitted the word "Business" from the model, which is now commonly known as the Balanced Scorecard. Following their inaugural article, Kaplan and Norton developed their original balanced scorecard idea further into several publications and marketed it widely. In their book, *The Balanced Scorecard: Translating Strategy into Action* (1996c), they re-classified two of the four original perspectives from the 1992 article: the *Internal business perspective* was re-labelled *Internal business processes*, with the addition of the *Innovation* element, and the *Innovation and learning perspective* was re-labelled *Learning and growth*, with the additional element of *growth* and removal of the *innovation* element (see Figure 1-1 in Kaplan & Norton, 1996c, p. 9 for the revised structure). The 1996 version of the balanced scorecard differed further from the 1992 version in that it contained outcome measures and the performance drivers of outcomes, linked together in cause-and-effect relationships, making the performance measurement system a feed-forward control system. Kaplan and Norton (1996c, p. 31) outlined the following causal relationship: "measures of organizational learning and growth → measures of internal business processes → measures of the customer perspective → financial measures" (cited in Nørreklit, 2000, p. 68), with the nature of relationship following the direction of the arrows.

In their subsequent work, Kaplan and Norton (2008a, 2008b) emphasised the link between scorecard measures and an organisational strategy map. They outlined how an organisation can establish strong linkages from strategy to operations so that employees' everyday operational activities will support organisational strategic objectives. Table 1 provides a snapshot of the historical development of the balanced scorecard.

The development of the balanced scorecard outlined in Table 1 highlights the diversity of ideas around its philosophy. Most recently we find a more comprehensive strategy map approach to measure, monitor, and manage performance and operations of an organisation in order to survive in today's rapidly changing business landscape. This change in the original conceptual framework was influenced by Kaplan and Norton's own field research in various settings as well as other commentaries on the balanced scorecard (e.g., Atkinson et al., 1997; Nørreklit, 2000, 2003). According to Kaplan: "This most recent development is about much more than just the balanced scorecard. It embeds the 1992 original Balanced Business

**Table 1**  
Development of the balanced scorecard concept by Kaplan and Norton.

Year/paper type	Publication title	Key areas covered
1992/Article	The balanced scorecard—measures that drive performance	<ul style="list-style-type: none"> <li>■ Introduction of balanced scorecard as a foundation for development</li> <li>■ Balanced scorecard is a superior performance measurement that uses both financial and non-financial measures</li> <li>■ Identification of the four perspectives: financial; customer; internal business; innovation and learning</li> </ul>
1993/Article	Putting the balanced scorecard to work	<ul style="list-style-type: none"> <li>■ Balanced scorecard is forward-looking (long-term performance)</li> <li>■ Balanced scorecard is not only a measurement exercise, it is also a management system to motivate breakthrough improvement</li> <li>■ Balanced scorecard has greatest impact when used to drive a change process</li> <li>■ Identification that transparency is critical to a successful balanced scorecard</li> <li>■ Measures on balanced scorecard must be specifically designed to fit firm's mission, strategy, technology, and culture</li> </ul>
1996/Book	The balanced scorecard: Translating strategy into action	<ul style="list-style-type: none"> <li>■ Balanced scorecard has evolved from a measurement system to a strategic management system</li> <li>■ Identification of four major steps in successful balanced scorecard implementation</li> <li>■ Reclassification of "internal business process" and "learning and growth", shifting innovation to internal business processes and adding growth element to employee learning</li> <li>■ Measures are linked to each other in a causal relationship, unlike before, linked to strategy and vision</li> </ul>
2001/Book	The strategy-focused organisation: How balanced scorecard companies thrive in the new competitive environment	<ul style="list-style-type: none"> <li>■ Translating the strategy to operational terms: building strategy maps</li> <li>■ Aligning the organisation to create synergies: creating business unit synergy</li> <li>■ Making strategy everyone's everyday job: creating strategic awareness, defining personal and team objectives, the balanced paycheck</li> <li>■ Making strategy a continual process: planning and budgeting, feedback and learning</li> <li>■ Mobilising change through executive leadership</li> </ul>
2004/Book	Strategy maps: Converting intangible assets into tangible outcomes	<ul style="list-style-type: none"> <li>■ Visually map strategy</li> <li>■ A visual cause-and-effect explanation of what's working and what's not, in a way that everyone in the company can understand</li> <li>■ Helps get the entire organisation involved in strategy</li> </ul>
2006/Book	Alignment: Using the balanced scorecard to create corporate synergies	<ul style="list-style-type: none"> <li>■ Alignment: a source of economic value</li> <li>■ Corporate strategy and structure</li> <li>■ Aligning financial and customer strategies</li> <li>■ Aligning internal process and learning and growth strategies: integrated strategic themes</li> <li>■ Cascading: the process</li> <li>■ Aligning boards and investors</li> <li>■ Aligning external partners</li> <li>■ Managing the alignment process</li> <li>■ Total strategic alignment</li> </ul>

Scorecard model as a component within a comprehensive management system that integrates strategy and operations" (2009, p. 1265). In their series of publications on the balanced scorecard, Kaplan and Norton argued that the recent balanced scorecard model provides a richer, more holistic view of the organisation, and that the model can be used with any selection of perspectives appropriate to a particular exercise<sup>4</sup> (for more detail see also Dechow, 2012; Kaplan, 2012).

#### 4. Balanced scorecard studies published in accounting journals

Here, I examine the 114 articles published in 25 accounting journals that deal with the balanced scorecard.

##### 4.1. Frequency distribution of articles by accounting journals

Table 2 presents the frequency distribution of articles on the balanced scorecard published by 25 accounting journals. During the two decades under study, 98 of the 114 articles (85.96%) on the subject were published in the second half (2002–2011). No articles on the balanced scorecard were published between 1992 and 1996, primarily because of its early stage in practice. Overall, the highest number of articles (24) appeared in MAR,<sup>5</sup> one of the premier journals in management accounting, followed by FAM (20). A sizeable number of articles appeared in other journals: experimental research and surveys in AOS (10), TAR (5), BRIA (4), and JMAR (5); interview studies and descriptive articles in CPA (9); and descriptive and

<sup>4</sup> [http://www.brefigroup.co.uk/consultancy/balanced\\_business\\_scorecard.html](http://www.brefigroup.co.uk/consultancy/balanced_business_scorecard.html) (accessed 16th November 2012).

<sup>5</sup> Refer to Appendices A and B for the journal titles.

**Table 2**  
Frequency distribution of articles published on the balanced scorecard by accounting journals.

Journal	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
MAR	0	4	10	10	24	21%
FAM	0	1	7	12	20	17.5%
AOS	0	0	5	5	10	8.7%
CPA	0	0	6	3	9	7.8%
JAEd	0	3	2	3	8	7%
EAR	0	0	0	6	6	5.2%
TAR	0	1	3	2	5	4.3%
JMAR	0	2	0	3	5	4.3%
BAR	0	0	2	2	4	3.5%
BRIA	0	0	2	2	4	3.5%
IIAEd	0	3	0	1	4	3.5%
ADIC	0	0	0	3	3	2.6%
AAAJ	0	0	1	1	2	1.7%
CAR	0	0	0	2	2	1.7%
JAR	0	0	0	2	2	1.7%
ABACUS	0	0	0	2	2	1.7%
AH	0	2	0	0	2	1.7%
JAPP	0	0	0	1	1	0.8%
A & F	0	0	0	0	0	0%
ABR	0	0	0	0	0	0%
JAE	0	0	0	0	0	0%
JAAF	0	0	0	0	0	0%
JBFA	0	0	0	0	0	0%
RAS	0	0	0	0	0	0%
TIJA	0	0	0	0	0	0%
Total	0	16	38	60	114	100%

literature reviews in JAEd (8). However, caution must be used in interpreting the frequency data since some journals such as AOS and MAR publish more issues per year than others (Chenhall & Smith, 2011).

Table 2 further depicts that during the period under study, some leading journals published no articles on the balanced scorecard. These journals were A&F, ABR, JAE, AH, JAAF, JBFA, RAS, and TIJA. My review of the editorial policies of these outlets indicates that although these journals encouraged submissions from any relevant area and with no constraint on research methodologies, authors might have avoided the journals for possible publication. There was little or no track record of their publishing management accounting studies relating to the balanced scorecard that predominantly deployed surveys and qualitative case studies.

#### 4.2. The research topics

Table 3 shows the frequency distribution of balanced scorecard topics for the 114 articles published during the period under study. More than 23% of all articles on the balanced scorecard in the 25 accounting journals (27 out of 114) focused on its use in decision making. About 21% (24) were in the areas of adoption and implementation, 20.1% (23) were on diffusion of the balanced scorecard, and about 10.5% (12) were on organisational effectiveness. Others focused on review and critical analysis (6.1%), impacts on employees' mental states (3.5%), incentive plans (2.6%), and causal relationship effects (0.8%).

Overall, the distribution of past studies represented by the 114 articles indicates a heavy emphasis on the design, implementation and use aspects of the balanced scorecard. Although future research might explore these aspects further in different contexts, there might also be increasing interest in linking these aspects with other organisational strategies or processes such as total quality management (Hoque, 2003), operations management (Kaplan, 2009), time-driven activity-based costing (Kaplan & Anderson, 2004, 2007), supply-chain relationships, IT, business-process-management, and value chain analysis. With the exception of Cheng and Humphreys (2012) researchers have paid little attention to recent concepts around the balanced scorecard such as “strategy map”, “strategy execution”, and “total strategic alignment”.

#### 4.3. The research settings

The popular choices of settings for balanced scorecard studies were services (12.2%), manufacturing (10.5%), marketing and retailing (9.6%), and publicly traded firms (9.6%). About 20% of the reviewed articles (23 out of 114) did not explicitly mention the research setting (Table 4). Further analysis revealed that this group included mainly descriptive studies.

Balanced scorecard research was also widely diffused in the public sector. Table 4 shows that 23 articles focussing on the public sector were published, covering local government/municipalities (10) and government departments/agencies (13). Only two studies focused on not-for-profit/non-government organisations. Most of these publications appeared in FAM, a

**Table 3**

Frequency distribution of articles on the balanced scorecard published in accounting journals by topics.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Uses in decision making	0	3	10	14	27	23.6%
Adoption/implementation	0	3	7	14	24	21%
Diffusion of the balanced scorecard	0	3	9	11	23	20.1%
Balanced scorecard (general) <sup>a</sup>	0	3	6	4	13	11.4%
Organisational effectiveness	0	2	2	8	12	10.5%
Review and critical analysis	0	2	3	2	7	6.1%
Impacts on employee mental states	0	0	1	3	4	3.5%
Employee incentive plans	0	0	0	3	3	2.6%
Cause–effect relationships	0	0	0	1	1	0.8%
Total	0	16	38	60	114	100%

<sup>a</sup> Includes descriptive and conceptual articles.**Table 4**

Frequency distribution of articles on the balanced scorecard published in accounting journals by research settings.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Accounting firms	0	1	0	1	2	1.79%
Services private sector (banking, insurance, airlines, telecommunication)	0	0	8	6	14	12.2%
Government departments/agencies	0	0	6	7	13	11.4%
Manufacturing	0	2	3	7	12	10.5%
Marketing and retailing	0	1	5	5	11	9.6%
Publicly traded listed companies	0	1	3	7	11	9.6%
Local governments/municipalities	0	1	1	8	10	8.7%
Private hospitals/healthcare	0	1	0	5	6	5.2%
Not-for-profit/non-government organisations	0	2	0	0	2	1.7%
Nil/not stated	0	7	6	10	23	20.1%
Other <sup>a</sup>	0	0	6	4	10	8.7%
Total	0	16	38	60	114	100%

<sup>a</sup> Includes reviews, commentaries and articles offering practical insights.

leading specialized journal for public sector and not-for-profit fields. Of the 114 published articles in 25 leading accounting journals, only 5 reported on balanced scorecard practices in developing or emerging nations.

#### 4.4. The research theories

Of the 114 articles published, 65 articles (57.1%) engaged a wide range of theories. Thirty-three articles (28.9%) were silent about their theoretical orientation, whereas 16 articles (14%) claimed to use various strands of management accounting literature, models and frameworks, without acknowledging any explicit theoretical lens (Table 5). With regard to the use of theory, economics,<sup>6</sup> mainly principal–agent (2.6%), organisational behaviour (6.1%), contingency theory (7.8%), institutional theory (7.8%), multiple theories<sup>7</sup> (6.1%) and psychological theories<sup>8</sup> (7.8%) were used to provide insight into balanced scorecard practices.

Table 5 shows that the articles published in the period 1992–1996 did not draw upon any theories. Most of these publications were by Kaplan and Norton and focused on developing and refining the concepts of the balanced scorecard. Subsequently (since 1997) scholars became interested in understanding balanced scorecard practices using a wide range of theoretical perspectives. Indeed, most academic journals do not accept manuscripts with inadequate or no theory.

#### 4.5. The research methods

The data presented in Table 6 reveal that case/field<sup>9</sup> study methods were the most frequently used, with 34 articles (29.8%). This was followed by experimental method (15.7%), surveys (15.7%) and analytical methods (14.9%), which accounted for 18, 18 and 17 articles respectively. A total of 10 articles (8.7%) used mixed methods, a combination of qualitative and quantitative methods such as interviews and surveys.

<sup>6</sup> Economic theories included articles relying on industrial organisation, microeconomics, and agency theory (Hesford et al., 2009).

<sup>7</sup> The most frequently used multiple theories were (a) technical rational choice theory with institutional theory and (b) resource dependence theory with new institutional sociology theory.

<sup>8</sup> Psychology theories included social psychology and cognitive psychology.

<sup>9</sup> Hesford et al. (2009) distinguished field from case studies, explaining that case studies involve investigation of a phenomenon within a single organisation whereas field studies involve enquiry about a phenomenon within two or more organisations.

**Table 5**  
Frequency distribution of articles on the balanced scorecard published in accounting journals by theory.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Economics	0	1	5	5	11	9.6%
Psychology	0	1	2	6	9	7.8%
Institutional	0	0	0	9	9	7.8%
Organisational behaviour	0	1	3	3	7	6.1%
Contingency	0	2	2	3	7	6.1%
Multiple/theory, triangulation	0	0	4	3	7	6.1%
Agency	0	0	0	3	3	2.6%
Stakeholder theory	0	0	0	3	3	2.6%
Actor-network theory	0	0	0	2	2	1.7%
Supply-side perspective	0	1	1	0	2	1.7%
Critical (general)	0	0	1	0	1	0.8%
Cultural (national and organisational)	0	0	0	1	1	0.8%
Innovation diffusion (attributes, fad and fashion)	0	0	0	1	1	0.8%
Historical	0	0	0	1	1	0.8%
Constructivist approach	0	0	1	0	1	0.8%
Other <sup>a</sup>	0	6	6	11	16	14.0%
None <sup>b</sup>	0	4	13	9	33	28.9%
Total	0	16	38	60	114	100%

<sup>a</sup> Includes papers that used various models/frameworks (e.g., Cobb, Helliard, & Innes, 1995) and literature sources (e.g., strategic management, value-based management, management accounting systems) without disclosing the actual theory behind the model.

<sup>b</sup> Includes mainly descriptive papers, commentaries and reviews.

A large number of the articles used quantitative research methods. The most common method was a mailed-out survey of questionnaires, as seen in studies by Hoque and James (2000), Ittner and Larcker (1998), Maiga and Jacobs (2003) and Speckbacher, Bischof, and Pfeiffer (2003).

Speckbacher et al. (2003) used questionnaires to examine the state of balanced scorecard implementation in German-speaking countries. Maiga and Jacobs (2003) collected survey data from 83 U.S. manufacturing business units to examine the complementary effects of the balanced scorecard and activity-based costing on organisational performance. During the period under review, AOS, FAM, JMAR and MAR published articles that used surveys, but A&F, CAR, TAR, JAE, RAS, and TIJA did not publish survey-based findings on the balanced scorecard. Most of these journals tend to publish papers that rely heavily on experimental design or archival data. In survey-based studies, balanced scorecard practice in organisations was operationalised using 1–5 or 1–7-point Likert-type scales, where the lower end (1) indicates the low adoption or low use whereas the upper end (5 or 7) indicates the high adoption or high use of the balanced scorecard in organisations.

To obtain an in-depth understanding of the adoption of the balanced scorecard in the organisational context, researchers have also chosen qualitative approaches such as face-to-face interviews, participant observation and content analysis. For instance, Kasurinen (2002) used a longitudinal case study approach focussing on the introduction of the balanced scorecard in one organisation. Akkermans and Oorschot (2005) utilised a case study approach of qualitative causal loop diagramming followed by quantitative simulation to understand doubts regarding the quality of balanced scorecards. Malina and Selto (2001) investigated the effectiveness of the balanced scorecard using semi-structured interviews along with archival data. Malmi (2001) also utilised semi-structured interviews to explore how Finnish companies applied the balanced scorecard concept. Further analysis of the qualitative studies reveals that some organisations explicitly used the term “balanced scorecard” in their day-to-day operation. Others used balanced scorecard type measures, on which basis researchers tended to categorise them as balanced scorecard adopters or users.

A number of studies used behavioural experiments to test their hypotheses. Lipe and Salterio (2000) conducted an experiment with 58 1st-year MBA student participants to test whether performance evaluators relied more on common or unique measures. Using an experimental study with 81 MBA students as participants, Roberts, Albright, and Hibbets (2004)

**Table 6**  
Frequency distribution of articles on the balanced scorecard published in accounting journals by research methods used (1992–2011).

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Case/field study	0	5	8	21	34	29.8%
Survey	0	1	5	12	18	15.7%
Behavioural experiment	0	1	6	11	18	15.7%
Analytic <sup>a</sup>	0	4	10	3	17	14.9%
Mixed methods	0	2	4	4	10	8.7%
Action research	0	0	2	2	4	3.5%
Archival	0	0	1	3	4	3.5%
None	0	3	2	4	9	7.8%
Total	0	16	38	60	114	100%

<sup>a</sup> Includes research based on principal agent and production economic theories and models.

**Table 7**

Frequency distribution of articles on the balanced scorecard published in accounting journals by primary data analysis technique.

Years	1992-1996	1997-2001	2002-2006	2007-2011	Total	Total %
Qualitative:						
Interview quotes	0	4	8	22	34	29.8%
Content analysis	0	0	1	1	2	1.7%
Archival analysis	0	0	0	2	2	1.7%
Participation/observation	0	0	1	0	1	0.9%
Grounded theory	0	0	0	0	0	0%
Quantitative:						
Regression/ANOVA/MANOVA	0	2	7	10	19	16.7%
Descriptive statistics/correlations	0	0	5	5	10	8.7%
Mixed methods (qualitative and quantitative)	0	1	3	6	10	8.7%
Other <sup>a</sup>	0	0	2	6	8	7.0%
PLS/SEM/Path analysis	0	0	2	4	6	5.2%
Nil <sup>b</sup>	0	9	9	4	22	19.2%
Total	0	16	38	60	114	100%

<sup>a</sup> Other includes studies that used econometrics models, non-parameter bootstrap method, matched pair design, cross-sectional data and cluster analysis.

<sup>b</sup> Includes mainly articles that provided descriptive analysis and reviews.

examined whether disaggregating the balanced scorecard resulted in evaluations consistent with the intent of the balanced scorecard approach. Libby, Salterio, and Webb (2004) examined the effect of assurance and process accountability on managerial judgement using the balanced scorecard. Similarly, Tayler (2010) used an experiment to assess the effects of implementation involvement and a causal-chain focus on the balanced scorecard as a strategy-evaluation tool. In a more recent article in TAR, Cheng and Humphreys (2012, p. 899) assessed the differential improvement effects of two key balanced scorecard framework elements. They are (a) causal linkages between strategic objectives in the strategy map, and (b) performance measures categorised by balanced scorecard perspectives on managers' ability to interpret the strategic relevance of external information and use this information to evaluate the appropriateness of an organisation's strategy.

An aim of the analytical approach is to increase the level of clarity and precision in the meaning of the concepts used in a model (Shields, 1997). This is necessary, not only for the purpose of evaluating the model but also to make the model useful and to develop it (Wilson, 1969). Adopting the methodology of Wilson's analytical approach, Nørreklit (2000) analysed some of the key assumptions and relationships of the balanced scorecard. She sought to increase the clarity and precision in the concepts used in the balanced scorecard and, in addition, to suggest more valid concepts.

#### 4.6. The primary data analysis techniques

In keeping with the high use of case/field study methods, analysis of verbatim interview data was the most widely used data analysis method (29.8% of 114 articles) (see Table 7). Quantitative analysis encompassing multiple regressions and ANOVA/MANOVA (16.7%), descriptive statistics (8.7%), and PLS/SEM and path analysis (5.2%) were the choices of other researchers. A significant number of articles (19.2%), which were primarily of a review or commentary nature, made no mention of the data analysis method.

### 5. Balanced scorecard studies published in business and management journals

Business and management research has also established a strong tradition in researching balanced scorecard practices in various settings. As with the accounting studies, in this section I present a review of balanced scorecard articles published by business and management journals.

#### 5.1. Frequency distribution of publications by journals

Table 8 lists the number of articles on the balanced scorecard published in various business and management journals in the period 1992–2011. I reviewed 67 articles published in 46 leading business and management journals; among them the highest number of articles was found in HBR, the journal which promoted the balanced scorecard in its early days. HBR published 11 of the 12 articles that appeared in business and management journals in the first 5 years (1992–1996). The next most popular journal was LRP, which carried 10 balanced scorecard articles (14.9%). Certain other journals such as CMR, HRM, HRMJ, and IJOPM also featured articles on the balanced scorecard. Table 8 also shows that several journals published no articles on the balanced scorecard. Several factors would affect this trend, including editorial policy and quality of submissions received.



**Table 8**  
Frequency distribution of articles on the balanced scorecard classified by business and management journals.

Journal	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
HBR	11	5	7	4	27	40.2%
LRP	0	2	5	3	10	14.9%
HRM	0	3	1	0	4	5.9%
HRMJ	0	0	2	2	4	5.9%
CMR	1	1	1	0	3	4.5%
IJOPM	0	0	2	1	3	4.5%
OMEGA	0	0	0	3	3	4.5%
SDR	0	0	0	2	2	3.0%
JMIS	0	1	0	0	1	1.5%
AJM	0	0	1	0	1	1.5%
HRMR	0	0	1	0	1	1.5%
IJHRM	0	0	0	1	1	1.5%
JBR	0	0	0	1	1	1.5%
MIR	0	0	1	0	1	1.5%
MITSMR	0	0	0	1	1	1.5%
SCM	0	0	0	1	1	1.5%
AMJ	0	0	0	0	0	0%
AMR	0	0	0	0	0	0%
ASQ	0	0	0	0	0	0%
DS	0	0	0	0	0	0%
JAP	0	0	0	0	0	0%
I & M	0	0	0	0	0	0%
EJIS	0	0	0	0	0	0%
JBV	0	0	0	0	0	0%
JIBS	0	0	0	0	0	0%
JOM	0	0	0	0	0	0%
JMS	0	0	1	0	1	1.5%
JOPM	0	0	0	0	0	0%
JOB	0	0	0	0	0	0%
JPIM	0	0	0	0	0	0%
LQ	0	0	0	0	0	0%
MSc	0	0	0	0	0	0%
OPR	0	0	0	0	0	0%
OSc	0	0	0	0	0	0%
OS	0	0	0	0	0	0%
ROB	0	0	0	0	0	0%
SMJ	0	0	0	0	0	0%
TJB	0	0	0	0	0	0%
BJM	0	0	0	0	0	0%
HRELS	0	0	0	0	0	0%
JWB	0	0	0	0	0	0%
MISQE	0	0	0	0	0	0%
ORL	0	0	0	0	0	0%
OBHDP	0	0	0	0	0	0%
SO	0	0	0	0	0	0%
TAMP	0	0	0	0	0	0%
Total	12	12	23	20	67	100%

### 5.2. The research topics

Over half of the articles (52.2%) published in business and management journals were of a descriptive nature, followed by 13 articles (19.4%) in the area of adoption/implementation of the balanced scorecard, and 10 (14.9%) in the area of the effectiveness of the balanced scorecard (see Table 9). A number of descriptive studies (e.g., Ahn, 2001; Bianchi & Montemaggiore, 2008; Chesley & Wenger, 1999; Greatbanks & Tapp, 2007) focused mainly on developing balanced scorecard frameworks for organisations, and some studies (e.g., Bianchi & Montemaggiore, 2008; Van der Zee & de Jong, 1999; Velcu, 2010) investigated the benefits of implementing the balanced scorecard.

### 5.3. The research settings

Thirty-six (53.7%) of the 67 articles related to the balanced scorecard did not specify their research settings (see Table 10). The service sector was widely studied (16.4%), followed by 10 studies (14.9%) in publicly listed traded companies, and 7 studies (10.4%) in the manufacturing sector. Two articles (Bianchi & Montemaggiore, 2008; Greatbanks & Tapp, 2007) focused on local government and municipalities and a single article (Chesley & Wenger, 1999) focused on government departments and agencies. This contrasts with accounting journals, in which a total of 23 studies investigated balanced

**Table 9**

Frequency distribution of articles on the balanced scorecard published in business and management journals by topics.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Balanced scorecard (general) <sup>a</sup>	11	7	11	6	35	52.2%
Adoption/implementation	0	2	5	6	13	19.4%
Organisational effectiveness	1	2	4	3	10	14.9%
Uses in decision making	0	1	2	5	8	11.9%
Impacts on employee mental states	0	0	1	0	1	1.5%
Causal relationships	0	0	0	0	0	0%
Diffusion of the balanced scorecard	0	0	0	0	0	0%
Employee incentive plans	0	0	0	0	0	0%
Total	12	12	23	20	67	100%

<sup>a</sup> Includes descriptive and conceptual papers.

scorecard practices in these three sectors. Only three of the 67 articles focused on balanced scorecard practices in developing nations.

#### 5.4. The research theories

A significant number of articles (22.3%) did not state any explicit theory; these were mainly descriptive accounts of balanced scorecard practices in organisations (Table 11). The articles that used theories mainly applied economic theory, agency theory, stakeholder theory, cultural perspective, and institutional theory.

#### 5.5. The research methods

Ten articles (14.9%) did not specify the research method adopted (Table 12). Further analysis of these articles revealed that they were mainly descriptive in nature. Twelve studies (17.9%) used mixed methods combining qualitative methods (e.g., interviews and documents) and quantitative methods (survey). Ten studies (14.9%) used stand-alone questionnaire survey techniques, 9 (13.4%) used a case study approach, and 2 used experimental tools.

#### 5.6. The primary data analysis techniques

Twenty-four studies (35.8%) did not specify the techniques used in their data analysis techniques (Table 13). Six studies (8.9%) used interview quotes to substantiate their findings and 8 (11.9%) used both interview quotes and survey responses.

## 6. Knowledge gained from existing studies on the balanced scorecard

This section identifies and discusses several themes emerged from this review. Appendices C and D summarise the key issues addressed in some notable articles published in leading journals. These articles were selected on the basis of their citation in the literature (this list is merely illustrative, not exhaustive).

#### 6.1. Theories and research methods

Much work on the balanced scorecard published in the selected business and management journals has remained qualitative and descriptive, being based neither on theory nor on developing theory. On the other hand, most studies on the balanced scorecard published in the selected accounting journals has drawn upon a wide range of theories, namely

**Table 10**

Frequency distribution of articles on the balanced scorecard published in business and management journals by research settings.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Service private sector (banking, insurance, airline, telecommunications)	0	3	4	4	11	16.4%
Publicly traded listed companies	0	1	3	6	10	14.9%
Manufacturing	0	2	4	1	7	10.4%
Local governments/municipalities	0	1	1	1	3	4.5%
Accounting firms	0	0	1	0	1	1.5%
Marketing and retailing	0	0	0	0	0	0%
Private hospitals/healthcare	0	0	0	0	0	0%
Government departments/agencies	0	0	0	0	0	0%
Not-for-profit/non-government organisations	0	0	0	0	0	0%
Nil/not stated <sup>a</sup>	12	5	10	8	35	52.3%
Total	12	12	23	20	67	100%

<sup>a</sup> Includes mainly descriptive articles in *HBR*.

**Table 11**  
Frequency distribution of articles on the balanced scorecard published in business and management journals by theories.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Psychology	0	2	3	1	6	8.9%
Contingency	0	2	3	1	6	8.9%
Institutional	0	1	3	2	6	8.9%
Economics	0	1	3	2	6	8.9%
Critical (general)	0	2	1	2	5	7.5%
Multiple theory, triangulation	0	1	2	2	5	7.5%
Cultural (national and organisational)	0	1	1	2	4	5.9%
Agency	0	0	0	1	1	1.5%
Stakeholder theory	0	0	1	0	1	1.5%
Grounded theory	0	0	0	1	1	1.5%
Organisational behaviour/theory	0	0	0	0	0	0%
Actor-network theory	0	0	0	0	0	0%
Innovation diffusion (attributes, fad and fashion)	0	0	0	0	0	0%
Historical	0	0	0	0	0	0%
Constructivist approach	0	0	0	0	0	0%
Other	4	1	4	2	11	16.4%
Nil/not stated <sup>a</sup>	8	1	2	4	15	22.3%
Total	12	12	23	20	67	100%

<sup>a</sup> Includes descriptive articles which explain the features of the balanced scorecard and offer practical insights.

contingency theory, judgement and decision-making theory, neo-institutional sociology theory, neo-institutional economics, agency theory, and actor-network theory. Some studies have relied on theoretical eclecticism or multiple theories (Hoque, Covaleski, & Gooneratne, in press). The studies also used a variety of research methods, both qualitative (archival and interviews) and quantitative (surveys and experiments). In the accounting field, however, market-based statistical studies were more prominent in the period under study than qualitative case studies (see Appendix C). More qualitative field-based studies could in future capture actual usage of the balanced scorecard in practice in a variety of contexts.

Balanced scorecard researchers have increasingly employed quantitative/statistical tools for testing their hypotheses. To operationalise the use of the balanced scorecard, researchers have developed a multi-item scale comprising items from Kaplan and Norton's four dimensions of the balanced scorecard. For instance, Hoque and James (2000) measured balanced scorecard usage via 20 items and used a mean score to represent overall balanced scorecard usage. However, they acknowledged the limitation of this operationalisation technique: "our BSC measure might not pick up the strategic linkages of a real BSC usage; it does not pick up firms' tendency to use quantitative measures (frequency and extent of reporting) of several kinds in assessing performance" (p. 8). On the other hand, most of the qualitative case studies reported on organisations' explicit use of Kaplan and Norton's balanced scorecard concept to develop their business scorecard (e.g., see Carmona & Granlund, 2003; Chesley & Wenger, 1999; Greatbanks & Tapp, 2007; Malina & Selto, 2001; Malmi, 2001; Papelexandris, Ioannou, & Prastacos, 2004; Qu & Cooper, 2011).

## 6.2. Economic benefits and performance improvement

Using contingency theory of organisations, a number of researchers have provided empirical evidence on the economic (financial) benefits of the use of the balanced scorecard. According to Luft (1997, p. 91): "Both contingency theories in organisational behaviour and static equilibrium analysis in economics assume that observed practice is determined by a 'best fit' between available practices and current conditions." In a related theme, using the interaction "fit" notion of contingency theory, Hoque and James (2000) showed the bivariate interaction between pairs of contextual variables (organisational size, product life-cycle stage, and market position) and balanced scorecard that affected firm performance. Hoque and James found that managers' use of balanced scorecard measures improved their organisational performance, but this relationship was not significantly dependent on organisational size, product life-cycle or market position. Similarly, Speckbacher et al. (2003)

**Table 12**  
Frequency distribution of articles on the balanced scorecard published in business and management journals by research methods.

Years	1992–1996	1997–2001	2002–2006	2007–2011	Total	Total %
Mixed methods	4	0	6	2	12	17.9%
Action research	2	4	3	2	11	16.4%
Survey	0	0	6	4	10	14.9%
Archival	2	3	2	3	10	14.9%
Case/field study	0	3	3	3	9	13.4%
Analytic	1	1	0	1	3	4.4%
Behavioural experiment	0	0	0	2	2	2.9%
Nil/not stated <sup>a</sup>	3	1	3	3	10	14.9%
Total	12	12	23	20	67	100%

<sup>a</sup> Includes descriptive articles on features of the balanced scorecard and reviews.

**Table 13**

Frequency distribution of articles on the balanced scorecard published in business and management journals by primary data analysis techniques.

Years	1992-1996	1997-2001	2002-2006	2007-2011	Total	Total %
Qualitative:						
Content analysis	1	2	2	1	6	8.9%
Interview quotes	0	1	2	3	6	8.9%
Archival analysis	0	2	1	1	4	5.9%
Grounded theory	0	0	0	0	0	0%
Participation/observation	0	0	0	0	0	0%
Quantitative:						
Descriptive statistics/correlations	2	2	3	3	10	14.9%
Mixed methods (qualitative and quantitative)	2	1	3	2	8	11.9%
Regression/ANOVA/MANOVA	0	0	1	3	4	5.9%
Other <sup>a</sup>	1	1	2	0	4	5.9%
PLS/SEM/path analysis	0	0	0	1	1	1.5%
Nil/not stated <sup>b</sup>	6	3	9	6	24	35.8%
Total	12	12	23	20	67	100%

<sup>a</sup> Includes factor analysis and pair-wise comparisons.<sup>b</sup> Includes descriptive papers and reviews.

found that application of the balanced scorecard improved company results in the long term. In contrast, using case studies within 15 Swedish multinational companies, [Kraus and Lind \(2010\)](#) found little impact of the balanced scorecard on corporate control. However, they reported that the financially based balanced scorecard was most important to these multinational companies.

A number of studies in the public sector have reported on the effectiveness of the balanced scorecard. For example, [Poister and Streib \(1999\)](#) found that in addition to adopting reporting guidelines, municipal administrators tried to enhance accountability through refinement of their organisation's own performance measurement system. On the other hand, [Chan's \(2004\)](#) survey revealed limited use of the balanced scorecard in municipal organisations' decision-making processes, whereas public sector managers in [Hoque and Adams' \(2011\)](#) study considered it useful. Further, some studies ([Aidemark, 2001](#); [Brewer, 2002](#); [Kershaw & Kershaw, 2001](#)) in not-for-profit sector firms revealed the balanced scorecard as beneficial for the organisations' sustainable improvement.

The findings of studies using subjective measures of performance should be interpreted with care because of their reliance on self-reported organisational performance. The literature identifies two types of potential error in subjective measures of performance: (a) random errors due to respondents' reliance on memories of figures when they report on performance, and (b) "systematic" or "common-method variance" bias, where information is collected from the same respondent (for details, see [Podsakoff, MacKenzie, Lee, & Podsakoff, 2003](#); [Podsakoff & Organ, 1986](#); [Wall et al., 2004](#)). Despite these limitations, however, management accounting studies will continue to use subjective measures, as "for some organisations and level of analysis there may be no viable alternative" ([Wall et al., 2004](#), p. 96). Self-reported, subjective measures of performance are useful when some activities (such as customer service performance, team work or employee satisfaction) cannot be easily measured with objective metrics. Since each tool has its strengths and weaknesses, there is a need for further empirical studies on the relationships between the balanced scorecard and performance using a variety of subjective and objective measures of performance.<sup>10</sup> Further, qualitative field studies in "real-life" settings can also shed further light on this matter.

### 6.3. Judgement decision-making usefulness

Lessons can also be learned from a number of studies that used the judgement and decision-making notion of the social psychology approach in explaining variations in balanced scorecard practices. [Kaplan and Norton \(1996c\)](#) noted that common measures tend to be financial indicators of performance and tend to lag, whereas unique measures are non-financial measures and tend more to lead. From [Lipe and Salterio's \(2000\)](#) study we can learn that unique measures in a business unit's balanced scorecard could be underweighted in performance evaluation. Further, we learn that common measures that drive unit managers' evaluations have more effect on unit managers' decisions than unique measures that are not used in evaluations. Subsequent studies (e.g., [Dilla & Steinbart, 2005](#); [Humphreys & Trotman, 2011](#); [Kaplan & Wisner, 2009](#)) indicate decision makers' use of common and unique measures when evaluating divisional performance.<sup>11</sup>

Results of the [Lipe and Salterio \(2000\)](#) study imply that managers pay insufficient attention to leading and non-financial indicators, which might limit the benefits they receive from the balanced scorecard. According to [Kaplan and Norton \(1996c\)](#), as the purpose of implementing the balanced scorecard is to expand the set of measures managers use in decision-making, disregard for unique measures would defeat that purpose. Indeed, [Cheng and Humphreys \(2012, p. 899\)](#) argue that "presenting performance measures categorised by scorecard perspective only improves managers' strategy appropriateness judgements when the managers are provided with a set of strategic objectives that are not presented in a strategy map structure."

<sup>10</sup> For detailed discussion of the use of both types of measure in a single study, refer to [Wall et al. \(2004\)](#).<sup>11</sup> For a recent review of this literature, see [Salterio \(2012\)](#).

#### 6.4. *Strategic communication*

Another theme in several articles in this review relates to the power of the balanced scorecard in communicating managerial issues across an organisation. For instance, from [Malina and Selto's \(2001\)](#) study one can learn that the balanced scorecard presents significant opportunities to develop, communicate, and implement strategy, which confirms Kaplan and Norton's arguments for linking balanced scorecard measures to the organisational strategy map. Malina and Selto's results further demonstrate the causal relations between effective management control, motivation, strategic alignment and beneficial effects of the balanced scorecard.

[Banker, Chang, and Pizzini \(2004\)](#) reported that performance evaluators were influenced by strategically linked measures when provided with strategy information and they relied more on strategically linked measures than common measures. Their findings also confirmed those of [Lipe and Salterio \(2000, 2002\)](#) that evaluators rely more on common measures than on unique measures. These results suggest that the tendency of evaluators to rely more on common measures did not necessarily undermine the role of the balanced scorecard in reinforcing business strategy. This is because evaluators also relied on strategically linked performance measures, especially when they understood the business unit's strategy. We also learn from [Dilla and Steinbart's \(2005\)](#) study that decision-makers' knowledge of the balanced scorecard can reduce the common measures bias.

[Malmi's \(2001\)](#) study revealed five reasons behind an organisation's decision to adopt the balanced scorecard. These were: (a) translating strategy into action, (b) managing quality programs, (c) supporting change agendas, (d) managerial fads and fashion, and (e) abandonment of traditional budgeting. Furthermore, [Ding and Beaulieu \(2011\)](#) showed that decision-makers used balanced scorecard measures in offering financial incentives to employees. We also learn from Ding and Beaulieu's study that individual feelings, including moods and emotions, are important when linking balanced scorecard measures with performance evaluations and incentive-related decision making. Thus these studies suggest that an important precondition for successful balanced scorecard implementation is that organisational managers understand the linkages among performance measures, business units' strategy, and organisational decisions. In this context, it is worth citing the reflection of [Malina et al. \(2007, p. 937\)](#) reflection on the cause–effect relationship of the performance measurement model (PMM) such as the balanced scorecard: “Organizations may use dynamic PMMs that composed of relations that are not cause-and-effect, but may be more than common sense, to facilitate strategic communication and to create a climate of control rather than to create a predictive business model for use as a decision aid, business simulation, or input–output model”. More research is required to shed further light on managers' understanding of cause and effect measures, and the relationships between the four dimensions of the balanced scorecard.

#### 6.5. *The role of consultants*

Researchers have recently documented how organisations use consultants in implementing the balanced scorecard. For example, [Qu and Cooper \(2011\)](#) provide evidence of a detailed process of inscription building (through the mobilisation of both people and objects), where diverse actors in a Canadian consulting firm and in the client organisation attempted to edit local specifics to make the balanced scorecard acceptable. A lesson from this actor–network theory-driven research is that a balanced scorecard project can be realisable through the specification, circulation, accumulation and negotiation of multiple inscriptions and inscriptors (actors). The study suggests that the actors (pioneers and external consultants) who participate in developing and implementing a balanced scorecard project play a significant role in its overall effectiveness. In their research setting, the balanced scorecard project was “co-produced through client–consultant interaction where client input served to articulate local specifics that were fed into the consultants' template” (p. 359).

#### 6.6. *Gaining external legitimacy*

A common theme in many of the studies in this review probed how “external” institutions, such as funding agencies, government regulation, professional bodies, and socio–political contexts, could play a significant role in the implementation choice of the balanced scorecard ([Daniel, Myers, & Dixon, 2011](#); [Kasperskaya, 2008](#); [Modell, 2001, 2009](#)). From these studies we learn that organisations might adopt the balanced scorecard to gain legitimacy from their external constituencies without consideration of the efficiency or effectiveness of its adoption. This is more likely in the public sector context (e.g., see [Hoque & Adams, 2011](#)).

#### 6.7. *Strategic alignment and causal chain focus*

Some notable studies published in business and management journals (see [Appendix D](#)) have demonstrated how different organisations developed and used balanced scorecard measures as strategy evaluation tools. [Van der Zee and de Jong \(1999\)](#) showed how organisations could benefit from integrating business information technology management with the balanced scorecard. Similarly, [Park, Lee, and Yoo \(2005\)](#) argued for integration of the balanced scorecard with the organisation's supply chain. Their hybrid version of the scorecard was called the “The Balanced Scorecard Supply Chain.” [Decoene and Bruggeman \(2006\)](#) drew from a case study of a Danish company to demonstrate the relationships between strategic alignment, motivation and organisational performance in the balanced scorecard context. In a related vein, using innovation theory and

drawing from a longitudinal case study in a medium-sized bank, [Johnson-Cramer, Cross, and Yan \(2003\)](#) demonstrated how the bank used the balanced scorecard in its “new” reengineering program in managing organisational operational activities.

A number of researchers (e.g., [Ittner, Larcker, & Meyer, 2003](#); [Malina & Selto, 2001](#)) have demonstrated that organisations often did not explicitly state causal linkages among the balanced scorecard perspectives. Further, we learn from [Tayler's \(2010\)](#) experiment that merely framing the balanced scorecard as a causal chain is not sufficient to diminish motivated-reasoning processes, even in the simple setting. According to Tayler (p. 1097), “Framing the scorecard as a causal chain *and* involving managers in measure selection mitigates the effects of motivated reasoning related to managers’ involvement in initiative selection.”

## 7. The debate, knowledge gaps and recommendations for further studies

Despite its usefulness, the balanced scorecard has also received considerable criticism. For example, [Butler, Letza, and Neale \(1997\)](#) considered its concept to be too general, pointing out that it might not fit in an organisation’s culture and could ignore corporate missions. In a similar vein, [Laitinen \(2003\)](#) found the selection of the four basic dimensions and their interrelationships problematic, because the measures in practical applications appeared to connect loosely to each other and could not provide clues as to which organisational internal factors should be developed. He further noted that in its original form the balanced scorecard might include non-critical perspectives and exclude critical ones. [Atkinson et al. \(1997, p. 93\)](#) expressed mixed reactions: “The name ‘scorecard’ is misleading because the balanced scorecard is not a scorecard in the conventional accounting sense. Rather, it is a sophisticated information structure and management approach that links effects (also called organisational objectives, such as profit levels) with causes, such as customer or employee satisfaction.”

Other scholars (e.g., [Chenhall & Langfield-Smith, 2007](#); [Chenhall, 2009](#); [Guo, Wong-On-Wing, Li, & Yang, 2007](#); [Ittner & Larcker, 1998](#); [Johanson, Skoog, Backlund, & Almqvist, 2006](#); [Nørreklit & Mitchell, 2007](#); [Otley, 1999](#)) found it difficult to identify the relative importance of and the trade-offs between the balanced scorecard perspectives. Yet such identification is crucial when resolving conflicts in setting targets for different measures of the perspectives. [Epstein and Manzoni \(1998\)](#) questioned the ability of organisations to agree on a strategy in such clear terms that it would facilitate the construction of a balanced scorecard, and stated that the maintenance of systems was laborious. [Vaivio \(1999\)](#) challenged the principal idea of the balanced scorecard that a handful of quantitative measures could portray the various facets of an organisation’s strategy. Similarly, [Johanson et al. \(2006\)](#) pointed out “balancing” problems surrounding the four perspectives of the balanced scorecard. Further, [Liedtka, Church, and Ray \(2008\)](#) highlighted performance variability and ambiguity tolerance in performance assessment based on the balanced scorecard.

[Nørreklit \(2000, 2003, 2012\)](#) was highly critical of claims of causal relationships between the four perspectives of the balanced scorecard and of the validity of the system to serve as a strategic management tool. She argued that the balanced scorecard had problems with some of its key assumptions and relationships, and that there was not a causal but rather a logical relationship among the areas covered in the balanced scorecard. Further, Nørreklit noted that the balanced scorecard was not the valid strategic management tool that Kaplan and Norton claimed because it had difficulty ensuring organisational and socio-environmental rooting.

The criticisms noted here thus challenge some key assumptions of the balanced scorecard, the notion of causality in the relationship, and the idea that it can be a strategic tool. Despite such criticisms, Kaplan and Norton in their recent writings (see [Table 1](#) for the references) have extended and broadened the balanced scorecard concept into a strategic management tool for describing, communicating and implementing strategy, thus reinforcing their original 1992 point that the balanced scorecard has practical relevance for organisational decision making. [Kaplan \(2009, 2012\)](#) further asserts that balanced scorecard measures need to be broken down into financial and non-financial measures in such a way that information, communication and strategy at all levels of organisations can be aligned for effective management. This stance echoes [Grady's \(1991\)](#) statement that a company’s strategic objectives should be broken down into critical success factors and critical actions.

The discussion above shows how previous studies have added significantly to the richness of the debate regarding the balanced scorecard. As also discussed, several researchers have pointed out limitations of the balanced scorecard concept and of research in the field. This debate opens up some opportunities for future research, as outlined next.

[Shields and Shields \(1998, p. 65\)](#) suggest that “future research should be informed by what has been learned from past research.” Although the studies reviewed here provide useful insights into balanced scorecard practices, there are some empirical, theoretical and methodological issues that remain unresolved. In this section I highlight some gaps in the knowledge base surrounding the balanced scorecard, with recommendations for further research.

### 7.1. International variation in balanced scorecard practice

Few studies (only five in accounting and three in business and management) were situated in different types of research settings in developing or emerging nations. Further research is needed to determine international variations in design and use of the balanced scorecard in organisations in both private and public sectors. Some developing nations might be implementing the balanced scorecard primarily to comply with requirements of external institutions such as funding agencies, government policy reforms, or professional bodies. Further, consultants may also have a significant role in the development and implementation of the balanced scorecard in developing nations. Inter-country surveys or in-depth field studies in a specific country on various issues of the balanced scorecard outlined above might be enlightening. These studies could provide some explanations for the commonalities and/or differences in balanced scorecard practice and its effectiveness in different types of settings across the globe.

## 7.2. Individual motivation and system outcomes

Although many of the articles reviewed here have reported on organisational effectiveness of the balanced scorecard, little is known about how balanced scorecard measures can be used to consider incentives to agents (and employees). Future studies could extend this line of enquiry by developing “relevant” balanced scorecard performance measures so that principals find an incentive scheme that minimises the cost of the agent choosing actions that are not in the principal’s best interest (Bromwich, 2009).

A number of psychology-based experimental studies on balanced scorecards (e.g., Banker et al., 2004; Cheng & Humphreys, 2012; Humphreys & Trotman, 2011; Libby et al., 2004; Lipe & Salterio, 2000, 2002) have demonstrated how individuals make subjective decisions using balanced scorecard measures. Future studies could investigate whether integrating individual motivational elements (such as achievement, recognition, responsibility, and the opportunity for achievement) into the design of the balanced scorecard can influence its effectiveness. In this context, using psychology-based theories (for details, see Birnberg, Luft, & Shields, 2009; Luft & Shields, 2009), several studies can be undertaken. For example, using elements of expectancy theory (Vroom, 1964; for details, see Hoque, 2006), researchers might examine whether an individual’s motivation for using balanced scorecard measures in decision-making is a function of *expectancy*, *performance*, or *outcome* (Lawler, 1968; Vroom, 1964; for details, see Birnberg et al., 2009). Further, using the non-cognitive notion of human psychology, future studies could also investigate whether individuals’ motivated behaviour as a result of linking balanced scorecards with rewards and punishments increases the effectiveness of the balanced scorecard.

Luft and Shields’ (2009) review of psychological models of management accounting revealed how management accounting practices such as budgets influence individuals’ motivation through budget goal setting and social interaction through budget negotiations. In their review of psychology-based budgeting research, Covaleski, Evans, Luft, and Shields (2003) summarised how several budgeting studies offered insight into the effects of budgeting initiatives on individuals’ mental states, behaviour and performance. In fact, Hopwood’s (1974) seminal work, “*Accounting and Human Behavior*”, contributed enormously to the development of behavioural or psychologically based budgeting research.

Several psychologically based experimental balanced scorecard studies cited earlier have shown individuals’ preferences for balanced scorecard measures for performance evaluations. Further research could be undertaken in the following areas: (a) the effects of balanced scorecard dimensions on individuals (balanced scorecard users), their mental states, behaviour and performance; (b) how the effects of balanced scorecard initiatives vary across individuals’ personal traits and learning and growth capability; (c) the effects of individual differences<sup>12</sup> on judgemental decision-making processes and outcomes; (d) the effects of interpersonal relations among group or team members within a balanced scorecard network; and (e) how individuals’ mental states and behaviour (such as attitudes, beliefs, knowledge, and preferences) interact positively to affect performance—individual as well as organisational (Birnberg et al., 2009).

By combining judgement and decision-making approaches with the contingency theory of management accounting, researchers can examine systematically whether the presence of environmental uncertainty in the organisational business environment (situational factor) produces different effects or outcomes for different individual measures, such as decision-making measures, risk attitude measures, cognitive ability measures, motivation measures, and personality construct measures (for details of these measures, see Appelt, Milch, Handgraaf, & Weber, 2011). This relationship has not been established in the existing balanced scorecard research. Appelt et al. (2011, p. 257) suggest that “the effects of individual difference measures are often contextual; measures are significant for one decision-making phenomenon and not for another.” Following this line of argument, future research could adopt an interaction approach to examine how individual differences interact with balanced scorecard decision features and with situational factors (such as environmental uncertainty) to influence the performance of individuals as well as organisations. Such investigation, however, requires larger sample sizes for adequate statistical power.

Future research into balanced scorecard implementation could also benefit from integrating economics-based theories with behavioural characteristics of individuals (such as bounded rationality) to resolve any conflicts in the implementation process. It should be noted that agents or “individuals intend to behave rationally but do not so perfectly because their limited cognitive processing capacity is often exceeded by the demands of complex and ill-structured problems” (Birnberg et al., 2009, p. 123) within a formal management control system like the balanced scorecard. Although some cognitive psychology-based studies of the balanced scorecard have examined how decision-makers make judgements and decisions when using balanced scorecard measures for performance evaluation (see Table 3 in this paper), future studies could certainly benefit from integrating economics, psychology, and sociology-based theories to understand the effectiveness of the balanced scorecard in a complex socio-economic and political environment.

An increasing number of studies have focused on “measurement” aspects of the balanced scorecard. For example, behavioural experimental studies investigated how senior managers used key balanced scorecard measures in decision making such as in evaluation of individual and business unit performance and compensation practices. On the other hand, most survey-based research has focused on linking balanced scorecard measures with organisational and environmental factors and how this link might affect firm performance. Management accounting studies based on contingency theory (for details, see Baines & Langfield-Smith, 2003; Chapman, 1997; Chenhall, 2003; Chenhall & Chapman, 2006; Hoque, 2005) have reported mixed findings as to the effectiveness of non-financial performance measurement systems in organisations.

<sup>12</sup> For a review of this literature, see Appelt et al. (2011).

Further, as discussed earlier, most of the quantitative studies reviewed have used subjective measures of performance, which are subject to methodological debates such as common method biases (Podsakoff et al., 2003). The findings of studies using non-financial performance measurement systems and subjective measures of effectiveness are also valid in the context of balanced scorecard practices. Hence further research is warranted, using different paradigms and measurement methods, to examine the effectiveness of the balanced scorecard in different types of settings. Atkinson et al. (1997, p. 98) suggest that many new avenues in research are woven from different methodological perspectives and disciplines.

As the cause-and-effect relationships among the different measurement perspectives are fundamental to the balanced scorecard achieving its desired outcomes, it is crucial to resolve any misunderstandings or ambiguity regarding this issue. Yet there is little empirical work on the relationships and causality among balanced scorecard perspectives. Future studies could investigate whether and how causal relationships among balanced scorecard perspectives could be the outcome of facilitating strategic organisational and employee learning, and could assess the impact on organisational strategic outcomes. Using a holistic view within the concept of contingency “fit” (Chenhall & Chapman, 2006; Donaldson, 2001; Drazin & Van de Ven, 1985), researchers could explore the effects of many contextual and structural variables on the causal relationships between balanced scorecard perspectives. Gerdin and Greve (2004, Fig. 1, p. 304) and Chenhall and Chapman (2006) have demonstrated how management accounting and control researchers can use a classificatory framework for mapping different forms of contingency fit in their theoretical frameworks (see also Donaldson, 2001; Hartmann & Moers, 1999).

Kaplan (2009) has also highlighted a number of opportunities for future research that could link balanced scorecard implementations with strategy maps, operational management, and organisational leadership. One possible research focus, according to Kaplan, is to identify organisational leadership in each balanced scorecard implementation and the significance of this factor in creating success. According to Kaplan (p. 1267), “leadership is required to translate strategy into the linked strategic objectives on a strategy map and then to use the map and the accompanying scorecard interactively.” Another Kaplan recommendation for future research is to formally embed enterprise risk management theory in the strategy map and balanced scorecards.

### 7.3. *Balanced scorecard networks, practice diversity and rhetoric*

Inspired by DiMaggio and Powell (1983) and Meyer and Rowan (1977), accounting researchers have advocated and used the structural institutional approach to explore the idea that organisations and actors pursue legitimacy because of coercive, mimetic, and normative pressures. Several researchers (e.g., Carruthers, 1995; Covaleski & Dirsmith, 1988; Dillard, Rigsby, & Goodman, 2004; Hopper & Major, 2007) have demonstrated systematic variation in accounting practices and linked such variation to broader socio-cultural, cognitive, normative and regulative pressures.

The concept of structural institutionalism has been subject to criticism from many scholars, including Alvesson (1993), Donaldson (1995), Green (2004), Green and Li (2011), Lounsbury (2008), and Suddaby (2010). Lounsbury (2008) suggested that although studies of institutionalisation focus on isomorphism by showing how practices spread throughout socio-political fields, organisational fields and organisation levels, they do not capture on-going organisational struggle and change. He further pointed out that “given recent efforts by institutionalists to account for actors and practice diversity, there is an important opportunity for dialogue with practice theorists, such as those drawing on actor-network theory (ANT), and the creation of a more comprehensive approach to the study of practice that attends to both institutional and micro-processual dynamics” (p. 349). This idea of integrating institutional analysis with actor-networks could provide a fruitful path for the development of new insights about balanced scorecard practices in their wider socio-cultural and political contexts. The gap in the current balanced scorecard literature provides an opportunity for theoretical development and empirical insight into the balanced scorecard. Such effort elicits alternative explanations or new observations concerning networks in organisational balanced scorecard practices.

As pointed out by some scholars (e.g., DiMaggio, 1988; Fligstein, 1997; Hardy & Maguire, 2008; Lounsbury, 2008; Oliver, 1991), institutional entrepreneurs act as agents to deploy their social skills “to motivate cooperation in other actors and thus change or reproduce institutional orders” (Fligstein, 1997, p. 398; cited in Green & Li, 2011, p. 1669). Green and Li (2011), citing DiMaggio (1988), suggest that institutional entrepreneurs create or change institutions when they have sufficient resources to imagine and realise interests they value highly. Using agency institutionalism, researchers see language as a pragmatic tool to manipulate the connotative and multiple meanings inherent in many social structures, fields, identities, and actions. The current institutional research in management accounting, including the balanced scorecard, is limited in this field.

Further, ANT (Callon, 1986, 1999; Latour, 1987) would help to involve the concept of close engagement of actors and their world views, possibly capturing multiple interpretations or different views of reality from a wide range of actors involved in balanced scorecard practices. Seen from the purview of ANT, Qu and Cooper (2011) addressed the role of consultants and certain forms of inscriptions in the translation process of the balanced scorecard in an organisation. However, further research is needed to understand the extent to which organisational actors develop a network in translating the balanced scorecard into day-to-day activities of the organisation. Within this broader theme, future research could address several questions: How do organisational internal actors form and shape the development of the balanced scorecard? Who supports balanced scorecard practices and who opposes them? What is the nature of relational networks built? What consequences result from control practices (such as improving relationships, developing rivalries), given that actors gain their identities through relations with others? In this context further light may be shed on these issues using inter-country settings.



Nørreklit (2003, p. 291) claimed that the amount of attention the balanced scorecard had attracted was because it was presented as “persuasive rhetoric” rather than a “convincing theory”. Similarly, Busco and Quattrone (2009) suggested that the functionality of the balanced scorecard was allied with rhetorical characteristics that appealed to many users. Further research is required to provide evidence on how agents or actors use the technical attributes of the balanced scorecard to influence others and achieve their intended goals.

Green and Li attempted to explain how institutions both constrain and enable agency. They called this approach “rhetorical institutionalism” that referred to “the deployment of linguistic approaches in general and rhetorical insights in particular to explain institutionally embedded agency” (2011, p. 1670). Drawing upon Alvesson’s (1993) idea of “organisations as rhetoric”, Green and Li discussed the benefits of integrating rhetorical ideas in both structural and agency institutionalism research. They claimed that rhetorical institutionalism helped explain how social structures and agency are co-embedded and entangled with meanings. Green and Li explained this integration as: “Structure shapes agency as meanings are taken for granted and unconsciously reproduced by actors. Agency shapes structure as actors use language to deconstruct these taken for granted understandings and consciously shape and create new meanings.” Using Green and Li’s rhetorical model of institutionalism, future research could explore rhetorical motives in the balanced scorecard approach in an organisation for describing and framing “who (*agent*), gets to do what (*act*), why (for what *purpose*), where (*scene*), and in what way (*agency*)” (p. 1673).

#### 7.4. Public sector reform and the balanced scorecard

A large group of studies dealt with various implementation and organisational issues of the balanced scorecard in the context of public sector reform. That research, however, has not studied the diverse motives, including organisational economic self-interest, which drive accounting choices in government organisations, and their consequences for organisational and social outcomes. With its varied social and political contexts, accounting in the public sector can be more complex than in the private sector and, given its importance in constituting practices, it is important that these issues are addressed.

Public sector reforms have also been introduced in developing economies as part of the economic reform package stipulated by donor agencies (Hopper & Hoque, 2004). Little is known about the implication of such reforms for performance measurement practices in public sector entities in emerging economies. Future studies can explore whether and how public sector organisations in emerging economies have adopted the balanced scorecard framework to improve organisational effectiveness.

## 8. Final remarks

The aim of this article has been to explore the status of research on the balanced scorecard with a view to identify gaps and to sketch ideas for future research. Reviewing 114 articles published in 25 accounting journals and 67 articles in business and management journals over a 20-year period, this article provides an overview of the balanced scorecard implementation and usage, theoretical orientations, and methods of investigation and analysis.

From a positive stance, many quantitative studies exhibited an arms-length research method: select a theory, construct propositions or hypotheses, statistically categorise key variables, look for observations, attempt to retrieve meaning by ex post facto interpretations of tests of significance. Research in this broad category relied on either surveys or behavioural experiments. A substantial proportion of articles published in leading accounting journals fall within this broad category (refer to Appendix C). Several studies also employed mixed methods of investigation (data triangulation) combining qualitative and quantitative methods (refer to Tables 6 and 12). Researchers considered this triangulation technique as a mechanism for improving “the accuracy of their judgements by collecting different kinds of data bearing on the same phenomenon” (Jick, 1979, p. 602). It would be interesting to explore whether findings from studies using triangulation are consistent with results from different research methods. Jick (1979, p. 608) remarked in this context, “Different viewpoints are likely to produce some elements which do not fit a theory or model”.

From this review of studies over the past 20 years we learn that for some organisations it is difficult to integrate the balanced scorecard with other managerial control tools such as budgeting, and that organisations tend to use too many measures in a single scorecard. Hence, organisations might often end up with measuring the wrong things.

The review approach used in this article is not without limitations. From the review of selected articles it was not possible to ascertain fully whether and how organisations used the balanced scorecard and what they thought of it. Future researchers might wish to address these issues. Further, there is a dearth of positive stories in the research literature about the application of the balanced scorecard in organisations. Future researchers could contribute to the literature by focussing on strategies that had worked, or were successful, so that they could be analysed and presented to audiences who might want to try them out (for details about an appreciative enquiry, see Reed, 2007). Further, we could learn more from studies comparing success and failure stories about implementation of the balanced scorecard. It should be noted that this review has not engaged in any debate about the current list of organisations in the international hall of fame that have failed in the recent economic downturn. A future review could address this gap. One should bear in mind, however, that it is much more difficult to gain information access to cases of failure.

Given the validity issue of subject measures of performance, future studies should, wherever possible, combine both subjective and objective measures of performance when investigating the performance effect of the balanced scorecard. As Wall et al. (2004, p.116) remark, “Given each type of measure will contain its own error, more reliable estimates of performance may be obtained by combining them. At the same time, equivalent results from both types of measure would add weight to any substantive findings, and differential findings alter investigators to underlying problems.”

The balanced scorecard was originally designed by Kaplan and Norton in 1992 for measuring performance using a combination of financial and nonfinancial measures. This seminal concept has more recently evolved into an organising framework for a strategic planning, execution and management system. Measures can be linked to vision and strategy, as demonstrated in existing research on the balanced scorecard, and they can also be linked to each other, on the basis of a series of cause-and-effect relationships. The balanced scorecard concept emphasises the linkage of measurement to a strategy map; this tighter connection between the measurement system and the strategy map elevates the role of non-financial measures in strategy implementation and strategy evaluation (Kaplan & Norton, 2006a, 2006b). Until another improved innovation tool appears, the balanced scorecard will continue to provide organisations with a valuable option as a strategy map, an enabler of policy implementation, and an organisational control and accountability tool. Researchers will continue to explore various issues around the balanced scorecard using a range of theoretical and methodological perspectives. This article's review of the development and status of the balanced scorecard literature over the last 20 years will help academic researchers in developing research ideas, in choosing relevant theories and better practice research methods, and in substantiating their findings to enhance our knowledge of everyday balanced scorecard practice.

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## Appendix A

Accounting journals searched for balanced scorecard research

Journal acronyms	Start year	Journal name	Journal ranking by		
			ABDC (2010)	ARC (ERA 2010)	ABS (2010, UK)
A & F	1960	Accounting and Finance	A	B	2
AAAJ	1988	Accounting Auditing & Accountability Journal	A	A*	3
ABACUS	1965	ABACUS: a Journal of Accounting and Business Studies	A	A	3
ABR	1970	Accounting and Business Research	A	A	3
ADIC	1984	Advances in Accounting	C	A	2
AH	1987	Accounting Horizons	A	A	3
AOS	1976	Accounting, Organizations and Society	A*	A*	4
BAR	1988	British Accounting Review	A	A	3
BRIA	1989	Behavioral Research in Accounting	A	A	3
CAR	1984	Contemporary Accounting Research	A*	A*	3
CPA	1990	Critical Perspectives on Accounting	A	A	3
EAR	1992	European Accounting Review	A	A	3
FAM	1985	Financial Accountability & Management	A	A	3
IIAEd	1983	Issues in Accounting Education	A	A	2
JAAF	1986	Journal of Accounting Auditing and Finance	A	A	3
JAEd	1979	Journal of Accounting and Economics	A*	A*	4
JAEd	1982	Journal of Accounting Education	B	A	2
JAPP	1982	Journal of Accounting and Public Policy	A	A	3
JAR	1963	Journal of Accounting Research	A*	A*	4
JBFA	N/A	Journal of Business Finance and Accounting	A	A	3
JMAR	1989	Journal of Management Accounting Research	A	A*	2
MAR	1990	Management Accounting Research	A	A	3
RAS	1996	Review of Accounting Studies	A*	A	4
TAR	1926	The Accounting Review	A*	A*	4
TIIJA	N/A	The International Journal of Accounting	A	A	3

Interpretation of ranking: ABDC/ERA: A\* = Best or leading journal; A = a highly regarded journal; ABS: 4\* = a world elite journal; 4 = a top journal; 3 = a highly regarded journal; 2 = a well-regarded journal. For the recent (2013) ABDC Journal Ranking List, Visit <http://www.abdc.edu.au/journalreview.html>.

## Appendix B

Business and management journals searched for balanced scorecard research

Journal acronyms	Start year	Journal name	Journal ranking by		
			ABDC (2010)	ARC (ERA, 2010)	ABS (2010, UK)
AJM	1976	Australian Journal of Management	A	A	2
AMJ	1958	Academy of Management Journal	A*	A*	4
AMLE	2002	Academy of Management Learning and Education	A*	A*	3
AMR	1976	Academy of Management Review	A*	A*	4
ASQ	1956	Administrative Science Quarterly	A*	A*	4
BJM	1990	British Journal of Management	A	A	4
CMR	1958	California Management Review	A	A	3
DS	2003	Decision Sciences	A*	A*	3
EJIN	1991	European Journal of Information Systems	A*	A*	3
HBR	1922	Harvard Business Review	A	A	3
HRM	1961	Human Resource Management	A*	A*	4
HRMJ	1988	Human Resource Management Journal	A	A	3
HRMR	1991	Human Resource Management Review	A	A	2
HRs	1947	Human Relations	A	A	4
I&M	1968	Information and Management	A	A*	3
IJHRM	1990	International Journal of Human Resource Management	A	A	3
IJOPM	1980	International Journal of Operations and Production Management	A	A	3
JAP	1917	Journal of Applied Psychology	A	A*	4
JAP	1917	Journal of Applied Psychology	A*	A*	4
JBR	1973	Journal of Business Research	A	A	3
JBV	1985	Journal of Business Venturing	A*	A*	4
JIBS	1970	Journal of International Business Studies	A*	A*	4
JMIS	1984	Journal of Management Information Systems	A*	A*	3
JMS	1963	Journal of Management Studies	A*	A*	4
JOB	1980	Journal of Organizational Behavior	A*	A*	2
JOM	1975	Journal of Management	A*	A*	4
JOPM	1980	Journal of Operations Management	A*	A*	4
JPIM	1984	Journal of Product Innovation Management	A*	A*	4
JWB	1965	Journal of World Business	A	A	3
LQ	1990	Leadership Quarterly	A*	A*	4
LRP	1968	Long Range Planning	A	A	3
MIR	1970	Management International Review	A	A	3
MISQ	1977	MIS Quarterly	A*	A*	4
MISQE	2002	MIS Quarterly Executive: A Research Journal Dedicated to Improving Practice	A	A	4
MITSMR	1960	MIT Sloan Management Review	A	A	3
MSC	1954	Management Science	A*	A*	4
OBHDP	1966	Organizational Behavior and Human Decision Processes	A*	A*	4
OMEGA	1973	OMEGA International Journal of Management Science	A	A	3
OR	1952	Operations Research	A*	A*	4
ORL	1981	Operations Research Letters	A	A	2
OS	1990	Organization Science	A*	A*	4
OST	1980	Organization Studies	A*	A*	4
R&DM	1970	R & D Management	B	A	3
ROB	1986	Research in Organizational Behavior	A*	A*	3
SCM	1966	Supply Chain Management: An International Journal	A	A	3
SDR	1975	System Dynamics Review	A	A	2
SMJ	1980	Strategic Management Journal	A*	A*	4
SO	2003	Strategic Organization	A	A	2
TAMP	1987	Academy of Management Perspectives	A	A	3
TJB	1928	Journal of Business	A*	A*	4

## Appendix C

Summary of some notable balanced scorecard studies published in accounting journals (1992–2011)

Author (year)/journal	Key issues addressed	Theory	Research method	Key findings
Hoque and James (2000)/JMAR	Relationship between size, product life-cycle stage, market position and balanced scorecard (BSC) usage and contingent relationship of match on performance	Contingency theory	Survey to CFOs of 66 Australian manufacturing companies	Larger firms make more use of BSC, firms of new products use more new product measures, and market position is not associated with BSC. Performance effects of the BSC is not dependent on subject contingent factors.
Lipe and Salterio (2000)/TAR	Examines observable characteristics of the BSC that may limit managers' ability to fully exploit information found in a diverse set of performance measures	Psychology theory	Experiment carried out with 58 first-year MBA students and applying statistical analysis	Unique measures in a business unit's BSC may be underweighted in performance evaluation; common measures have more effect on unit managers' decisions.
Nørreklit (2000)/MAR	Examines cause-and-effect relationships among the four areas of BSC; whether the BSC can link strategy to operational metrics; discusses and suggests some improvements to the BSC	Strategy–BSC linkage/critical analysis	Analytical approach	An evaluation system which does not integrate all relevant variables cannot be expected to show valid results; a causal relationship is clearly not valid; evaluation will always be partly subjective, and to some extent depend on the intuition of top management.
Malina and Selto (2001)/JMAR	Investigates communication, management-control attributes, and effectiveness of BSC model process and impacts of non-financial performance measure management)	Organisational communication and management-control literature	Qualitative semi-structured telephone interviews with individuals directly involved with BSC along with archival data	BSC effective to control corporate strategy; causal relations between effective management control, motivation, strategic alignment, and beneficial effects of BSC.
Malmi (2001)/MAR	Why and how Finnish-based companies applied BSC concept as performance measurement tool	Strategy choice	Qualitative semi-structured interviews of 17 organisations known to have adopted BSC	BSC used in two ways: management objectives and information system, serving both purposes; five reasons for adopting BSC, relating to strategy and management.
Lipe and Salterio (2002)/AOS	Examines whether the scorecard's organization results in managerial performance evaluation judgements consistent with recognition of the potential relations of measures within a category	Judgemental decision making theory	Experimental design using WCS Inc. retail firm) case with 78 MBA students	Performance evaluations are affected by organising the measures into the BSC categories when multiple below-target or above-target) measures are contained within a category, but evaluations are not affected when the above-/below-target measures are distributed across the BSC's four categories.
Nørreklit (2003)/AOS	Is the BSC the result of a new and convincing theory, or is it merely the result of persuasive rhetoric, where convincing theory differs from solely persuasive rhetoric in that concepts and claims are based on sound argumentation?	Critical commentary	Analytical approach	Concludes that the BSC text is not so convincing as persuasive—a feature characteristic of the genre of management guru.
Ittner et al. (2003)/TAR	Examines how different types of performance measures are weighted in subjective BSC plan	Economic models of incentive contracting and psychological perspective	Quantitative internal documents and employee survey) and qualitative interview and observation) data of financial service firm	Subjectivity allowed supervisors to reduce balance in bonus by placing more financial weights, changing evaluation criteria and ignoring measures not predictive of results.
Roberts et al. (2004)/BRIA	Examines whether disaggregating the BSC results in evaluations is consistent with the intent of the BSC approach	Psychology theory	Lipe and Salterio's (2000) experimental design	The disaggregating strategy allows superiors to utilize unique as well as common measures, thereby

(continued)

Author (year)/journal	Key issues addressed	Theory	Research method	Key findings
Libby et al. (2004)/ TAR	Examines whether increasing effort via invoking process accountability and/or improving the perceived quality of the BSC measures increases managers' usage of unique performance measures in their evaluations	Judgemental decision making theory	Experimental design using WCS Inc. retail firm) case with 78 MBA students	overcoming the common-measures bias. Either the requirement to justify an evaluation to a superior or the provision of an assurance report on the BSC increases the use of unique measures in managerial performance evaluation judgements.
Banker et al. (2004)/ TAR	Assesses how individual's evaluation of performance of business unit managers depends on strategically-linked performance measures of BSC	Psychology/ strategy choice	Case study of clothing retailer, applying statistical analysis of means test and regression analysis	Performance evaluators influenced by strategically linked measures when provided strategy information with greater reliance on common measures than unique ones.
Dilla and Steinbart (2005)/ BRIA	Investigates whether decision makers who had training and experience in designing BSCs exhibit the same behaviour	Judgemental decision making	Lipe and Salterio's (2000) experimental design	Decision makers who are knowledgeable about the BSC attended to both common and unique measures, but placed greater emphasis on the former.
Malina et al. (2007)/ CAR	Investigates the relationships among measures, climate of control, and performance measurement models and examines the validity of cause and effect properties	The cause-and-effect properties of the BSC	Coded interview transcripts from a previous qualitative study; descriptive statistics and correlations	Managers tend to alter strategic and operations choice in line with their BSC measures without statistical evidence of the cause-and-effect relations among the BSC measures.
Kaplan and Wisner (2009)/ BRIA	Examines management's choice of whether to include four or five BSC categories when specific nontraditional strategic objective is present	Judgemental decision making	Experiment with MBA students who act as the evaluators of performance of two plant managers	When management communications about a specific nontraditional strategic objective are limited and a set of specific strategic performance measures indicates superior performance by one manager over another, evaluators discount their reliance on these measures in their performance-related judgements when these measures are clustered into a fifth BSC category relative to when these measures are integrated among the four traditional BSC categories.
Kraus and Lind (2010)	The effect of the corporate BSC on organisational controls	Strategic management theory	Qualitative approach—interviews with 15 Swedish largest multi-nationals	While some organisations adopted corporate BSC; their main focus was on financial control and non-financial dimensions had little impact on corporate controls.
Cardinaels and van Deen-Driks (2010)/AOS	The impact of information organisation and presentation in a BSC	Psychology theory	Experimental design where participants act as senior executives charged with evaluating two business unit managers	When the performance differences are contained in the financial category, evaluators that use a BSC format place more weight on financial category measures than evaluators using an unformatted scorecard. Conversely, when performance differences are contained in the non-financial categories, whether measures are organized into a BSC format or into an unformatted scorecard had no impact on the evaluation.

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Author (year)/journal	Key issues addressed	Theory	Research method	Key findings
Taylor (2010)/ TAR	Examines whether involvement in scorecard implementation can mitigate the effects of motivated reasoning that occur when the scorecard is framed as a causal chain rather than merely as a balanced set of measures	Psychology theory (motivated reasoning)	An experiment with four groups of participants	Managers who are involved in selecting strategic initiatives perceive those initiatives as having been more successful than managers who are not involved in the initiative-selection process holding constant actual scorecard performance). Simply framing the scorecard as a causal chain is not sufficient to mitigate these effects.
Qu and Cooper (2011)/ AOS	Investigates "a detailed process of inscription building through the mobilisation of both people and objects) where diverse actors in a consulting firm and in the client organisation attempt to edit local specifics to make a management accounting technology acceptable"	Actor network theory	Case study within a Canadian consulting firm	Sheds light on the exercise of power in the development of BSC indicators and how management consultants and clients seek to influence the project in pursuit of their own aims. The characteristics of inscriptions are materialized through different media, and different media produce, capture, secure, and refute knowledge claims.
Humphreys and Trotman (2011)/ JMAR	Tests the generalizability of the findings on the common measures bias by examining under what circumstances the provision of strategy information and strategically linked performance measures eliminates the common measures bias on performance evaluation tasks	Judgemental decision-making	An experiment with 92 executive MBA students from an Australian university	When strategy information is provided to managers and only some measures are strategically linked, the common measures bias exists. Further, when all the performance measures are strategically linked, but no strategy information is provided and all measures are strategically linked, the common measures bias is eliminated.
Ding and Beaulieu (2011)/ JAR	Examines the idea that financial incentives can motivate decision-makers to correct mood congruency biases, in which judgements and decisions are consistent with moods.	Judgemental decision making	Participants rated the performance of one division manager based on two accounting measures and another manager based on a 16-measure BSC	Financial incentives to make benchmark-consistent judgements eliminated bias in the former condition but not in the BSC condition. Incentives were offered and performance evaluations were based on an 8-measure BSC; mood congruency bias was eliminated.
Cheng and Humphreys (2012)/TAR	The effect of causal linkages between strategic objectives in the strategy map and performance measures categorised by scorecard perspective on managers' ability to interpret the strategic relevance of external information and use this information to evaluate the appropriateness of an organisation's strategy	Judgemental decision making	Experimental design (89 graduate students enrolled in an advanced managerial accounting course)	The two elements of the BSC framework have differential decision-facilitating impacts on managers' strategic judgements.

## Appendix D

Summary of some notable balanced scorecard studies published in business and management journals (1992–2011)

Author (year)/journal	Key issues addressed	Theory	Research methods	Key findings
Chesley and Wenger (1999)/CMR	BSC implementation—offers insights into the recursive adaptation required to successfully develop and implement a strategy management process	Descriptive case study	Longitudinal case study in the National Reconnaissance Office part of the U.S. Defence Office)	Supports the idea that “there is no one best way to design a satellite no matter how many times people search for one—there are only an infinite number of wrong answers you are trying to avoid.” p. 18).
Van der Zee and de Jong (1999)/JMIS	Aligns the BSC with the capabilities of IT	IT and information systems theory	Two descriptive case studies	Develops a framework that integrates IT with business BSCs. The BSC is a valuable contributor to implementation of an integrated business and IT planning and evaluation process.
Ahn (2001)/LRP	Introduction of the BSC and its limitations	Descriptive	Worldwide supplier of automation products Switzerland)	Given the multitude of measures, managers who try to use the BSC as an interactive system will be overburdened, and strategic supervision of original premises cannot be adequately taken into account.
Carmona and Granlund (2003)/IJOPM	Implementation of the BSC in Swedish law enforcement	Stakeholder approach	Case study, observation, informal conversation, interviews, and documents	Public sector organisations tend to assume a stakeholder perspective on performance measurement. Swedish Law Enforcement developed a set of measures of external success and internal performance that addressed present, past, and future time dimensions. Implementation of the BSC in police work raised some problems.
Braam and Nijssen (2004)/LRP	How to use the BSC effectively?	Prescriptive/contingency perspectives	Mail survey to Dutch firms	BSC use will not automatically improve company performance, but the manner of its use matters; BSC use that complements corporate strategy positively influences company performance, but BSC use that is not related to the strategy may decrease it.
Papalexandris et al. (2004)/LRP	Illustrates an implementation of the BSC in Greece	Descriptive case study	Case study within a Greece software company	BSC is a necessary “good” for companies, especially when used as a framework and a guideline for successful strategy communication and implementation and a system for understanding what really creates value in the company, rather than when it is used as a pure performance measurement system.
Park et al. (2005)/EJIS	Proposes a framework for the BSC supply chain	Normative literature on the BSC and supply chain perspective	Comparative case study; analysis of structured interviews, questionnaire, and simple statistics	The importance of BSC measures depends significantly on the product characteristics.
Decoene and Bruggeman (2006)/IJOPM	Relationship between strategic alignment, motivation and organisational performance in the BSC context	Theory of motivational mechanism agency and expectancy)	Case study, interviews, archival data in a Danish company producer of polyolefin plastic)	A combination of effective strategic alignment and a BSC-based compensation plan has a positive effect on the extrinsic motivation of manufacturing executives.
Greatbanks and Tapp (2007)/IJOPM	Impact of BSC in A public sector environment	Descriptive case study—no explicit theory	A case study within a public service city council in New Zealand	The use of BSC enables employees to clearly appreciate their role, and focus on delivery of performance-related measures that support organisational strategy; clarity of role appears to have a positive influence on the achievement of the organisation’s business plan and excellence goals regarding the delivery of customer service.
Bianchi and Montemaggiore (2008)/SDR	Use of BSC and improvements in the planning process	Descriptive case study approach Institutional theory	Case study in municipal water company in Italy	The use of “dynamic” BSCs can significantly improve the planning process in a strategic learning perspective.

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Author (year)/journal	Key issues addressed	Theory	Research methods	Key findings
Daniel et al. (2011)/JBR	Rationale for adopting BSC management practices		Four case studies in retail bank, county council, hospital, and police force	Earlier adoption of management practice is associated with political and psychodynamic rationales working. Political and dramaturgical rationales are associated with more rapid adoption due to influential individuals or groups acting as champions.

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