

BALANCED SCORECARD: IS IT BENEFICIAL ENOUGH? A LITERATURE REVIEW

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ABSTRACT

Purpose of the Research: This study reviews and evaluates the development of research on the balanced scorecard.

Design/ Methodology/ Approach: This is a literature study of 71 articles from 21 Scopus Q1 indexed journals. The issuance year was ignored, yet the search area was restricted to business, management, and accounting. The analysis is grouped into three parts, namely BSC in private sectors, BSC in public sectors, and criticism for BSC. In private sectors and SMEs, the theme is divided into benefits of BSC, implementations of BSC, limitations and other tools to improve BSC. **Research finding:** Although a large number of academics are sceptical about the relationship between BSC and organisational outcomes, BSC is widely used. Practitioner-oriented literature shows that it has useful values especially in improving organisational performance and strategy attainment. Based on the findings of empirical results in the private sector, SMEs, and the public sector, it can be inferred that the implementation status of the balanced scorecard shows a high level of success and minimal failure.

Theoretical contribution/ Originality: The BSC has limitations, yet these findings show that BSC is beneficial enough.

Practitioner/ Policy implication: The BSC remains worth considering for a performance management system.

Limitation/ Implication: This literature review is limited to specific quality ratings of the academic journals.

Type of article: Literature review

Keywords: Balanced Scorecard, Kaplan and Norton, Management Accounting, Literature Review

JEL Classification: M21, M41

1. Introduction

This study reviews the literature on the balanced scorecard based on articles published in Scopus first-ranked (Q1) indexed journals. Since its introduction by Robert Kaplan and David Norton (KN) in 1992 (Kaplan & Norton, 1992), there has been considerable attention from the management and business communities on the balanced scorecard (BSC). The BSC was introduced as an integrative device capable of encouraging and facilitating senior managers of organisations in the utilisation of non-financial information, where they may opt in to have non-financial measures driven largely by what is considered “strategic” considerations. In their opinion, managers will have the capability to deliver greater strategic performance when they are accommodated with this better

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information (Kaplan & Norton, 1992). Initially, balanced scorecard was developed for private enterprises (Kaplan & Norton, 1992). A few years after its introduction, many firms in the West admitted that they had applied this model (Speckbacher, Bischof, & Pfeiffer, 2003). From merely a means of management reporting, BSC has grown into a strategic measure used by executive teams for strategy formulation, operation alignment, and communication with stakeholders, both internal and external (Gumbus & Lyons, 2002).

The success of the BSC has been enormous, and companies all over the world widely adopt this method. Kurtzman (1997) mentioned that some of Kaplan and Norton's KPIs were employed by no less than 64 per cent of companies in order to assess their performance. Further, this comprehensive use was noticed by researchers who were then encouraged to form theories about BSC and test its effectiveness. This area of research is ongoing and BSC (see, for example, Atkinson, 2006) is deemed the dominant framework in the domain of performance management, despite the fact that the literature recognises its weaknesses. Until 1998, articles published concerning this field were typically normative and full of expectations and hopes (Johanson, Skoog, Backlund, & Almquist, 2006).

In BSC, a strategy map is used to depict the causal model of an organisation's strategy in a graphical representation (Kaplan & Norton, 1996; Nørreklit, 2000). From this map, the internal processes undergone by an organisation to gain the result as it expected may be revealed (Kaplan & Norton, 2004). However, some researchers contend that there is no method to develop such a model (Malmi, 2001; Speckbacher, Bischof, & Pfeiffer, 2003). The struggle in observing the causal model of a strategy partly results from the limitation of the strategy map itself (Othman, 2008). The central idea of BSC is developing a causal model of the strategy, but as discovered by Davis and Albright (2004), 77 per cent of firms adopting BSC in the USA reportedly failed to accomplish this objective. This failure is confirmed in researches on BSC adoption in Finland, Austria, Malaysia, and Germany (Malmi, 2001; Othman, 2006; Speckbacher et al., 2003).

Even though its adoption has expanded, the implementation of BSC has yielded varied results, from success, no actual results, to being completely unsuccessful (For example Malagueño, Lopez, & Gomez, 2018; Llah, 2017; Bento, Mertins, & White, 2016). A growing body of literature is dedicated to identifying the limitations on BSC, specifically its concept (Neely et al., 2004; Nielsen, Lund, & Thomsen, 2017, Massingham, Massingham, & Dumai, 2018), application (Voelpel, Leibold, & Eckhoff, 2006), and practice (Hoque, 2014). Such limitations may impair the effectiveness of BSC or lead companies to completely leave BSC to find alternatives for better performance measurement.

There have been numerous criticisms directed at BSC (Bessire & Baker, 2005; 2004; Dinesh & Palmer, 1998; Nørreklit, 2000, 2003; Nielsen, et al., 2017). Some argue how it lacks norm of human relations in the implementation, whereas others highlight a tendency it creates to treat organisations to mechanistic systems from the analogue system (Bessire & Baker, 2005; Dinesh & Palmer, 1998). Intriguingly, although not surprising, issues brought up in articles about the BSC implementation are nothing unique to BSC. They are general to the change of management control (Johanson, et al., 2006).

How BSC becomes static and overlooks the external environment is another concern noted by critics (Nørreklit, 2003; Voelpel, Leibold, & Eckhoff, 2006). Those traits are related since this staticism appears somewhat on account of the internal focus of BSC. When the dynamism of the external environment is not taken into account when the thinking of BSC, it inclines towards creating measures that are separated from reality (Othman, 2008). Apart from the role of BSC in assisting organisations in the implementation of their strategies, they remain unable to cope with any changes that can influence such strategies. Inspired by the above, this study examines the benefits, implementation, limitations, and critique of the concept and practice of the BSC.

Following this section, section two presents the databases and methods used to map out the articles with the topic of the balanced scorecard. Section three categorises and analyses the result into three theme groups (BSC in private sector, BSC in the public sector, and criticism of BSC). In the private sector, the theme is divided into the benefit of BSC, implementation of BSC, limitation and other tools to improve BSC. Section four summarises and concludes the results.

2. Method

2.1. Article Selection

We identified articles with BSC topics published in Scopus first-ranked (Q1) indexed journals, as we focus on examining BSC literature published in highly qualified and reputable sources. The underlying basis for the analysis of Q1 journals owes to the fact that these journals are more qualified and have better classifications (Galindo et al., 2018), in addition to higher impact as confirmed by the SJR indicator (Ennas & Di Guardo, 2015). In acquiring the articles, we conducted an online search at Scimago.com. The years of research were ignored to evaluate the development of the literature on BSC from the beginning BSC issue became material for discussion in journals which occupied Q1 until now. We limited the search area in business, management, and accounting, and categories in those fields (miscellaneous). This limitation was intended to discover the development of BSC literature, especially in the said domains. There were 72 journals categorised as Q1. We acquired 71 articles from 21 journals on the balanced scorecard. Table 1 displays the distribution of articles that satisfy the criteria in each journal.

Table 1. Distribution of Articles in Various Journals

No.	Journals	No. of Papers	Author(s)
1	The Accounting Review	5	Banker et al. (2004); Cheng and Humphreys (2012); Lipe and Salterio (2000); Tayler (2010); Itner (2003)
2	Journal of Accounting Research	3	Bude (2007); Chen, et. al (2016); Ding and Beaulieu (2011)
3	Accounting, Organisations, and Society	1	Nørreklit (2003)
4	Critical Perspective on Accounting	4	Bessire and Bakker (2005); Lawrence and Sharma (2002); Hoque (2003); Upton and Arrington (2012)

Table 1. Continued

No.	Journals	No. of Papers	Author(s)
5	Accounting, Auditing, and Accountability Journal	2	Johanson et al. (2006); Modell (2009)
6	Contemporary Accounting Research	2	Busco and Quattrone (2015); Cooper and Qu (2017)
7	Management Accounting Research	5	Davis and Albright (2004); Malmi (2001); Speckbacher et al. (2003); Ax and Bjørnenak (2005); Nørreklit, H. (2000)
8	Meditari Accounting Research	1	Vermaak and Cronje (2001)
9	Measuring Business Excellence	10	Basu et al. (2009); Jayashree and Hussain (2011); Lim and Chye (2001); Rich (2007); Urrutia and Ericson (2005); Marr and Adams (2004); Ahn (2005); Wongrassamee (2003); Ahn (2005); Gurd and Ifandoudas (2014)
10	Journal of Intellectual Capital	6	Wu (2005); Bose (2007); Mouritsen et al. (2005); Voelpel (2006); Nielsen et al. (2017); Massingham et al. (2018)
11	Management Decisions	4	Atkinson (2006); Llach et al. (2017); Othman (2006); Dinesh and Palmer (1998)
12	Journal of Small Business Management	1	Gumbus and Lussier (2006)
13	Business Process Reengineering and Management	1	Letza (1996)
14	International Journal of Productivity and Performance Management	12	Barnabe (2011); Valmohammadi (2011); Behery et al. (2014); Chen et al. (2008); Lawrie and Cobbold (2004); Perkins et al. (2014); Schneider and Vieira (2010); Thakkar (2007); Gurd and Gao (2007); Othman (2008); Perkins and Remmers (2014); Moullin (2017)
15	International Journal of Hospitality Management	2	Elbanna et al. (2015); Kang et al. (2015)
16	Journal Business Ethics	2	Bento et al. (2016); Hansen &Schalttegger (2016)
17	Journal of Knowledge management	1	Hu et al. (2015)
18	Total Quality Management & Business Excellence	3	Andjelkovic and Dahlggaard (2013); Chiang and Lin (2009); Garengo and Biazzo (2012)
19	Total Quality Management	4	Dror (2008); Chang et al. (2008);
20	Small Business Economics	1	Malagueño et al. (2018)
21	Family Business Review	1	Craig and Moores (2005)
	Total	71	

Table 2. Classification of literature on Balanced Scorecard

No.	Author	Year	Method	Theme
1	Ahn	2005	Case study	Individualised BSC
2	Asan and Tanyas	2007	Literature review	Integrating BSC and HoshinKanri in higher education
3	Atkinson	2006	Literature review	Role of BSC

Table 2. Continued

No.	Author	Year	Method	Theme
4	Ax and Bjørnenak	2005	Literature review	BSC and diffusion of innovations
5	Banker et al.	2004	Experiment	Conditional use of strategy-linked measures
6	Basu et al.	2009	Case study	Application of BSC in infrastructure project
7	Behery et al.	2014	Qualitative case study	Performance management system in Fast-Growth SMEs
8	Bento et. al.	2016	Experiment	Financial bias in appraisal when CSR measures are used in BSC
9	Bernabe	2011	Case study	Development of dynamics BSC
10	Bessire and Bakker	2005	Critical Review	French Tableau de bord and BSC
11	Bose and Thomas	2007	Case study	BSC for better performance of intellectual capital
12	Budde	2007	Literature review	Incentive effect of BSC
13	Busco	2015	Literature review	Continuous unfolding of rationales for the use of BSC
14	Chang et al.	2008	Case Study	BSC in large hospital
15	Chen et al.	2016	Experiment	Visual attention in managerial judgement during BSC evaluation
16	Chen et. al	2008	Case study	Performance analysis using DEA and BSC
17	Cheng and Humpreys	2012	Experiment	Causal linkages between strategic objectives in the strategy map and performance measurement
18	Chiang and Lin	2009	Survey	Integration BSC and DEA
19	Cooper and Qu	2017	Interview	Popularising idea of BSC
20	Craig and Moores	2005	Action research project	Adoption of BSC strategy in family business context
21	Davis and Albright	2004	Experiment	Effect of BSC on financial performance
22	Dinesh and Palmer	1998	Literature review	MBO and BSC
23	Ding and Beaulieu	2011	Experiment	Mood congruency bias
24	Dror	2008	Literature review	BSC in an individual organisation
25	Elbanna et al.	2015	Survey	A theoretical construct development of BSC and its empirical validation
26	Garengo and Biazzo	2012	Action research project	Performance Measurement System through BSC for SMEs
27	Gumbus	2006	Case study	BSC in SMEs
28	Gurd and Ifandoudas	2014	Action research	Usefulness of agility focused BSC
29	Gurd and Gao	2007	Literature review	BSC in the health care sector
30	Hansen and Schaltegger	2016	Literature review	Sustainability BSC
31	Hoque	2003	Literature review	TQM and BSC
32	Hu, et. al.	2015	Case study	Analytic Network Process (ANP) and BSC
33	Ittner et al.	2003	Survey	Overreliance on financial measures

Table 2. Continued

No.	Author	Year	Method	Theme
34	Jayashree and Hussain	2011	Literature review	BSC and aligning change deployment
35	Johanson et al.	2006	Critical review	Balancing dilemmas of BSC
36	Kang, et. al.	2015	Survey	The Sustainability BSC (SBSC) and CSR
37	Lawrence and Sharma	2002	Case Study	BSC & TQM in University setting
38	Lawrie and Cobbold	2004	Literature review	The changes to the definition of what constitutes of BSC
39	Letza	1996	Case study	Design and implementation BSC in three company
40	Ling and Chye	2001	Survey	strategic performance measurement by BSC
41	Lipe and Salterio	2000	Experiment	Common measure bias
42	Llah et al.	2017	Survey	Further research on the BSC model
43	Malagueño et al.	2018	Survey	Balance scorecard in SMEs
44	Malmi	2001	Interviews	Applied BSC in Finland
45	Marr and Adams	2004	Literature review	BSC and intangible asset
46	Mashingham et al.	2018	Conceptual review	A new learning and growth perspective for the BSC
47	Mehralian et al.	2017	Survey	Relationship TQM with BSC
48	Modell	2009	Case study	Experimenting with TQM and BSC in governance
49	Moullin	2015	Case study	Improving and evaluating performance with the public sector scorecard
50	Mouritsen et al.	2005	Literature review	The differences between TQM and Intellectual Capital
51	Nielsen et al.	2017	Critical review	Killing the balanced scorecard to improve internal disclosure
52	Nørreklit	2003	Critical review	Rhetorical analysis of BSC
53	Nørreklit	2000	Critical review	Cause and effect of four perspective of BSC
54	Othman	2006	Survey	BSC adoption experience among Malaysian companies
55	Othman	2008	Literature review	Effectivity of BSC
56	Perkins and Remmers	2014	Literature review	Subsets of BSC into three generations
57	Perramon et al.	2016	Survey	Create value through BSC
58	Andjelkovic and Dahlgaard	2013	Survey	Combined roadmap of BSC and EFQM model
59	Rich	2007	Experiment	Human interpretation of performance management using BSC
60	Schneider and Vieira	2010	Action research study	Implementation of BSC at a wind farm company
61	Soderberg et al.	2011	Survey	A taxonomy of BSC
62	Speckbacher et al.	2003	survey	Analysis on The Implementation of BSC
63	Taylor	2010	Experiment	Involvement in scorecard implementation
64	Thakkar et al.	2006	Interview	Development of BSC: An integrated approach of ISIM and ANP
65	Upton and Arrington	2012	Experiment	Racial prejudice in BSC performance evaluation

Table 2. Continued

No.	Author	Year	Method	Theme
66	Urrutia and Eriksen	2005	Literature review	BSC in Spanish private health care management
67	Valmohammadi and Servati	2011	Case study	Combined approach of BSC and statistical method
68	Vermaak and Cronje	2001	Survey	BSC in accounting education
69	Voelpel et al.	2006	Critical review	Major problem areas of BSC
70	Wongrassamee et al.	2003	Critical review	Similarities and differences between BSC and European Foundation for Quality Model (EFQM)
71	Wu	2005	Case study	Integration BSC and intellectual capital

Table 3. The Categories of Methods Used by Researcher

No	Methodology	Number of Papers	Percentage
1	Literature Review	17	23.9
2	Case Study	15	21.1
3	Experiment	10	14.08
4	Survey	15	21.1
5	Critical Review	7	9.86
6	Conceptual Review	1	1.4
7	Action Research	3	4.2
8	Interviews	3	4.2
	Total	71	100

Table 4. Organisation/Setting of the Empirical Research

No	Setting	Number of Papers	Percentage
1	Private Sector	37	80
2	Public Sector	5	11
3	SMEs	3	7
	Total	45	100

2.2. Articles Identification

Subsequently, we classified the articles by the author alphabetically, the method used, and the theme. The classification of the articles is shown in Table 2. We identified the categories of the method used by the researcher in each article. Overall, there were 71 articles, 45 of which employing empirical research and the remaining applying critical review, literature review, and conceptual review. The details of the methods used, and the setting of empirical research are set out in tables below. We obtained 71 articles, 45 of which were classified as empirical researches. From these empirical researches, 37 articles (80 per cent) were made by employing the setting of the private sector and three articles (7 per cent) of SMEs.

3. Discussion

3.1. Balanced Scorecard in Private Sector and SMEs

We grouped the articles created by occupying the setting of the private sector and SMEs based on the reviews of benefits, implementations, limitations and other tools to improve BSC, as discussed below.

3.1.1. *Benefit of Balance Scorecard*

BSC was originally used to measure performance (Kaplan & Norton, 1992). When using BSC for such a purpose, firms focused on finance, customer, internal process, and learning and growth metrics (Kaplan & Norton, 2001). With these metrics measured, firms can identify all significant qualities of their strategy and improve partnership and teamwork continuously. In BSC, financial metrics are the most substantial measure of a firm's performance. Ding and Beaulieu (2011) found that in balanced scorecard, financial incentives can serve as a motivation for decision-makers to correct mood congruency biases. Whereas, David and Albright (2004) saw superior financial performances in branches that implement BSC in comparison with those that do not. Apart from its deficiency in the empirical testing of its benefits (Nørreklit, 2000; Speckbacher et al., 2003), it can be said that balanced scorecard is a framework commonly applied in terms of performance management (Marr & Schiuma, 2003). The balanced scorecard is applied extensively as a tool for organisations to measure performance and implement strategy (Soderberg, Kalagnanam, Sheehan, & Vaidyanathan, 2011). Research has demonstrated that managers, either within or across organisations, may view the BSC differently, simplifying that the systems of performance measurement put into practice in organisations may be different from the construct proposed by Kaplan & Norton. Perkins, Grey and Remmers (2014) provided a classification for the different version of BSC, allowing a more distinctive analysis of BSC as a performance management tool. BSC measures internal processes as well to focus on the operations that improve customer satisfaction, also to highlight innovation and learning so that the employees' skill may improve and superior process of internal business can be achieved (Bose & Thomas, 2007). After analysing the mediating effect of internal processes and customers, Llach, Bagur, Perramon, and Marimon (2007) found that both contribute significantly to financial results. Consistent with the spirit of BSC, non-financial performance measures appear to take a leading role in the financial institution valuation (Wang, 2005). Via BSC, manufacturing plants can perform better after strategically associating their corporate objectives with their systems of performance measurement (Ling & Chye, 2001).

The use of BSC is a measure suitable for understanding the value creation through investing in human resources (Perramon, Rocafort, Bagur, & Llach, 2016). Also, Bose and Thomas (2007) signify the importance of learning and growth for strategic management so that the performance of intellectual capital may be identified, improved, and made better. An increasing intellectual capital is paramount to establish innovative product designs, production, distribution, and promotion in addition to enhance the market value of an organisation exceeding the value of its tangible asset base. Another common use of BSC is project management. Basu, Little, and Millard (2009) contended that for project managers, the principal aspect of BSC is creating tangible performance measures from projects tasks. In this way, project managers may be assisted in monitoring the progress of project performance and also identifying tasks that are overdue, tasks that demand greater resources and skills, and knowledge that is necessary to perform specific tasks.

The BSC framework, including performance measures classified by the perspective of the scorecard and strategic objectives provided in the form of a strategy map, may likely improve the strategic awareness of managers, thus supporting them in performing evaluation and revision of organisational strategies (Kaplan & Norton, 2001). Apart from the benefits claimed, minimum empirical research has examined the roles of the BSC framework in facilitating decisions (Sprinkle & Williamson, 2007). For example, Cheng and Humphreys (2012) found that the BSC framework has diverged decision-facilitating impacts on strategic judgements of managers. Tayler (2010) concluded that constructing scorecard perspectives as a causal chain reduces motivated reasoning biases when managers evaluate their strategic initiatives by taking into account internal information.

Integrated and strategic management tools introduced by BSC can be used to measure and review changes and to manage the change process (Jayashree & Hussain, 2011). Moreover, BSC has the capability of addressing the key problem connected with the implementation of strategy, including communication, the function of middle managers, and integration with the existing control system (Atkinson, 2006). Apart from some judgements and queries regarding the balanced scorecard approach, many of them appear to serve as issues of practical application, not as fundamental flaws (Atkinson, 2006). There is evidence showing the maturing approach taken by organisations to implement a scorecard (Speckbacher et al., 2003), and that there is more and more guidance on constructing measures (Kaplan & Norton, 2001, 2004).

3.1.2. Implementation of Balanced Scorecard

The effects of BSC on organisational performance in several empirical studies of articles reviewed in this study have different levels of clarity in terms of the way they were assessed and reported. From 40 identified empirical researches in private sector and SMEs, there are 12 articles (30 per cent) of these empirical studies which illustrated increases in the financial performance measures following the adoption of BSC, comprising Davis and Albright (2004), Ling and Chye (2001), Lopez-Valeiras, and Gomez-Conde (2018), Craig and Moores (2005); Perramon et al., (2016), Wu (2005), Garengo and Biazzo (2012), Gumbus and Lussier (2006), Chang (2008), Chiang and Lin (2009), Andjelcovic and Dahlgaard (2013), and Gurd and Ifandoudas (2014).

On the other hand, five other articles (12.5 per cent) reported failure in the above matter, comprising of Behery (2014), Bento (2016), Letza (2004), Malmi (2001), and Speckbacher et al. (2003). The remaining 23 articles (57.5 per cent) are less representative as the methodology, and the data collection are not sufficiently detailed. In other words, there is limited evidence demonstrating the success of BSC implementation. To date, studies examining the association of non-financial measures and financial performance measures have concluded various results. As one possible cause, Davis and Albright (2004) believed that this may be attributed to the minimum coherent linkage between the measures selected for the performance system and the financial measure of interest being targeted.

The implication of the use of the balanced scorecard (BSC) has been studied empirically mostly in large firms. Advocates of BSC have advised that SMEs might

benefit largely from the use of BSC (Kaplan and Norton, 1996). However, previous findings are not easily applicable to the literature of small business (Malagueño et al., 2018). The analysis of the studies on performance measurement systems for SMEs reveals a glaring contradiction: on one hand, there is evidence that these enterprises encounter difficulties in rationalising their operational practices as well as strategic processes. On the other hand, there are methodologies proposed by scholarly literature for the implementation of such a system based upon a top-down approach so that the strategies applied are actionable with minimum consideration to the tendency of small enterprises disregard the formalisation of their strategic choices (Garengo & Biazzo, 2012).

From 201 SMEs surveyed in Spain, Malagueño et al. (2018) exposed that firms implementing BSC for feedforward control obtained better performance in their finance and they could present exploitative innovation in higher levels. Also, BSC is used by more than half of 1000 companies to improve their performance, and the benefit of this management tool can be gain by SMEs as well as it is exceptionally different but functional for them (Gumbus & Lussier, 2006). As for family business, they can take benefit of a BSC strategy map to professionalise their management (Craig & Moores, 2005). Dror (2008) proposed a methodological approach based on Quality Function Deployment (QFD) to improve the implementation of BSC in individual organisations. He found that BSC initiatives are also already present in Fast-Growth SMEs (FGSMEs). However, such initiatives are not clearly linked nor directed towards the effective implementation of the BSC system.

As performance management systems, balanced scorecard and intellectual capital incorporate financial and non-financial indicators, where both are combined closely to the firm's strategy. There are remarkably different notions of strategy that become the ground for the balanced scorecard and the intellectual capital approach. They cause the behaviour of such comprehensive performance management systems to vary greatly in terms of their proximity one and another (Mouritsen, Thorsgaard, & Bukh, 2005). By using BSC, the creation, formation, and measurement of Strategic Intellectual Capital (SIC) are possible. It also enhances the reporting for SIC; BSC's financial, customer, internal process, and growth and learning perspectives can reinforce the management of IC (Wu, 2005). Bose and Thomas (2007) provided an example of a BSC-implementing company that can deal with the requirement of investing in knowledge and management skills by discussing how a newly appointed CEO of The Foster's Brewing Group handled their declining performance by several initiatives, including the adoption of balanced scorecard approach for the management.

In Sweden, other administrative innovations have been added to supplement the original BSC, which has also been accommodated to adapt with the on-going business culture so that it may create a potentially more attractive set of elements. From a certain point of view, this serves as a mode-setting process influential in the diffusion of BSC (Ax & Bjørnenak, 2005). In the hotel context, Elbanna, Eid and Kamel (2015) sought to develop a customised organisational performance scale with particular emphasis on BSC perspectives. The findings suggest that managers do make a meaningful distinction between the five aspects of hotel performance. In project management, when compared with operation

management, the application of balanced scorecard concept by Kaplan and Norton is less common (Basu et al., 2009). Systematic new evidence was found by Speckbacher et al. (2003) on the application of BSC. Their classification of BSC types were intended (1) to enable theoretical discussion of BSC concept in a more structured and concrete manner and (2) acquire a systematic empirical overview of how the BSC concept is implemented in companies.

3.1.3. *Limitation and Another Tool to Improve Balanced Scorecard*

Most academics have accepted BSC, and numerous practitioners in industry have adopted this approach (Mistry, 2003). Nevertheless, it has major limitations as discussed in the literature (Othman, 2006). The deficiency of formal methodologies applied, and subjective measures often lead to short-term financial measures as a focus (Chiang & Lin, 2009). Also, Dinesh and Palmer (1998) found that partial implementation would still be a problem for a balanced scorecard. Not only is BSC a relatively complex, it is also a costly measurement system. How cognition affects the use of BSC needs to be acknowledged in order to understand that BSC's potential benefits can be limited by cognitive capabilities and characteristics of managers, for example, the focus on standard measures impairs how a scorecard is held and implemented by each business that uniquely captures its strategy as it becomes one of the primary benefits of BSC to embrace (Lipe & Salterio, 2000). Under a complete verification, a balanced scorecard that is properly designed can entirely align the interests of owners and employees. This is possible with the help of an explicit contract. From the studies from field and experimental accounting on the BSC application to evaluate performance, there is evidence regarding its limitation, i.e. judgemental effects (Lipe & Salterio, 2000; Banker & Cheng, 2012), and subjectivity (Ittner, Larcker, & Meyer, 2003). It is also found that the measures in the scorecard are not considered equally by managers (Rich, 2007).

Change is needed in the BSC because, as Nielsen et al. (2017) argue, the BSC is "dead" and needs to be replaced with new methods of intangible asset disclosures (IAD). With the methodical improvement introduced by the development of BSC, this approach is promising towards the establishment of individualised BSC. It is evident that such an approach requires elaboration so that it presents a more thorough procedure (Ahn, 2005). At wind farm organisations, the improvement of BSC concept is possible through customisation of the four typical perspectives, by adding other perspectives, such as suppliers, community, government, or others alike, that encourage awareness about stakeholders (Schneider & Vieira, 2010). With a new perspective of learning and growth for the balanced scorecard (BSC) which covers more specific measures of integrated thinking and value creation, integrated reporting can be further improved (Mashingham et al., 2018).

To improve the limitations of BSC and provide more useful information for managers, another tool can be integrated or combined with BSC, for example integration of BSC and EFQM (European Foundation for Quality Management) (Andjelcovic & Dahlgaard, 2013; Wongrassamee, Simmons, and Gardiner 2003), Analytic network process (ANP) and BSC (Hu, Wen, & Yan, 2015), TQM and BSC (Hoque, 2003; Mehralian, Nazari, Nooriparto, & Rasekh, 2017), statistical methods and BSC (Valmohammadi & Servati, 2011). DEA and BSC (Chiang & Lin, 2009; Chen, Chen, & Peng, 2008). Wongrassamee, Simmons, and Gardiner (2003)

suggested that the key factor for success in applying EFQM and BSC to an organisation is correlated to the matter of how to decide adequate measures. For TQM-adopting firms, they will deal with this oversight. As a result, employee satisfaction will be improved and eventually so too will firm performance (Hoque, 2003), while TQM implementation can positively influence BSC and its four perspectives (Mehralian, Nazari, Nooriparto, & Rasekh, 2017).

Thakkar, Deshmukh, Gupta and Shankar (2007) suggested that the use of Interpretive Structural Modelling (ISIM) and Analytic Network Process (ANP) as a mixed approach of cause and effect can resolve a number of the deficiencies in terms of BSC development in accordance with the real case found in a company. To promote strategic decision-making, it is possible to use system dynamics modelling principles to manage some limitations of the original BSC framework in a positive manner (Barnabe, 2011). Together, statistical methods and BSC can help organisations to plan and execute a system with sound performance (Valmohammadi & Servati, 2011). Chiang and Lin (2009) tried to formulate an integrated framework where the basic concepts of balance scorecards (BSC) and data envelope analysis (DEA) are embraced for measurement. The result proved that BSC and DEA complete one another (Chiang & Lin, 2009) and generate measures of technical efficiency for Taiwanese banks (Chen, Chen, & Peng, 2008). Being the heart of an organisation's focus, agility can be achieved through a modified balanced scorecard system (Gurd & Ifandoudas, 2014). This modification can be introduced into the original BSC by explicit consideration of environmental, social, or ethical issues, which is often known as sustainability balanced scorecard (SBSCs). Viewing the Sustainability Balanced Scorecard (SBSC) as a concept to assess the perceived importance of relationships between CSR and business performances, Kang, Chiang, Huangthanapan, & Downing (2015) emphasised that CSR has a significant influence on BSC. Hansen and Schaltegger (2016) observed that modifications with sustainability orientation of BSC architecture are motivated by instrumental, social/political, or normative theoretical perspectives, capable of being mapped with generic SBSC architectures typology. Bento, et al. (2016) examine the use of CSR measures in BSC from the perspective of ideology, concluding that when CSR measures are used in BSC, there is a financial bias in decisions on appraisal and bonus.

3.2. *Balanced Scorecard in the Public Sector*

We obtained 45 articles as empirical research, five of which were made by employing the setting of the public sector. 2 (40 per cent) out of these five researches reported success in the adoption of BSC, i.e. Modell (2009) and Moullin (2015). Whereas, only 1 (20 per cent) of those five reported otherwise, i.e. Lawrence & Sharma (2002). The original BSC (Kaplan & Norton, 1992) has four perspectives (financial, customer, internal business process and learning and growth). Over time, other perspectives were included, such as sustainability (Brignall, 2002). In the development of the literature, Kaplan and Norton (2001) introduced a perspective called "mission" for non-profit organisations. The performance of non-profit organisations cannot be measured by financial indicators, instead by their effectiveness in providing benefits to constituents. For non-profit organisations, modifications must be made to BSC so that it includes a mission

perspective (Urrutia & Ericson, 2005). Having proved successful in respect of non-profit organisations (Kaplan & Norton, 1996, 2001), the BSC should also serve as a management technique with a similar value in the field of accounting education. Vermaak and Cronje (2001) supported the potential applicability of the balanced scorecard as an instrument to guide, stimulate, and sustain efforts of planning and improvement in such an environment. Health care sector also receives advantages from balanced scorecard as it is evident to be strategic performance measurement systems (Gurd & Gao, 2007), as demonstrated by the successful development and implementation of BSC at hospitals in Taiwan (Chang, Tung, Huang, & Yang, 2008). In the UK, in order to help organisations, improve outcomes for service users and stakeholders without increasing overall cost, the Public Sector Scorecard (PSS) adapted and extended the balanced scorecard so that it may conform to the culture and values of the public and voluntary sectors addresses some critical success factors for performance management and in the public sectors (Moullin, 2015).

In the past two decades, a lot of innovations have taken place in management accounting and control practices, notably epitomised by notions such as cost-/activity-based management under the basis of activity and the balanced scorecard. Traditionally, as a supply-driven phenomenon, bundling has been used by propagators of particular innovations, as by consultants and trade associations, to further attract potential adopters (Ax & Bjørnenak, 2005). Balanced scorecard and HoshinKanri jointly have been successfully implemented (Asan & Tanyas, 2007), while Modell (2009) find both BSC and TQM encountered considerable implementation problems. Lawrence and Sharma (2002) argued that although market-based vocabulary, such as TQM and BSC among others, is presumed to introduce efficiency and effectiveness in organisations, their application jeopardises the very essence of education.

3.3. Criticism for Balance Scorecard

Since the beginning of BSC, it has evolved from a performance measurement tool to a performance management system (PMS), thanks to the contribution of numerous other authors. There is much confusion in the literature about the exact definition of the balanced scorecard. Due to its widespread use, researchers were enticed to theorise on and test the effectiveness of BSC (Llah et al., 2017). However, the correlation between its four areas of measurement has been questioned (Nørreklit, 2000); for example, the validity of BSC to perform as a strategic management control tool. In addition, a number of issues also appear which may have a connection with the usefulness of BSC as a tool for strategic management.

The evolution of BSC can be attributed to a greater innovation when compared to the original idea by empirical evidence of weakness in the instrument created (Lawrie & Cobbold, 2004). Early BSCs failed as they pose a major challenge to design appropriately, partly due to the poor characterisation of an effective BSC (Busco & Quattrone, 2015). Kaplan and Norton were unable to recognise the large body of literature of intangible asset and therefore potentially leading to a confusing classification of such an asset (Marr & Adams, 2004). The BSC is reported to require financial and non-financial performance measures to be integrated in order to support its purpose, namely strategy implementation, performance

increase, and strategic decision-making improvement (Kaplan & Norton, 1992, 1996). Although the BSC may not produce results as expected (Davis and Albright, 2004), the unanticipated effect is often generated, beyond the expectation of its designers (Busco & Quattrone, 2015). BSC appears to unfold continuously because of the constantly changing rationales for its use (Malmi, 2001; Speckbacher et al., 2003; Busco & Quattrone, 2015). Nørreklit (2000) argued the ability of BSC as a strategic control tool. Alternatively stated, there is nothing meaningful in studying economic benefits of BSC adoption without taking into account on how they are used. For example, with a purpose of acknowledging the application of BSCs in Finland and why companies adopt them, Malmi (2001) found that connecting measures based on assumed causal relationships were poorly understood by the early adopters of BSC.

Upton and Arrington (2012) discovered tendencies to unintentionally let racial prejudice intervene in the evaluation of balanced scorecard performance. Bessire and Bakker (2005) undertook a critical analysis of balanced scorecard and *Tableau de bord*, pointing out a complementarity between the two. There is a great expectation that BSC solves many relevance problems related to management accounting and control practices. However, nothing answers the question as to whether BSC really helps to deal with weaknesses as abstraction, short-sightedness, monetary orientation, oversimplification, and lack of focus on intangible factors in the organisation. Thus, there is a need for further discussion and research on this predicament (Johanson et al., 2006). Nørreklit (2003) has a point of view on BSC text, questioning its convincing capabilities and persuasiveness, as well as arguing how it is a feature characteristic of management guru text, how the model it proposes is not so innovative, and how it lacks a reliable theoretical base.

Cooper, Ezzamel and Qu (2017) proposed that it is important to understand that how accounting innovations, such as BSC, are labelled as success or failure influences their development, whether or not they deliver improvements in organisational performance as promised. As the rapid developments of the last decade suggest, the evolution of management accounting concepts appears as if it has failed to follow both developments in technology and business evolution (Nielsen, Lund, & Thomsen, 2017). Lately, there has been tremendous growth in the business globally. An increasing need for data access and the development of internet-based technology have led to the growth of new business types. Therefore, in due course, BSC has become an outdated means of managerial concept and tool (Voelpel et al., 2006). He stated that BSC has functioned as what is called a "straitjacket" measurement, being a tyranny putting the survival of firms at risks, interrupting business ecosystem innovation needed most, thus impairing customer value rejuvenation, benefits received by shareholders, other stakeholders, as well as societal benefits in general. Nielsen et al. (2017) introduce a critique of concepts proposed at the time of BSCera over the last 25 years. Whereas, in the last decade, managerial concepts are thriving with business models and new ways of creating value for customers in mind. In fact, performance measurement has been abandoned or less managed since BSC was introduced (Kaplan and Norton, 1992) almost 25 years ago. Their research then contributes in a timely manner to the field of performance measurement in the era

of disruptive business models, such as Uber, and numerous upcoming financial technology companies.

4. Summaries and Conclusion

Since the BSC was first created by Kaplan and Norton (1992), there has been a lot of confusion about the exact definition of the balanced scorecard. Several criticisms and questions about the balanced scorecard approach arise. This study aims to review the BSC literature from articles published in the first rank Scopus indexed journal (Q1). Although a large number of academics are sceptical about the relationship between BSC and organisational outcomes, BSC is widely used, and practitioner-oriented literature shows that it has useful values especially in improving organisational performance and strategy attainment. Based on the findings of empirical results in the private sector, SMEs, and the public sector, it can be inferred that out of 45 articles of empirical research of the organisations investigated in terms of the balanced scorecard implementation, 14 (31 per cent) gained a high level of success, 6 (13 per cent) failed, and 56 per cent were not representative as the methodology and data collection were not detailed enough. These results conclude the implementation status of the balanced scorecard shows a high level of success and a little of failure.

BSC has limitations, yet these findings show that BSC is beneficial enough. It is reinforcing the view that the BSC remains worth considering for a performance management system. This literature review is limited to the specific quality ratings of academic journals. Studies from other quality ratings from academic journals or conference presentations may have been ignored. Furthermore, other exclusion criteria, namely search restrictions, might lead to ignoring some relevant research.

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