

HOW ARE STRATEGY MAPS LINKED TO STRATEGIC AND ORGANIZATIONAL CHANGE? A REVIEW OF THE EMPIRICAL LITERATURE ON THE BALANCED SCORECARD

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Abstract

Proponents of the Balanced Scorecard (BSC) emphasize that the BSC translates strategy into action, but that Strategy Maps are a crucial mean to sustainable change. This literature review investigates how Strategy Maps are linked to strategic and organizational change. We aim at a better understanding of BSC implementations, gaps in practice, as well as remedies.

Built upon the theoretical framework of Kaplan and Norton, we conduct a systematic literature review of initially 332 empirical studies between 1992 and 2013.

We find that only 15 studies have dealt with the topic of Strategy Maps. Yet, BSC implementations that actually use Strategy Maps appear to be rather successful. Strategy Maps induce sustainable change, foster a better understanding of the BSC, facilitate evaluations of the external environment, create greater commitment, lower resistance, and are superior to a stand-alone BSC in communicating strategy. Nevertheless, we identify the common measure bias as a usual pitfall that leads to inappropriate evaluations of lower-level actors.

We assert that BSC implementations need a Strategy Map to be successful. We also highlight that there has been only little research on the topic, and that present findings might be inconclusive due to the confined range of methodology (single-organization case studies).

Keywords: Balanced Scorecard, Strategy Maps, Organizational Change, Sustainable Change, Literature Review, Common Measure Bias, Performance Measurement System, Management Control System, Diffusion, Strategy Communication, Resistance, Middle Manager

JEL classification: M10, M40, M48, M52

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1. Introduction

Creating and managing the link between strategy and action is crucial if organisations want to be successful in volatile environments (Voelpel, Leibold, & Mahmoud, 2004). Several researchers have found empirical evidence indicating that there is a positive correlation between strategic planning and organizational performance, and organizations are more likely to succeed if they spend time formulating and implementing their strategies (Andrews, Boyne, Law, & Walker, 2009; Hahn & Powers, 2010). Such

strategic changes are generally accompanied by changes in the entire organization (Mintzberg, 1979). Buchanan et al. (2005) highlight that such changes need facilitators to guarantee a meaningful change process, as well as factors that later support the sustainability of this change. As highlighted by Higgins (2005), one mean to achieve sustainable change in an organization are strategic performance measurement systems (SPMSs) that support planning and later trace both financial and non-financial indicators of success. One of the most widely diffused SPMS is the Balanced Scorecard (BSC) (Hoque,

2014). It was introduced by Kaplan and Norton (1992) and mainly focuses on how an organizational strategy can be put into action. Karp (2006) argues that the BSC can be seen as a “dynamic change map” that is a facilitator and warrantor for sustainable change (also: Hughes, 2007; Provost, 2000).

A crucial success factor for a sustainable BSC is that it is implemented correctly from the beginning, and that it needs to replace the previously existing SPMS (Buchanan et al., 2005). Kaplan and Norton (2004) suggest that this period of organizational change must be accompanied by the use of a Strategy Map that shows the cause-and-effect relationships of the BSC and gives stability to the eventual re-organization. As they state:

“Strategy maps and BSCs help organizations translate, communicate, and measure their strategies.” (Kaplan & Norton, 2008, p. 6)

However, communication and comprehension of the BSC has often turned out to be a difficult task to overcome due to its complexity. In many cases, misconstrued Strategy Maps have deterred successful organizational change. For instance, Lipe and Salterio (2000) examine the judgmental effects of the BSC and show that the unit-specific strategy is not considered when corporate superiors evaluate unit performance; they rather consider non-strategy-specific measures that are common across all units (*common measure bias*). Similar, Malina and Selto (2001) assess the BSC as a system for strategy communication and management control. They find that the BSC causes problems in the communication of strategy between top and middle management during the turbulent time of organizational change, leading to dysfunctional behaviour in later evaluation mechanisms (also cf. Lueg & Jakobsen, 2014). Banker et al. (2011) demonstrate that these inconsistent evaluation principles can be prevented—if not only the BSC, but also the underlying Strategy Map is presented to the middle managers. In line with this, Scholey (2005) notes:

“By using cause-and-effect diagrams, a strategy can be depicted in such a way that it is clear not just to those formulating the strategy, but to the majority of employees charged with executing the strategy.”

Since it is disputed if the BSC generally leads to positive change, (Lueg & Nørreklit, 2012; Nørreklit, Nørreklit, Mitchell, & Bjørnenak, 2012), we wonder if this is linked to the absence of Strategy Maps. If some organizations actually implement a BSC without the underlying strategic cause-and-effect chains, unsustainable change would be the obvious results (Karp, 2006). Hoque (2014, p. 37) summarizes from his review that the topic of Strategy Maps has been widely neglected so far. Therefore, we address the research question: “How are Strategy Maps linked to strategic and organizational change?”

The BSC has been subject to many empirical studies. Therefore, we will conduct a literature review to synthesize the evidence from the field on the actual

application of Strategy Maps. We will use the many articles and books written by Kaplan and Norton on the BSC as frame of reference.

Our findings indicate that only 15 studies have dealt with the topic of Strategy Maps over the past 22 years. Yet, BSC implementations that actually use a sophisticated Strategy Map appear to be rather successful. Strategy Maps foster a better understanding of the BSC among employees, create greater commitment and less resistance among actors, and are far superior to the BSC itself in communicating how to achieve strategic goals. Also, Strategy Maps facilitate the actors’ evaluation of the relevant environment. Nevertheless, we identify the *common measure bias* as a usual pitfall that leads to unfair evaluations of lower-level actors.

The structure of the article is as follows: section 2 introduces our theoretical framework on the BSC and Strategy Maps. Section 3 explains our methodology. We present our results in section 4. This analysis will be discussed in greater detail in section 5, complemented with suggestions for further research.

2. Theoretical concepts

2.1 The BSC

The BSC was introduced by Kaplan and Norton in 1992 after conducting a study where they found that existing performance measurement approaches that primarily rely on financial accounting measures have become obsolete (Kaplan & Norton, 1992, 1996; Lueg, Nedergaard, & Svendgaard, 2013). In response to this, they developed the BSC to give organizations a comprehensive view of their business model. The BSC framework would help the organization translate their strategic objectives into a coherent set of performance measures (Kaplan & Norton, 1992, 1993). The purpose was to create a management system where measures of past financial events (lagging indicators) are complemented with operational measures which are the drivers of future financial performances (leading indicators). Thereby, the BSC helps highlighting what needs to be done in order to increase shareholder value (Kaplan & Norton, 1992).

The BSC exhibits four perspectives (financial, customer, internal processes, learning and growth/innovation). These perspectives list and explain how the strategic objectives of an organization can be attained. Specifically, each objective has to be expressed in terms of a measure, so the attainment of this objective can be controlled. Furthermore, each object needs to have a target level, so the responsible employees know how much of this measure has to be achieved in a designated time frame. Last, the BSC would provide employees with action plans as to how to achieve the set target. These plans could be detailed work descriptions on the one

extreme; or full empowerment on the other extreme (Lueg & Jakobsen, 2014). With only a few measures for each perspective, the BSC helps managers narrowing in and specifying their focus on what that has to be done to achieve a competitive advantage (Kaplan & Norton, 1993).

2.2 Strategy maps

These strategic objectives stem from the Strategy Map which derives all strategic objectives directly from the organization's strategy, and links them via cause-and-effect relationships. Built on the organization's vision and strategy, the Strategy Map illustrates what needs to be done to achieve the strategic goals, while the BSC measures the performances to check whether or not it has been obtained (Kaplan & Norton, 2000b, 2001a, 2001b, 2004). This way, organizations can be sure that the attainment of the BSC's (operative) objectives is synonymous with attaining its strategic goals. Thereby, the Strategy Map represents the foundation of a BSC (Kaplan & Norton, 2004).

The Strategy Map simplifies the complexity of strategy by illustrating how few strategic objectives link intangible assets to value creating processes. As Kaplan and Norton state (2004, p. 32):

"Building a Strategy Map forces an organization to clarify the logic of how it will create value and for whom."

The authors emphasize the importance of communicating the strategy throughout the organization. This component is vital; if it is not communicated to the employees, it will not be understood and thus the strategy cannot be realized. In their own words:

"Implementing a strategy begins by educating and involving the people who must execute it." (Kaplan & Norton, 1996, p. 199)

"Strategy cannot be executed if it cannot be understood, and it cannot be understood if it cannot be described." (Kaplan & Norton, 2001a, p. 66)

In fact, one of the main reasons behind failed strategy execution is top managers' communication of the strategy throughout the organization. Without this information, employees at lower levels will have a hard time realizing the strategy because it is unclear what is expected from them. This issue is dealt with by the Strategy Map through clear formulations available to employees charged with executing the strategy (Scholey, 2005). According to Noble (1999, p. 132):

"[...] the degree of involvement across the organisation appears to be a predictor of implementation success."

Both the BSC and Strategy Map facilitate this throughout the strategy implementation process. Additionally, the map helps expose any possible gaps between strategy formulation and execution, consequently detecting flaws in the BSC, enabling top management to reformulate strategies at any time if

necessary (Kaplan & Norton, 2000a, 2001b). All in all, with the inclusion of the Strategy Map, the BSC is no longer just a performance measurement system, but has evolved to a new strategic management system. Its influence is emphasized by the authors:

"The Strategy Map has turned out to be as important an innovation as the original BSC itself." (Kaplan & Norton, 2004p. xiii)

This causal relationship has, however, been criticized by Nørreklit (2000, 2003). She shows that the BSC makes invalid assumptions about the causal relationships, which in turn can lead to sub-optimal performance, i.e. by expecting profit to increase when obtaining a new loyal customer, which, in fact, might not be the case (also: Lueg & Nørreklit, 2012). Moreover, she points to the missing element of time, and that once measured benchmarks vary over time. Furthermore, she sees a problem with employee commitment, arguing that the current top-down approach leads to external instead of internal commitment (Nørreklit, 2000). This issue has also been pointed out by Atkinson (2006) who is concerned that the BSC fails to highlight the contributions made by the employees and suppliers to help organizations achieve their strategic goals. Glykas (2013) adds that all cause-and-effect relationships are not able to fully predict results since they are subject to uncertainty. He criticizes that there are only few attempts to systematically model these uncertainties and variations in cause-and-effect relationships (also cf. Lueg & Borisov, 2014). This literature review should shed some light on the issue if these problems persist in practice even if an appropriate Strategy Map is implemented.

3. Methodology and literature search

We searched for relevant literature using the following four steps:

1. We opted to use the databases EBSCO, ScienceDirect, and ABI Inform for our search on peer-reviewed research instead of a pre-selected set of journals. This way, we could make sure that we did not omit any literature relevant for this review. In our queries, we used the string 'Balanced Scorecard'. We searched the time span 1992-2013. In this first step, we identified 1,080 articles.

2. Then, we selected only the empirical articles, because we wanted to understand how Strategy Maps are applied in practice. In total, 332 articles were empirical.

3. Then, we only kept those studies from journals that received at least 2 out of 4 stars in the ranking of the Association of Business Schools (Harvey, Kelly, Morris, & Rowlinson, 2010). We also went through the bibliographies of these studies, because we wanted to include all empirical BSC studies that these top articles felt were worth citing. If we found suitable further studies during our empirical

search, we also considered them. This lowered the number of relevant studies to 126.

4. Last, we checked the abstracts, keywords, and titles of these sources for the expression 'strategy'. Thereby, we ensured to pick only those articles for the review that explicitly considered the link to strategy as a main topic. Our final sample consists of 15 articles (Banker, Chang, Janakiraman, & Konstans, 2004; Banker et al., 2011; Cheng & Humphreys, 2012; Ghadikolaei, Chen, Zolfani, & Akbarzadeh, 2011; Glykas, 2013; González, Calderón, & González, 2012; Humphreys & Trotman, 2011; Joseph, 2009; Luo, Chang, & Su, 2012; Malina & Selto, 2001; Phillips, 2007; Rompho, 2011; Tapinos, Dyson, & Meadows, 2010; Tayler, 2010; Van Veen-Dirks & Wijn, 2002).

4. Analysis of empirical literature

We structure our review into two subsections: first, we attempt to synthesize the literature that explains how Strategy Maps are used during periods of organizational change (ex-ante perspective), i.e., to design and communicate a BSC. In the second subsection, we elaborate on how Strategy Maps help in sustaining the change, e.g., for evaluation and control purposes (ex-post perspective).

4.1 Design of Strategy Maps (ex-ante)

The survey of Tapinos et al. (2010) explores if employing a BSC in the strategy development process improves the quality and performance of this process. They uncover among 427 managers that BSC users tend to make greater efforts in translating strategy into specific activities, and in communicating these effectively throughout the organization. Furthermore, the BSC users assess the scope of the measures and the possibility to quantify targets as more appropriate than non-users. Yet, the authors concluded that these effects may not necessarily stem from the BSC itself, since BSC users belonged to substantially larger organizations, and also use substantially more alternative information systems at the same time. Similarly, Glykas (2013) conducts two case studies in retail banking and decomposes the BSC for different management hierarchies. He suggests that the use of Strategy Maps that build on neural networks and fuzzy logic instead of mechanistic cause-and-effect relationships can demonstrate a link from managerial action to financial performance. Ghadikolaei et al. (2011) also use an analytical modelling technique to identify the most crucial success factors for universities in Iran. This way, they identify the process perspective as the most important one in their specific setting.

Joseph (2009) conducts a case study on the steel operations in the Indian organization Tata. He concludes that the Strategy Map was conducive to the organization to articulate and transfer strategy into a

management control system. Tata used their initially built Strategy Map to derive BSCs for their strategic business units, which guaranteed the alignment with strategy and became an integral part of organizational communication. These findings are similar to Malina and Selto (2001), who conduct a case study across multiple divisions of a large manufacturing organization. They report problems in communicating Strategy Maps internally, especially in terms of disagreement between top managers and middle managers on the correctness of cause-and-effect chains, controllability, motivation to follow the top-down cascaded BSC, and the overall effectiveness of the BSC. In the same vein, Luo et al. (2012) document the implementation of a BSC in a medical service department where the Strategy Map plays a vital role. A major finding of the study is that the operations levels needed to design their own BSCs in order to employ strategy-relevant non-financial indicators. As we will discuss later, this is a very helpful protection against the common measure bias in ex-post evaluations. Taking a different angle, González et al. (2012) conduct a single-organization case study and investigate the alignment of managers' mental models and the Strategy Map. They find almost no differences between them. The authors see this strong alignment as a major factor for successfully implementing a BSC (e.g., to foster communication among employees during the change). They also suggest that the Strategy Maps can help to explicate the remaining differences of the mental models of managers. This way, causal ambiguity can be eliminated.

Taylor (2010) uses an experiment to demonstrate that managers involved in selecting strategic initiatives perceive their choices more successful than those managers who are simply presented with a balanced set of measures where the causal links are already given. This is especially true in environments where information is noisy, ambiguous or complex. In these cases, managers tend to rely on personal preferences for decision-making. In order to reduce this *motivated reasoning* to a minimum, the BSC should be built as a casual chain with active participation of managers. He thereby shows that employing a Strategy Map to draft a BSC - and to involve managers who have to use it later - yields better results than just presenting a BSC, even though this BSC might be well drafted in the first place.

4.2 Control of Strategy Maps (ex-post)

This subsection reviews empirical research that deals with the sustained changes of the BSC and Strategy Maps, such as *evaluating* the efficiency of the link (ex-post) from the strategy to the BSC.

Banker et al. (2004) conduct an experiment on how actors use the BSC to evaluate performance. They suggest that actors need detailed information on the organizational strategy itself to appreciate the

strategically linked measures in the BSC. On the contrary - if actors are only presented with BSC measures outside the context of the original strategy - they tend to focus their attention to measures that are common across the organization (*common measure bias*) and disregard specific strategic information. Humphreys and Trotman (2011) build on Banker et al. (2004). They conduct two experiments where actors have to evaluate divisional performance with a BSC. As a new contribution, they show that the common measure bias can only be eliminated if the actors are informed about the strategy, *and* the measures of the BSC are *all* linked strategically. They demonstrated in detail that half-linked BSC measures were not sufficient in order to eliminate the bias, emphasizing the significance of a Strategy Map.

Cheng and Humphreys (2012) conduct two experiments to investigate the effect of causal linkages between strategic objectives in the Strategy Map on managers' ability to interpret the strategic relevance of external information. Specifically, they want to understand if managers can use this information to assess if their organizational strategy is effective. The authors examine whether managers - who receive a set of strategic objectives organized in a Strategy Map - make better strategic judgments as opposed to managers who receive the strategic objectives randomly ordered. Their results suggest that Strategy Maps facilitate managers' ability to evaluate external information and to filter out items of lower relevance to strategy. Thereby, Strategy Maps help managers focusing on information that affects strategy. These findings are complementary with the experiments of Banker et al. (2011). They also examine managers' judgmental effects when they receive supplemental information from a Strategy Map. They find that the use of Strategy Maps facilitates managers' understanding of the strategy, as well as identifying the measures that are strategically most relevant. Again, Malina and Selto (2001) report on the control effectiveness of the BSC. They conclude that - despite the communication problems - it is an effective control for strategy alignment as it led to improvements in processes and in customer-related services.

These findings (Banker et al., 2011; Cheng & Humphreys, 2012) are, however, contradicting to what Rompho (2011) finds in his experiment when examining the usefulness of a Strategy Map. A stand-alone Strategy Map does not prove to be an effective instrument for actors' decision-making. He finds that the Strategy Map is not far from managers' own mental models. Therefore, the Strategy Map adds little value. This negative ex-post result can be connected to the previously discussed findings of González et al. (2012), who find that the congruence of mental models and the Strategy is an *advantage* in the ex-ante setting of a BSC implementation. It seems that congruent Strategy Maps lead to a higher degree of accepting a new BSC, but then add little value

since the Strategy Maps are already implicitly known by the managers.

Van Veen-Dirks and Wijn (2002) use 15 longitudinal case studies to demonstrate how the BSC interacts with critical, external success factors. The authors argue that - as the BSC has no direct connection to the market - Strategy Maps need to establish the market-strategy-BSC relationship. Otherwise, the BSC cannot be an effective control system. The longitudinal case study in the hotel industry by Phillips (2007) investigates the BSC as a strategic control system. He illustrates that the use of the BSC without a focus on the original strategy (Strategy Map) leads to dysfunctional decisions, e.g., the termination of a profitable product from the portfolio.

5. Discussion

The aim of this literature review is to better understand *how* Strategy Maps are linked to strategic and organizational changes (Buchanan et al., 2005). Our results carry several implications for theory and practice.

5.1 Contributions

For practice, we contribute the insight that using a Strategy Map substantially increases the likelihood that a BSC induces sustainable change. Both proponents (Kaplan & Norton, 2004) and opponents of the BSC (Nørreklit, 2000) alert that a management system (like the BSC) cannot work in practice if it lacks strategic cause-and-effect chains. Overall, our results from 332 studies on the BSC indicate that only in very few cases (15 studies), Strategy Maps were actually used to implement BSCs. This could explain why the BSC is often seen as irrelevant for practice (Nørreklit et al., 2012). But if a Strategy Map was rigorously used to implement the BSC, the reported effects of organizational change appeared to be quite positive.

From an ex-ante organizational change perspective (implementation, communication, and decision-making with the BSC), the relevant empirical studies report several positive results: Strategy Maps are much more suitable for communication than the BSC itself (Karp, 2006). They lead to a better understanding of the strategy and enable actors to make better decisions, increasing chances of reaching performance goals. Once actors understand the Strategy Map, the implementation process is facilitated, e.g., because actors show greater commitment. Therefore - as we learn from the literature - it is crucial to let middle managers and lower-level employees participate in the design and implementation of the BSC. Neglect can lead to conflicts and reluctance to change.

From an ex-post perspective (evaluations), Strategy Maps have high value for the sustainability

of organizational change (Buchanan et al., 2005; Karp, 2006; Provost, 2000), i.e., what Piercy and Cravens (2000, p. 38) call a “*robust strategy*”. They facilitate the ability of actors to evaluate external information and to filter out items of lower relevance to strategy. As the BSC has no direct link to the external environment, Strategy Maps need to establish the market-strategy-BSC relationship. Otherwise, the BSC cannot be an effective control system. Also, users of BSCs with Strategy Maps are better at quantifying the achievement of targets. These users also perceive their choices more successful than those actors who are simply presented with a balanced set of measures where the causal links are already given. This is especially true in environments where information is noisy, ambiguous or complex. A common pitfall—even in organizations that have a Strategy Map for their BSC—is the *common measure bias* which leads evaluators to overemphasize the measures that are common across all units (mostly financial numbers) and neglect the unit-specific measures that were chosen to reflect the specific strategy of the unit. Especially top managers should pay attention to avoid this bias, e.g., by specifically emphasizing the importance of unit-specific measures, or by letting middle managers participate in the design of the BSC.

For researchers, we highlight that there are many studies on the BSC (Hoque, 2014), but only few that also consider the crucial role of Strategy Maps as a facilitator and warrantor of sustainable change (Buchanan et al., 2005; Karp, 2006). Arguably, one might build upon Speckbacher et al. (2003) to assert that the BSCs without a Strategy Maps are actually not fully developed BSCs. Therefore, we contribute the insight that the current research suffers from a lack of defining what a BSC is. Moreover, there is only one study that has investigated both the ex-ante and the ex-post effects of Strategy Maps (Malina & Selto, 2001). This is problematic since we find contradicting evidence depending on the usefulness of Strategy maps for ex-ante decision-making (González et al., 2012) and ex-post decision evaluation (Rompho, 2011). We find that most research has not yet made a clear distinction between the ex-ante and the ex-post effects of Strategy Maps. Also, there is almost no evidence from a holistic perspective that follows the full management process from the decision to its evaluation.

Future research

First, though a lot of empirical research has been conducted revolving around the BSC, there is a limited number of studies focusing of the strategy formulation and execution parts. What, in specific, have organizations, who successfully reach their strategic goals, done to achieve this, besides implementing the BSC?

Second, most research has been done on the level of top managers. So another aspect that could be interesting is to obtain reflections from middle managers or employees who work with executing the strategy every day. Do they experience the implementation of the BSC as a tool which simplifies their work, or is it making it more complicated or confusing?

Third, there is an overreliance on single cases with private, irreducible data. Future researchers should attempt to define a valid construct to measure the BSC, and then corroborate existing findings with longitudinal or comparative studies, possibly involving publicly available data (cf. the case of Value-based Management: Burkert & Lueg, 2013; Lueg, 2008, 2010).

Limitations

Certain limitations need to be accounted for in this review. First, we do not consider alternative performance measurement systems like Value-based Management, which can be used instead of the BSC when executing strategy. Second, we have mainly focused on high-quality academic articles, thereby excluding books, conference proceedings, or popular practitioner journals.

Conclusion

Despite these limitations, this review can serve as a helpful guide in gaining an understanding of how the BSC and Strategy Map can help organizations in managing strategic and organizational change. We highlight what is important in order to increase the chances of success, and also, what should be avoided. Consistent results reveal that management involvement and strategic alignment and communication throughout the organization are key factors when transforming strategy into action. Strategy maps seem to be a valuable tool as it simplifies the complex causal relations which the BSC is built upon.

References:

1. Albertsen, O. A., & Lueg, R. (2014). The Balanced Scorecard's missing link to compensation: a literature review and an agenda for future research. *Journal of Accounting and Organizational Change*, forthcoming.
2. Andrews, R., Boyne, G. A., Law, J., & Walker, R. M. (2009). Strategy formulation, strategy content and performance: An empirical analysis. *Public Management Review*, 11(1), 1-22.
3. Atkinson, H. (2006). Strategy implementation: a role for the balanced scorecard? *Management Decision*, 44(10), 1441-1460.
4. Banker, R. D., Chang, H., Janakiraman, S. N., & Konstans, C. (2004). A Balanced Scorecard analysis of performance metrics. *European Journal of Operational Research*, 154(2), 423-436.

5. Banker, R. D., Chang, H., & Pizzini, M. (2011). The judgmental effects of strategy maps in Balanced Scorecard performance evaluations. *International Journal of Accounting Information Systems*, 12(4), 259-279.
6. Banker, R. D., Chang, H., & Pizzini, M. J. (2004). The Balanced Scorecard: judgmental effects of performance measures linked to strategy. *The Accounting Review*, 79(1), 1-23.
7. Buchanan, D., Fitzgerald, L., Ketley, D., Gollop, R., Jones, J. L., Lamont, S. S., . . . Whitby, E. (2005). No going back: a review of the literature on sustaining organizational change. *International Journal of Management Reviews*, 7(3), 189-205.
8. Burkert, M., & Lueg, R. (2013). Differences in the sophistication of Value-based Management – The role of top executives. *Management Accounting Research*, 24(1), 3-22.
9. Cheng, M. M., & Humphreys, K. A. (2012). The differential improvement effects of the strategy map and scorecard perspectives on managers' strategic judgments. *The Accounting Review*, 87(3), 899-924.
10. Ghadikolaie, A. S., Chen, I. S., Zolfani, S. H., & Akbarzadeh, Z. (2011). Cause and effect relations of BSC in universities of Iran. *International Journal of Management & Innovation*, 3(2), 16-25.
11. Glykas, M. (2013). Fuzzy cognitive strategic maps in business process performance measurement. *Expert Systems with Applications*, 40(1), 1-14.
12. González, J. M. H., Calderón, M. Á., & González, J. L. G. (2012). The alignment of managers' mental models with the Balanced Scorecard Strategy Map. *Total Quality Management & Business Excellence*, 23(5-6), 613-628.
13. Hahn, W., & Powers, T. L. (2010). Strategic plan quality, implementation capability, and firm performance. *Academy of Strategic Management Journal*, 9(1), 63-81.
14. Harvey, C., Kelly, A., Morris, H., & Rowlinson, M. (2010). Academic Journal Quality Guide. London: The Association of Business Schools.
15. Higgins, J. M. (2005). The eight 'S's of successful strategy execution. *Journal of Change Management*, 5(1), 3-13.
16. Hoque, Z. (2014). 20 years of studies on the Balanced Scorecard: trends, accomplishments, gaps and opportunities for future research. *The British Accounting Review*, 45(1), 33-59.
17. Hughes, M. (2007). The tools and techniques of change management. *Journal of Change Management*, 7(1), 37-49.
18. Humphreys, K. A., & Trotman, K. T. (2011). The Balanced Scorecard: the effect of strategy information on performance evaluation judgments. *Journal of Management Accounting Research*, 23(1), 81-98.
19. Joseph, G. (2009). Mapping, measurement and alignment of strategy using the balanced scorecard: the Tata Steel case. *Accounting Education: an international journal*, 18(2), 117-130.
20. Kaplan, R. S., & Norton, D. P. (1992). The Balanced Scorecard - Measures that drive performance. *Harvard business review*, 70(1), 71-79.
21. Kaplan, R. S., & Norton, D. P. (1993). Putting the Balanced Scorecard to work. *The Performance Measurement, Management and Appraisal Sourcebook*, 66-79.
22. Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston, MA: Harvard Business School Press.
23. Kaplan, R. S., & Norton, D. P. (2000a). *Having Trouble with Your Strategy?: Then Map It*. Boston, MA: Harvard Business School Publishing.
24. Kaplan, R. S., & Norton, D. P. (2000b). *The Strategy-focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*. Boston, MA: Harvard Business Press.
25. Kaplan, R. S., & Norton, D. P. (2001a). *The Strategy-Focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*. Boston, MA: Harvard Business School Press.
26. Kaplan, R. S., & Norton, D. P. (2001b). Transforming the Balanced Scorecard from performance measurement to strategic management: part I. *Accounting Horizons*, 15(1), 87-104.
27. Kaplan, R. S., & Norton, D. P. (2004). *Strategy Maps: Converting Intangible Assets Into Tangible Outcomes*. Boston, MA: Harvard Business Press.
28. Kaplan, R. S., & Norton, D. P. (2008). *The Execution Premium: Linking Strategy to Operations for Competitive Advantage*. Boston, MA: Harvard Business Press.
29. Karp, T. (2006). Transforming organisations for organic growth: the DNA of change leadership. *Journal of Change Management*, 6(1), 3-20.
30. Lipe, M. G., & Salterio, S. E. (2000). The Balanced Scorecard: judgmental effects of common and unique performance measures. *The Accounting Review*, 75(3), 283-298.
31. Lueg, R. (2008). *Value-based Management: Empirical Evidence on its Determinants and Performance Effects*. Vallendar: WHU Otto Beisheim School of Management.
32. Lueg, R. (2010). Value-based Management – Antecedents and performance effects. In K. Pantz (Ed.), *Summa Cum Laude 2008: Wirtschaftswissenschaften* (pp. 284-285). Darmstadt: Roter Fleck Verlag
33. Lueg, R. (2014). Balanced Scorecard: why you need strategy maps to construct causality. *Journal of Business Strategy*, forthcoming.
34. Lueg, R., & Borisov, B. G. (2014). Archival or perceived measures of environmental uncertainty? Conceptualization and new empirical evidence. *European Management Journal*, 32(4), 658-671.
35. Lueg, R., & Carvalho e Silva, A. L. (2013). When one size does not fit all: a literature review on the modifications of the Balanced Scorecard. *Problems and Perspectives in Management*, 11(3), 86-94.
36. Lueg, R., & Jakobsen, M. (2014). Balanced scorecard and controllability at the level of middle managers – The case of unintended breaches. *Journal of Accounting and Organizational Change*, forthcoming.
37. Lueg, R., Nedergaard, L., & Svendgaard, S. (2013). The use of intellectual capital as a competitive tool: a Danish case study. *International Journal of Management*, 30(2), 217-231.
38. Lueg, R., & Nørreklit, H. (2012). Performance measurement systems – Beyond generic strategic actions. In F. Mitchell, H. Nørreklit & M. Jakobsen (Eds.), *The Routledge Companion to Cost Management* (pp. 342-359). New York, NY: Routledge.
39. Luo, C.-M. A., Chang, H.-F., & Su, C.-H. (2012). 'Balanced Scorecard' as an operation-level strategic

- planning tool for service innovation. *The Service Industries Journal*, 32(12), 1937-1956.
40. Malina, M. A., & Selto, F. H. (2001). Communicating and controlling strategy: an empirical study of the effectiveness of the Balanced Scorecard. *Journal of Management Accounting Research*, 13(1), 47-90.
41. Mintzberg, H. (1979). *The Structuring of Organizations*. Upper Saddle River, NJ: Prentice-Hall.
42. Noble, C. H. (1999). The eclectic roots of strategy implementation research. *The Journal of Business Research*, 45(2), 119-134.
43. Nørreklit, H. (2000). The balance on the Balanced Scorecard: a critical analysis of some of its assumptions. *Management Accounting Research*, 11(1), 65-88. doi: 10.1006/mare.1999.0121
44. Nørreklit, H. (2003). The Balanced Scorecard: what is the score? A rhetorical analysis of the Balanced Scorecard. *Accounting, Organizations and Society*, 28(6), 591-619.
45. Nørreklit, H., Nørreklit, L., Mitchell, F., & Bjørnenak, T. (2012). The rise of the Balanced Scorecard - Relevance regained? *Journal of Accounting and Organizational Change*, 8(4), 490-510.
46. Phillips, P. (2007). The Balanced Scorecard and strategic control: a hotel case study analysis. *The Service Industries Journal*, 27(6), 731-746.
47. Piercy, N., & Cravens, D. (2000). The imperatives of value-driven strategy. *Journal of Change Management*, 1(1), 22-40.
48. Provost, D. (2000). Sustaining economies of scale. *Journal of Change Management*, 1(4), 301-311.
49. Rompho, N. (2011). Why the Balanced Scorecard fails in SMEs: a case study. *International Journal of Business and Management*, 6(11), 39-46.
50. Scholey, C. (2005). Strategy maps: a step-by-step guide to measuring, managing and communicating the plan. *Journal of Business Strategy*, 26(3), 12-19.
51. Speckbacher, G., Bischof, J., & Pfeiffer, T. (2003). A descriptive analysis on the implementation of Balanced Scorecards in German-speaking countries. *Management Accounting Research*, 14(4), 361-388.
52. Tapinos, E., Dyson, R., & Meadows, M. (2010). Does the Balanced Scorecard make a difference to the strategy development process? *Journal of the Operational Research Society*, 62(5), 888-899.
53. Tayler, W. B. (2010). The Balanced Scorecard as a strategy-evaluation tool: the effects of implementation involvement and a causal-chain focus. *The Accounting Review*, 85(3), 1095-1117.
54. Van Veen-Dirks, P., & Wijn, M. (2002). Strategic control: meshing critical success factors with the Balanced Scorecard. *Long Range Planning*, 35(4), 407-427.
55. Voelpel, S. C., Leibold, M., & Mahmoud, K. M. (2004). The organizational fitness navigator: enabling and measuring organizational fitness for rapid change. *Journal of Change Management*, 4(2), 123-140.