Contributions to Environmental Sciences
& Innovative Business Technology

Hashem Alshurafat
Allam Hamdan
John Sands *Editors*

Sustainable Horizons for Business, Education, and Technology

Interdisciplinary Insights

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Preface

The book is a collaborative effort among esteemed contributors, who bring a wealth of expertise to explore sustainability across various realms. The book chapters are meticulously selected into three interwoven parts—Business, Education, and Technology—encapsulating a holistic view of sustainability that transcends disciplinary boundaries. The purpose of "Sustainable Horizons for Business, Education, and Technology: Interdisciplinary Insights" is rooted within this dynamic context.

The book begins with an exploration of sustainable horizons within the realm of business. Chapters in this section delve into the intricate fabric of economic sustainability, corporate responsibility, and the challenges and benefits of ESG reporting. From the meticulous review of balanced scorecard applications in public hospital settings to the critical examination of success factors in implementing sustainable business models, readers are invited to navigate through the nuanced landscape of green marketing strategies, unraveling the intricate motivations behind bank window dressing, and critically examine the strengths and weaknesses of integrated reporting.

The second part of the book examines education as a pivotal force shaping the minds of future leaders through the lens of sustainability. Chapters in this section articulate the pivotal role of education in fostering a mindset that is conscious of societal and environmental impacts, from courses fostering social entrepreneurship to the role of environmental orientation in sustainable innovation performance. A comprehensive exploration of sustainable finance, stakeholder theory, and the outstanding support structures for students pursuing social entrepreneurship courses collectively emphasize the role of education in fostering a generation of individuals committed to sustainable practices.

The final segment of the book explores the intricate relationship between sustainability and technology. Chapters in this section investigate the impact of technology on various facets of sustainability in an age dominated by digital transformation, fintech, and big data. Chapters explore the role of big data analytics in Jordanian commercial banks, explore the nexus between fintech and sustainability, and unravel the impact of information and communication technologies (ICTs) on food security in Jordan. The moderating role of accountants' capabilities in

the relationship between AIS and the quality of financial reporting is also scrutinized, emphasizing the symbiotic relationship between technology and sustainable business practices.

As we explore business, education, and technology, we realize sustainability is not one solid idea but a mix of different elements. The interdisciplinary nature of this book illustrates the interconnectedness of these domains, showing that progress in one area can have profound implications for others. This collection of insights serves as a call to action, reminding us that the challenges we face require collaborative, multidimensional solutions. Business leaders, educators, and technologists alike must come together to shape a path towards a sustainable future. It is our hope that the readers of this book find inspiration, knowledge, and, most importantly, a renewed commitment to fostering sustainable horizons in their respective fields.

As editors, we extend our sincere gratitude to the contributors for their scholarly contributions and to the readers for joining us on this intellectual journey. May this book serve as an inspiration, guiding us towards a future where business, education, and technology converge harmoniously for the betterment of our global community.

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Contents

Part I
Horizons for Business

Review of Balanced Scorecard Application in Public Hospital Setting

1

Salim Khaleel Khalid and John Sands

Abstract

The purpose of this study is to review the empirical studies that have discussed the balanced scorecard in public hospital settings to determine the potential future research opportunities. The study has highlighted empirical studies conducted in the context of both developed and developing economies for the period of 2003–2020. The study found that whether adopting BSC is useful for the public hospital sector is still unclear. Secondly, some BSC users still pay insufficient attention to non-financial measures. Finally, there are some steps and models to subsume environmental measures within BSC. However, most of these attempts are still theoretically normative and not yet verified empirically.

Keywords

Balanced scorecard • Public health sector • BSC perspectives

1.1 Introduction

Management accountants struggled to deal with non-financial measures until the introduction of the balanced scorecard (BSC) (Otley 2016). In general, accountants define BSC as a group of procedures to organise work practice and formalise

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performance (Cooper and Ezzamel 2013). The use of the BSC enables managers to share their strategy with all organisational members (Cheng and Humphreys 2012; Wiersma 2009). Cheng et al. (2018) state that the BSC helps managers to review their strategy as it is being achieved. The BSC enhances performance measurement judgements by providing decision-makers with a comprehensive set of financial and non-financial indicators (Humphreys and Trotman 2011). Whilst financial measures are presented in dollars or proportions of dollars, non-financial measures cannot be presented in dollars (Eldenburg et al. 2019). However, during this period, there was pressure on accountants to consider intangible assets as part of balance sheets (Kaplan and Norton 2001). Yet, three main reasons prevented responses to such calls. Firstly, there is no direct connection between growth in revenues and investment in intangible assets (Kaplan and Norton 2001). In other words, it is difficult, to determine an increase in profits which comes from using knowledge capital. Finally, some managers use non-financial measures to promote their performance in the best light (self-interest), not to create value for the organisation (Luft 2004).

Initially, the BSC was used to create and use a balance between financial measures and non-financial measures (Tayler 2010). More recently, the use of the BSC has been expanded to translate an organisation's strategy (Tayler 2010). In other words, a BSC is a modern performance management technique that is used to monitor and check the progress of strategy implementation (Campbell et al. 2018; Langfield-Smith 2018; Upton and Arrington 2012) Therefore, users of the BSC should define their strategic objectives (Tayler 2010). The BSC explicitly connects strategy with a group of performance indicators (Busco and Quattrone 2015). The BSC moves organisations from a narrow vision to a broad vision (Wong-On-Wing et al. 2007). In contrast to traditional performance measurement systems, the BSC is a holistic performance measurement system. It includes leading (non-financial) and lagging (financial) performance data (Dalla Via et al. 2019), qualitative and quantitative measures, internal and external stakeholders, representing a short-term and long-term view (Bartlett et al. 2014; Otley 2016).

Organisations must select strategic objectives for all BSC perspectives to implement successfully their strategies (Atkinson et al. 2012). Niven (2008) explained that "there is no hard—and—fast rule for the right number of objectives, but a useful guideline is less is more" (Niven 2008, p. 198). Each perspective may need to contain one to three strategic objectives (Chang et al. 2008). To ensure the strategic objectives can be accomplished, most organisations set dozens of initiatives (Niven 2008). These initiatives refer to the necessary steps, actions, and projects to implement the strategic objectives (Campbell et al. 2018).

The rest of this paper is structured as follows. Section 2 outlines the research method. Section 3 presents the findings. This is followed by conclusion and future research opportunities.

1.2 Research Method

In different countries, efforts have been made to comprehensively examine the balanced scorecard (BSC) in hospital settings. We searched for only empirical studies conducted in the context of both developed and developing countries for the period of 2003 to 2020 using search engines like Google, Scopus, Google Scholar, etc. However, in order to get a complete picture about BSC application in Canadian public health organisations, (Weir et al. 2009) answered many questions, including the following:

- Who should participate in choosing performance indicators?
- Who is or are the main stakeholder(s)?
- What kinds of performance indicators should be considered in the BSC?
- Should the four BSC perspectives be linked?

Accordingly, our study will use partially Weir and colleagues' perspective to present the findings under three main themes: the diffusion and usefulness of the BSC, perspectives of the BSC, and performance measures of the BSC.

1.3 Findings

1.3.1 The Diffusion and Usefulness of BSC for Public Health Organisations

In New Zealand, research has focused on the diffusion of BSC application in the public health segment (Northcott and France 2005). Similarly, in Taiwan, Wu and Kuo (2012) have examined the potential of using BSC to assess information technologies. Another study has highlighted the significance of BSC to enhance service delivery in an Irish Hospital Department (Smith and Loonam 2016). Likewise, a US study suggested that there is a need to include community health improvements into the hospital's BSC (Olden and Smith 2008).

Whether adopting BSC is useful for the public hospital sector is still unclear (Correa et al. 2014). Therefore, Correa et al. (2014) decided to investigate the significance of using BSC in two Brazilian hospitals, one public and one private. They asked administrators, doctors, and nurses who have used a BSC about their opinions regarding criticisms levelled at BSC (Correa et al. 2014). Their research found that the BSC was worthwhile to hospitals but the difficulty of establishing goals and the persistence of traditional budgetary processes were the main BSC obstacles (Correa et al. 2014).

1.3.2 BSC Perspectives for Public Health Organisations

The BSC developed initially focused the on for-profit organisations, with the four perspectives; financial, customer, internal process and learning and growth. In the public healthcare sector, the relationship between the financial perspective and customer perspective is interchangeable and reciprocal. For example, the general public, as taxpayers, pay taxes to government departments that then allocate funds to receiving agencies (hospitals), which is the financial perspective. Subsequently, the taxpayers receive benefits as customers when treated in hospitals. In this context, tax collection is seen as necessary to provide benefits to the community (Soysa et al. 2016). It is not an objective of public hospitals to generate profit but rather to maximise the efficient use of public funds (Kaplan and Norton 2001). Within the public healthcare industry, the internal business process perspective of the BSC identifies the critical internal processes, which are important for the achievement of the intended outcomes of the other perspectives (Figge et al. 2002a, b). This internal process perspective frequently reports indicators that reflect the efficiency and effectiveness of the agency (Butler et al. 2011a). The learning and growth perspective of the BSC contains indicators related to the capabilities and competencies among employees to enable the achievement of the intended outcomes of the other perspectives (Aidemark 2001). Healthcare organisations must continually assess their future needs and ensure that the intellectual capital and human resources components within their learning and growth perspective are sufficient to sustain their future survival (Epstein and Wisner 2001).

It is clear that BSC perspectives should reflect the characteristics of health organisations (Aidemark and Funck 2009; Funck 2007; Kober and Northcott 2020). In a recent Canadian study, it was noted that healthcare providers' proponents for the use of BSC have an interest in knowing which type and how many perspectives should be considered in the BSC (Porporato et al. 2017). Patients, employees, and processes are called the golden triangle of BSC in health organisations (Aidemark 2001), yet each health organisation has different numbers and different types of perspectives (Porporato et al. 2017). For example, in Sweden, Kollberg and Elg (2011) determined five BSC perspectives: patient/customer, process, development/future, employee and production/economic. A study conducted in a public Australian healthcare organisation by van de Wetering et al. (2006) found four perspectives: clinical business process, patient, quality and transparency, and information systems. These researchers observed that just two of the perspectives, clinical business process and patient, were similar to the original BSC perspectives (van de Wetering et al. 2006). In Hong Kong, public health organisations still use perspectives similar to the original BSC perspectives (Yuen and Ng 2012). Meanwhile, a recent African study revealed that community, finance, internal business process, and capacity building are perspectives in the BSC of African health providers (Bobe et al. 2017). Thus, it is evident that there are multiple ways of refining the BSC to accommodate the specific healthcare context.

In healthcare organisations, the meaning of balance relates to several matters. It relates to the balance between financial and non-financial measures, lead and

lag indicators, and internal and external performance sources. All these measures, indicators, or sources are expanded to form the balance between and among the BSC's perspectives (Aidemark 2001). In a series of case studies conducted in the public healthcare sector, Bobe et al. (2017) and Kollberg and Elg (2011) found that BSC perspectives were not prioritised but they were all equally significant. These organisations adopted the term "well-balanced perspectives" (Aidemark 2001).

It has been suggested that the names and contents of BSC perspectives need to be revised to be consistent with public health organisations (Behrouzi et al. 2014). For example, Behrouzi et al. (2014) concluded that patient perspective is too narrow and needs to be extended into community perspective. The community perspective covers citizens, high-risk groups, policymakers, etc. (Behrouzi et al. 2014). Furthermore, health organisations may create new BSC perspective(s) (Bisbe and Barrubés 2012). For instance, some organisations add a perspective for clinical outcomes (Bisbe and Barrubés 2012) or a people perspective (Funck 2007).

Similar questions were considered by Broccardo (2015) in a study conducted in Italy, which confirmed that Italian hospitals still use the four classical perspectives. Broccardo's (2015) research further observed that the highest number of indicators are within the customer perspective and internal processes perspective. Finally, while Bisbe and Barrubés (2012) concluded that the BSC helps to implement a public hospital strategy, Italian hospitals were found to employ the BSC as a control tool but not a translation strategy tool (Broccardo 2015).

Recently, the acknowledgement of organisations' responsibilities towards the environment has taken place in the wider community (Fernando and Lawrence 2014). Consequently, the significance of organisations' environmental activity or responsibility has imposed the need for public organisations to measure, monitor and disclose their environmental performance (Guthrie and Farneti 2008). Therefore, supporters of BSC have discussed various models to ascertain the environmental performance part of BSC (Bieker 2003; Butler 2011b; Figge 2002; Hahn and Figge 2018; Hansen and Schaltegger 2016, 2018; Kaplan et al. 2004). Some set up some steps and models to subsume environmental measures within BSC (Figge et al. 2002a, b). However, most of these attempts are still theoretically normative and not yet verified empirically (Nikolaou and Tsalis 2013). The most significant failure is the absence of standard guidelines on how to embed sustainability concerns, including those related to environmental issues, into BSC perspectives (Nikolaou and Tsalis 2013).

1.3.3 BSC Performance Measures for Public Health Organisations

The literature presents different suggestions with regards to the appropriate number of BSC indicators. For example, some researchers (Chang et al. 2008; Kaplan and Norton 1996a) suggest four or five measures for each perspective as a desired number of measures while for others, like Epstein and Wisner (2001), six measures

in each perspective would be an ideal number. Elsewhere research has found that the BSC typically contains 18–25 key measures (DeBusk et al. 2003). However, in a review study, Gurd and Gao (2007) found some health organisations included a range of 13–44 measures into their BSCs. Kollberg and Elg (2011) investigated how public health organisations in Sweden defined BSC measures. They concluded that the investigated public health organisations included 25 measures into their BSC, which supports the finding by DeBusk et al. (2003).

There is a positive relationship between the number of BSC measures and task complexity (Lipe and Salterio 2000). Multiple indicators also increase the cost and require more resources (Funck 2007). Furthermore, if managers include many indicators, their focus may get diverted from the most critical strategic objectives (Kaplan and Norton 1993). The complexity of health organisations is reflected in the complexity of selecting BSC indicators (Porporato et al. 2017). This means health organisations are struggling to establish which indicators should be included in the BSC (Bisbe and Barrubés 2012).

The BSC provides a framework to provide a more complete picture of the organisation's activities (Hall 2011). Quantitative and qualitative measures are needed to monitor and assess how a strategic objective is accomplished (Atkinson et al. 2012). In the meantime, capturing all desired business strategic objectives requires populating the BSC with a large number of measures (Lipe and Salterio 2000). However, the BSC is not solely a collection of critical financial and non-financial indicators (Ax and Greve 2017; De Geuser et al. 2009; Möller and Schaltegger 2005). Rather, it highlights a balance between a set of past performance indicators (lag indicators), and future performance driver indicators (lead indicators) that are useful for internal and external stakeholders (Atkinson et al. 2012; Hansen et al. 2009). Furthermore, the measures of the BSC are developed based on an organisation's vision and strategy (Kaplan and Norton 1996a). The best-balanced measures reflect the strategy of the organisation (Kaplan and Norton 2001). Nevertheless, many adopters of the BSC consider both strategically linked measures and non-strategically linked measures (Kaplan et al. 2012). In addition, some BSC users still pay insufficient attention to non-financial measures (Bartlett et al. 2014).

Moreover, while BSC organises its measures based on cause and effects relationships (Cheng et al. 2018), some organisations make a list of financial and non-financial measures that are not related to a cause-and-effect relationship (Cardinaels and van Veen-Dirks 2010). Some organisations may use measures that have objective links between the activities and the outcomes (quantitative measures) while other organisations may adopt more subjective measures (qualitative measures) or organisations have both types of measures.

For some BSC adopters, such as Chinese public hospitals, establishing performance indicators is still a big challenge (Gao et al. 2018). To fill this knowledge gap, Gao et al. (2018) have suggested some performance indicators that should be included in the BSC. Initially, experts in healthcare and performance measurement were consulted to develop a series of performance indicators (Gao et al. 2018). Around 25 experts, from administrative units, universities and hospitals,

were invited to evaluate the proposed BSC model (Gao et al. 2018). The analysis finally provided 36 indicators (Gao et al. 2018). In a similar vein, Hwa et al. (2013) set up criteria to develop BSC with the following performance indicators: measurable, validity of the data, and amenable to improvement (Hwa et al. 2013). Based on these criteria, 41 performance indicators were developed, which included 16 indicators chosen for the initial BSC (Hwa et al. 2013). Another US study in hospital settings highlighted the need to carefully define the most important performance indicators from a learning and growth perspective (Emami and Doolen 2015).

In Greece, the research also has been devoted to finding the most appropriate method in the selection of BSC performance indicators. Therefore, the Governmental Hospital of Didimoticho, in Greece, adopted a UTASTAR method to group 24 performance indicators into four clusters that represented the four performance perspectives of the BSC (Grigoroudis et al. 2012). In Italy, Lovaglio (2011) argued that structural equation models are more useful than other methods in determining hospital BSC performance indicators (Lovaglio 2011). In Canada and New Zealand, some research went further by investigating the relationship between the measures selected in the public hospital BSC (Kober and Northcott 2020; Porporato et al. 2017). While the research in Canada rejected the purported cause-effect relationship among leading measures and lagging measures in the hospital BSC (Porporato et al. 2017), the research in New Zealand asserted the statistically significant causal relationships (Kober and Northcott 2020).

In the same vein, the BSC in healthcare settings maybe subject to a certain amount of departmental judgement biases in selecting performance indicators (Chan 2006). Chan's (2006) research used the analytic hierarchy process and identified 39 indicators grouped into four classic perspectives of the BSC. It was found that of the large number of measures was considered important or necessary by different departments. Mackay Memorial Hospital, in Taiwan, is one example of an organisation implementing hospital BSC (Chang et al. 2008). Dyball et al. (2011)'s study in the New South Wales Department of Health in Australia asserted that the BSC cannot to be useful unless it is easy to understand and implement.

1.3.4 Main Characteristics of the BSC for Public Health Organisations

Three Swedish public healthcare organisations were examined to find the main characteristics of the BSC (Kollberg and Elg 2011). The main research question considered how public healthcare providers implement the BSC in their work practice. Kollberg and Elg's (2011) research acknowledged that BSC helped to enhance internal capabilities but not to implement the strategy. In 2014, another study investigated the implications of BSC on Chinese public hospitals' performance (Zhijun et al. 2014). This study affirmed that the BSC application improved both hospital performance and personal performance (Zhijun et al. 2014). On the other hand, in the UK, Chang (2007) explored implications and limitations of using the BSC

in the National Health Service (NHS). Chang observed that the BSC was considered to be symbolic, ceremonial, and adopted for seeking legitimacy, rather than to enhance performance (Chang 2007).

Although BSC research has quickly extended to the public hospital sector, little attention has been paid to investigating the relationship between BSC and neo-bureaucracy concepts (Oliveira et al. 2020). Oliveira et al. (2020) conducted a qualitative investigation into a Portuguese public healthcare provider, asking whether the operationalisation of the BSC included "neo-bureaucratic" concepts and whether the BSC implemented demonstrated a neo-bureaucratic approach. An neo-bureaucracy approach incorporates ideas that foster flexibility, collaboration, innovation and adaptation that softens hierarchical authority and help led to improvements in healthcare outcomes (Oliveira et al. 2020, p. 250). Their study identified nine bureaucratic themes evident in a Portuguese public healthcare provider, and the BSC used in that organisation demonstrated a neo-bureaucratic approach (Oliveira et al. 2020).

1.4 Conclusion and Future Research Opportunities

In recent years, a growing number of public healthcare providers have begun to use the BSC (Aidemark and Funck 2009; Bobe et al. 2017; Kollberg and Elg 2011; Oliveira et al. 2020; Smith and Loonam 2016; Soysa et al. 2016, 2019; van de Wetering et al. 2006; Weir et al. 2009; Yuen and Ng 2012). Nevertheless, the BSC may not provide what it promises (Busco and Quattrone 2015). The popularity of the BSCs does not necessarily provide a sufficient indicator for the success of the BSC (Perkins et al. 2014), especially since the estimated failure rate of the BSC is more than 70% (Johanson et al. 2006). Thus, despite the popularity of the BSC, the benefits of using the BSC in health organisations are still ambiguous (Porporato et al. 2017). Moreover, the original BSC does not cover all stakeholder expectations (Huang et al. 2011). That is, while public hospitals are being asked to consider all their aspects in their performance measurement systems (Weir et al. 2009), the original BSC does not present a holistic "balanced" picture of a public hospital (Kollberg and Elg 2011). The above review has identified the following gaps in prior studies. Firstly, there is a limited number of research studies that have examined public hospitals' BSCs.

The majority of the prior studies in public hospital settings have focused on the following:

a. What kind and how many perspectives should be included in BSC?
b. What kind and how many performance indicators should be considered in each perspective?
c. What are the implications of applying BSC?
d. Despite the popularity of the BSC, the benefits of using the BSC in health organisations are still ambiguous (Porporato et al. 2017).

Prior research into sustainability BSC (SBSC) suggests several theoretical frameworks to consider environmental concerns within the traditional BSC but these frameworks still need more empirical research to be validated. Finally, the research about public hospital BSC has not focused on environmental issues yet.

References

Aidemark LG (2001) The meaning of balanced scorecards in the health care organisation. Financ Account Manag 17(1):23–40

Aidemark LG, Funck EK (2009) Measurement and health care management. Financ Account Manag 25(2):253–276

Atkinson AA, Kaplan RS, Matsumura E, Mark Young (2012) Management accounting: information for decision making and strategy execution-6/E

Ax C, Greve J (2017) Adoption of management accounting innovations: organizational culture compatibility and perceived outcomes. Manag Account Res 34:59–74

Bartlett G, Johnson E, Reckers P (2014) Accountability and role effects in balanced scorecard performance evaluations when strategy timeline is specified. Europ Account Rev 23(1):143–165

Behrouzi F, Shaharoun AM, Ma'aram A (2014) Applications of the balanced scorecard for strategic management and performance measurement in the health sector. Aust Health Rev 38(2):208–217

Bieker T (2003) Sustainability management with the balanced scorecard. In: International summer academy of technology studies–corporate sustainability

Bisbe J, Barrubés J (2012) The balanced scorecard as a management tool for assessing and monitoring strategy implementation in health care organizations. Revista Española De Cardiología (english Edition) 65(10):919–927

Bobe BJ, Mihret DG, Obo DD (2017) Public-sector reforms and balanced scorecard adoption: an Ethiopian case study. Acc Auditing Account J 30(6):1230–1256

Broccardo L (2015) The balance scorecard implementation in the Italian health care system. J Health Manag 17(1):25–41. https://doi.org/10.1177/0972063414560868

Busco C, Quattrone P (2015) Exploring how the balanced scorecard engages and unfolds: articulating the visual power of accounting inscriptions. Contemp Account Res 32(3):1236–1262

Butler JB, Henderson SC, Raiborn C (2011a) Sustainability and the balanced scorecard. Manag Account Q 12(2):1–10

Butler JB, Henderson SC, Raiborn C (2011b) Sustainability and the balanced scorecard: integrating green measures into business reporting. Manag Account Q 12(2):1

Campbell D, Datar SM, Kulp SL, Narayanan V (2018) Horngren's cost accounting: a managerial emphasis. In: vol 27, pp 39–65. Pearson Education

Cardinaels E, van Veen-Dirks PM (2010) Financial versus non-financial information: the impact of information organization and presentation in a Balanced Scorecard. Acc Organ Soc 35(6):565–578

Chan YCL (2006) An analytic hierarchy framework for evaluating balanced scorecards of healthcare organizations. Canadian J Administr Sci/revue Canadienne Des Sciences De L'administration 23(2):85–104

Chang LC (2007) The NHS performance assessment framework as a balanced scorecard approach. Int J Public Sect Manag 20(2):101–117

Chang W-C, Tung Y-C, Huang C-H, Yang M-C (2008) Performance improvement after implementing the balanced scorecard: a large hospital's experience in Taiwan. Total Qual Manag 19(11):1143–1154

Cheng MM, Humphreys KA (2012) The differential improvement effects of the strategy map and scorecard perspectives on managers' strategic judgments. Account Rev 87(3):899–924

Cheng MM, Humphreys KA, Zhang YY (2018) The interplay between strategic risk profiles and presentation format on managers' strategic judgments using the balanced scorecard. Acc Organ Soc 70:92–105

Cooper DJ, Ezzamel M (2013) Globalization discourses and performance measurement systems in a multinational firm. Acc Organ Soc 38(4):288–313

Correa MG, Prochnik V, Ferreira ACDS, Sergio de Carvalho Vianna D (2014) Brazilian hospital employee perceptions of the BSC. Latin Am Business Rev 15(2):141–166

Dalla Via N, Perego P, Van Rinsum M (2019) How accountability type influences information search processes and decision quality. Acc Organ Soc 75:79–91

De Geuser F, Mooraj S, Oyon D (2009) Does the balanced scorecard add value? Empirical evidence on its effect on performance. Europ Account Rev 18(1):93–122

DeBusk GK, Brown RM, Killough LN (2003) Components and relative weights in utilization of dashboard measurement systems like the balanced scorecard. Br Account Rev 35(3):215–231

Dyball MC, Cummings L, Yu H (2011) Adoption of the concept of a balanced scorecard within NSW health: an exploration of staff attitudes. Financ Account Manag 27(3):335–361

Eldenburg LG, Brooks A, Oliver J, Vesty G, Dormer R, Murthy V, Pawsey N (2019) Management accounting. Wiley

Emami S, Doolen TL (2015) Healthcare performance measurement: identification of metrics for the learning and growth balanced scorecard perspective. Int J Indust Engin 22(4):426–437

Epstein MJ, Wisner PS (2001) Using a balanced scorecard to implement sustainability. Environ Qual Manag 11(2):1–10

Fernando S, Lawrence S (2014) A theoretical framework for CSR practices: integrating legitimacy theory, stakeholder theory and institutional theory. J Theor Account Res 10(1):149–178

Figge F, Hahn T, Schaltegger S, Wagner M (2002a) Development of a sustainability balanced scorecard: translating strategy into value-based sustainability management. J Asia Pacif Centre Environ Account 8(1):3–16

Figge F, Hahn T, Schaltegger S, Wagner M (2002b) The sustainability balanced scorecard–linking sustainability management to business strategy. Bus Strateg Environ 11(5):269–284

Funck E (2007) The balanced scorecard equates interests in healthcare organizations. J Account Organ Chang 3(2):88–103

Gao H, Chen H, Feng J, Qin X, Wang X, Liang S, Feng Q (2018) Balanced scorecard-based performance evaluation of Chinese county hospitals in underdeveloped areas. J Int Med Res 46(5):1947–1962

Grigoroudis E, Orfanoudaki E, Zopounidis C (2012) Strategic performance measurement in a healthcare organisation: a multiple criteria approach based on balanced scorecard. Omega 40(1):104–119

Gurd B, Gao T (2007) Lives in the balance: an analysis of the balanced scorecard (BSC) in healthcare organizations. Int J Product Perform Manag 57(1):6–21

Guthrie J, Farneti F (2008) GRI sustainability reporting by Australian public sector organizations. Public Money Manag 28(6):361–366

Hahn T, Figge F (2018) Why architecture does not matter: on the fallacy of sustainability balanced scorecards. J Bus Ethics 150(4):919–935

Hall M (2011) Do comprehensive performance measurement systems help or hinder managers' mental model development? Manag Account Res 22(2):68–83

Hansen EG, Schaltegger S (2016) The sustainability balanced scorecard: a systematic review of architectures. J Bus Ethics 133(2):193–221

Hansen EG, Schaltegger S (2018) Sustainability balanced scorecards and their architectures: irrelevant or misunderstood? J Bus Ethics 150(4):937–952

Hansen DR, Mowen MM, Guan L (2009) Cost management: accounting and control, 6th edn. South-Western, Mason Ohio

Hoque Z (2014) 20 years of studies on the balanced scorecard: trends, accomplishments, gaps and opportunities for future research. Br Account Rev 46(1):33–59

Huang TK, Pepper MP, Bowrey GD (2011) Implementing a sustainability balanced scorecard "dashboard" approach to assess organisational legitimacy. In: 10th CSEAR Australasian conference. University of Tasmania, Launceston Tasmania, pp 1–10
Humphreys KA, Trotman KT (2011) The balanced scorecard: the effect of strategy information on performance evaluation judgments. J Manag Account Res 23(1):81–98
Hwa M, Sharpe BA, Wachter RM (2013) Development and implementation of a balanced scorecard in an academic hospitalist group. J Hosp Med 8(3):148–153
Jazayeri M, Scapens RW (2008) The business values scorecard within BAE systems: the evolution of a performance measurement system. Br Account Rev 40(1):48–70
Johanson U, Skoog M, Backlund A, Almqvist R (2006) Balancing dilemmas of the balanced scorecard. Acc Audit Account J 19(6):842–857
Kaplan RS, Norton DP (2001) Transforming the balanced scorecard from performance measurement to strategic management: Part I. Account Horiz 15(1):87–104
Kaplan SE, Petersen MJ, Samuels JA (2012) An examination of the effect of positive and negative performance on the relative weighting of strategically and non-strategically linked balanced scorecard measures. Behav Res Account 24(2):133–151
Kaplan RS, Norton DP (1992) The balanced scorecard œ measures that drive performance. In: Harvard business review, January–February 1992. Putting the balanced scorecard to work
Kaplan RS, Norton DP (1993) Putting the balanced scorecard. In: Performance measurement, management, and appraisal sourcebook, 66
Kaplan RS, Norton DP (1996a) The balanced scorecard: translating strategy into action. Harvard Business Press
Kaplan RS, Norton DP (1996b) Using the balanced scorecard as a strategic management system. In: Harvard business review Boston
Kaplan RS, Norton DP (2006) Alignment: using the balanced scorecard to create corporate synergies: Harvard Business Press
Kaplan RS, Kaplan RE, Norton DP, Norton DP, Davenport TH (2004) Strategy maps: converting intangible assets into tangible outcomes. Harvard Business Press
Kober R, Northcott D (2020) Testing cause-and-effect relationships within a balanced scorecard. Account Financ
Kollberg B, Elg M (2011) The practice of the balanced scorecard in health care services. Int J Product Perform Manag 60(5):427–445
Kraus K, Lind J (2010) The impact of the corporate balanced scorecard on corporate control—a research note. Manag Account Res 21(4):265–277
Langfield-Smith K (2018) Management accounting: information for creating and managing value, 8th edn. McGraw-Hill Education Australia, North Ryde
Lipe MG, Salterio SE (2000) The balanced scorecard: judgmental effects of common and unique performance measures. Account Rev 75(3):283–298
Lovaglio PG (2011) Model building and estimation strategies for implementing the balanced scorecard in health sector. Qual Quant 45(1):199–212
Luft JL (2004) Discussion of" managers' commitment to the goals contained in a strategic performance measurement system. Contemp Account Res 21(4):959
Möller A, Schaltegger S (2005) The sustainability balanced scorecard as a framework for eco-efficiency analysis. J Ind Ecol 9(4):73–83
Nikolaou IE, Tsalis TA (2013) Development of a sustainable balanced scorecard framework. Ecol Ind 34:76–86
Niven PR (2008) Balanced scorecard: step-by-step for government and nonprofit agencies. Wiley
Northcott D, France N (2005) The balanced scorecard in New Zealand health sector performance management: dissemination to diffusion. Aust Account Rev 15(37):34–46
Olden PC, Smith CM (2008) Hospitals, community health, and balanced scorecards. Acad Health Care Manag J 4:1
Oliveira HC, Rodrigues LL, Craig R (2020) Bureaucracy and the balanced scorecard in health care settings. Int J Health Care Qual Assur 33(3):247–259

Otley D (2016) The contingency theory of management accounting and control: 1980–2014. Manag Account Res 31:45–62
Perkins M, Grey A, Remmers H (2014) What do we really mean by "Balanced Scorecard"? Int J Product Perform Manag 63(2):148–169
Porporato M, Tsasis P, Marin Vinuesa LM (2017) Do hospital balanced scorecard measures reflect cause-effect relationships? Int J Product Perform Manag 66(3):338–361
Smith M, Loonam J (2016) Exploring strategic execution: a case study on the use of the balanced scorecard within an Irish hospital. J Strateg Manag 9(4):406–428
Soysa IB, Jayamaha NP, Grigg NP (2016) Operationalising performance measurement dimensions for the Australasian nonprofit healthcare sector. TQM J 28(6):954–973
Soysa IB, Jayamaha NP, Grigg NP (2019) Validating the balanced scorecard framework for non-profit organisations: an empirical study involving Australasian healthcare. Total Qual Manag Bus Excell 30(9–10):1005–1025
Sundin H, Granlund M, Brown DA (2010) Balancing multiple competing objectives with a balanced scorecard. Europ Account Rev 19(2):203–246
Tayler WB (2010) The balanced scorecard as a strategy-evaluation tool: the effects of implementation involvement and a causal-chain focus. Account Rev 85(3):1095–1117
Upton DR, Arrington CE (2012) Implicit racial prejudice against African-Americans in balanced scorecard performance evaluations. Crit Perspect Account 23(4–5):281–297
van de Wetering R, Batenburg R, Versendaal J, Lederman R, Firth L (2006) A balanced evaluation perspective: picture archiving and communication system impacts on hospital workflow. J Digit Imaging 19(1):10–17
Walker KB, Dunn LM (2006) Improving hospital performance and productivity with the balanced scorecard. Acad Health Care Manag J 2:85–110
Weir E, d'Entremont N, Stalker S, Kurji K, Robinson V (2009) Applying the balanced scorecard to local public health performance measurement: deliberations and decisions. BMC Public Health 9:127
Wiersma E (2009) For which purposes do managers use Balanced Scorecards?: an empirical study. Manag Account Res 20(4):239–251
Wong-On-Wing B, Guo L, Li W, Yang D (2007) Reducing conflict in balanced scorecard evaluations. Acc Organ Soc 32(4–5):363–377
Wu L, Kuo Y-Z (2012) A balanced scorecard approach in assessing IT value in healthcare sector: an empirical examination. J Med Syst 36(6):3583–3596
Yuen PP, Ng AW (2012) Towards a balanced performance measurement system in a public health care organization. Int J Health Care Qual Assur 25(5):421–430
Zhijun L, Zengbiao Y, Zhang L (2014) Performance outcomes of balanced scorecard application in hospital administration in China. China Econ Rev 30:1–15

2

Critical Success Factors in Implementing Sustainable Business Models: The ITAL Case

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Abstract

This research delves into Sustainable Business Models (SBM) to address the rising demand for sustainability in organizational practices, diverging from models focusing solely on short-term profits. The study fills existing research gaps in SBM implementation by providing a comprehensive, theorydriven exploration of Critical Success Factors (CSFs), utilizing predominant management theories within the context of an exemplary sustainable Italian firm. Through insightful semi-structured interviews and through the theoretical lenses of six organisational theories the paper reveals pivotal internal CSFs and offers theoretical and practical insights for successful SBM implementation. Based on these theories, this study proposes the following six CSFs: "Top management commitment"; Impact Team contribution; "Sustainability embedded production"; "Employees proactiveness"; "Sustainability training"; "R&D activities". Ultimately, this study offers significant theoretical contribution and policy implications.

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Keywords

Critical success factor • Sustainable business model implementation • Resource-based view theory • Contingency (fit) theory • Innovation diffusion theory • Stakeholder theory • Relational-view theory

2.1 Introduction

In recent decades, there has been a significant increase in environmental and social concerns, accompanied by a growing desire for a more sustainable world (Porter and Kramer 2011; Geissdoerfer et al. 2018; Freudenreich et al. 2020). To meet these evolving expectations, organisations are being called upon to move away from the neoclassical economic notion of the 'organisation as an economic entity', where social and environmental considerations take a secondary role in profit generation (Stubbs and Cocklin 2008). Instead, organisations must now address societal needs and issues while simultaneously creating economic value. However, treating sustainable development initiatives as mere add-ons within the existing economic system poses challenges for decision-makers within organisations (Rauter et al. 2017).

To align their profitability goals with environmental and social concerns, businesses must situate their resources within a broader context and advance their business models through a sustainability lens (Alerasoul et al. 2022; Ringvold et al. 2022). This necessitates a fundamental reform of the current structure to establish and implement a Sustainable Business Model (SBM), with executives taking responsibility for integrating sustainability considerations into the organisation's strategy and business model (Rauter et al. 2017). The SBM approach aligns with the 'Triple Bottom Line' (TBL) concept (Elkington 2018), which concurrently addresses economic, environmental, and social objectives through 'win–win-win' methods towards sustainability (Afeltra et al. 2023). The SBM is a business model that incorporates proactive multi-stakeholder management, the creation of monetary and non-monetary value for a broad range of stakeholders, and holds a long-term perspective (Geissdoerfer et al. 2018). While the traditional approach to the business model focusses solely on maximising short-term profits, it is no longer applicable in the current era of competition, as it fails to create sustainable value for stakeholders in exchange for economic value for businesses (Levin et al. 2020a). In contrast, the SBM approach emphasises value co-creation between an organisation and its stakeholders, promoting social and environmental business practices that align with economic factors (Freudenreich et al. 2020). Therefore, the implementation of an SBM requires the involvement of all levels within the organisation (Bocken et al. 2014). Furthermore, the inclusion of social practices, organisational attention to education and training, creating a welcoming and equitable atmosphere, and managing diversity and inclusion appear to increase employee productivity and organisational performance (Afeltra et al.

2022; Margherita and Braccini 2021). While previous research has defined and conceptualised a business model that prioritises sustainability and has introduced several frameworks or principles (Bocken et al. 2014; Evans et al. 2017; Schaltegger et al. 2016), limited attention has been given to the intricacies of SBM implementation. There is also a dearth of theory-driven research that addresses the issue of how SBM can be applied as a result of the fact that many of these studies did not include theories in their analysis. For instance, Long et al. (2018) found that collaboration, a clear narrative and vision, continual innovation, a sustainable foundation, profitability, and serendipitous external events are all necessary conditions for the transition to business models for sustainability, within startups and small- and medium-sized enterprises in the Dutch Food and Beverages Industry. Donner et al. (2021) aims to comprehend the crucial success and risk elements of environmentally creative business models that support a circular economy by monetizing agricultural waste or byproducts.

Therefore, there is a lack of holistic assessment of the approaches for implementing SBMs while integrating the three pillars of sustainability and an urgent need for companies to understand the relative importance of these SBM approaches and explore key factors and successful conditions. Moreover, the literature, especially when considering internal organisational factors, appears to be debatable or inadequately explored (Long et al. 2017) or mainly concentrating on the traditional approach to the business model, on how to maximise short-term profits.

The present study aims to address this gap by providing a holistic investigation of what organisational conditions or key factors can help companies integrate the three aspects of sustainability (environmental, social and economic) and implement an SBM.

The study aims therefore to answer the following research question: what are the conditions, or key factors, that support the implementation of a business model that privileges sustainability according to the 'Triple Bottom Line' (TBL) concept?

To address the aforementioned gaps and answer the research question, the first contribution of this research is to provide a holistic view of the conditions supporting SBMs by reviewing five management and organisational theories: stakeholder theory, Resource-Based View (RBV) theory, relational-view theory, innovation diffusion theory, and contingency (fit) theory. Second, by contextualising the theories into relevant criteria for SBM implementation, allocating resources within companies, and guaranteeing that sustainability strategy is consistent with their overall competitive strategy, this chapter also implicates policy formulation on the enhancement of SBM. By presenting useful insights that help instruct and direct organisations in their quest for sustainability, the proposed research aims to make significant contributions to the subject of sustainable business administration. Specifically, semi-structured interviews are conducted in the context of a leading sustainable Italian firm. Through the interviews, deeper insights into internal conditions that contribute significantly to the implementation of SBMs are gained.