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Sustainability Management with the Sustainability Balanced Scorecard in SMEs: Findings from an Austrian Case Study

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Abstract: Given the economic importance of small and medium sized enterprises (SMEs) and their need for strategic sustainability management, this paper examines the concept of Sustainability Balanced Scorecard (SBSC) with respect to SMEs. This case study describes the development of an SBSC in a middle-sized Austrian brewery. The existing methods used in SBSC creation were adapted to suit the company's specific needs. The findings show that when developing an SBSC it is important to take specific SME characteristics into account and apply methods that allow for adaptation to the prevailing conditions, such as strategic management, organizational structure and resources. In the case study special attention was paid to strategy analysis and thereby the creation of a solid basis for the SBSC. Furthermore, the results show SBSC development is not a process of distinct consecutive steps, as it is often suggested in the literature, but rather that it is a complex process marked by iterative steps. Moreover, the paper highlights the supporting factors and challenges experienced. Whereas top management support, the presence of a project team and high employee involvement were identified as key supporting factors, a lack of specific resources and blurry strategy formulation exert negative influence on the development process. The results presented here should help other SMEs in their development of an SBSC. The paper stimulates scientific discourse on sustainability and strategic management by highlighting the relevant supporting factors and challenges.

Keywords: Sustainability Balanced Scorecard; SMEs; case study; sustainability management

1. Introduction

Given today's crises and the increasing demand for more efficient management of global resources, issues concerning sustainability and its strategic management have quickly become part of the CEO agendas all over the world [1–3]. In this context, sustainability (and its management) can be defined as “the adoption of business strategies and activities that meet the needs of the enterprise and its stakeholder today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future” [4]. Regardless of the size of the company, strategic management of sustainability helps reduce use of scarce resources, save money, and increase benefits for both society and employees [5,6]. Numerous scholars have emphasized the importance of sustainability management in SMEs [7]. The incorporation of sustainability into business activity improves their competitive position vis-a-vis large-scale enterprises [8,9]. Furthermore, as SMEs represent 99% of all enterprises [10], they clearly play an important role in the European economy, and the contribution they make in the economy's transformation towards sustainable development requires careful attention [11,12].

In order to operationalize sustainability management the implementation of sustainability management tools is of upmost importance. However, most of the sustainability management tools were developed for large-sized companies. Consequently, strategic sustainability management and the use of these tools are widespread in large-sized enterprises, while such issues are still less touched upon in the context of SMEs. Johnson and Schaltegger [7] show that though different tools have been developed during the last two decades, most of these tools are still not being implemented by SMEs. One major reason is that SMEs often lack knowledge of such tools [13,14]. Moreover, the design and applicability of these tools in SMEs is still under-researched [7].

One such tool which is widely used in the implementation of corporate sustainability management is the Sustainability Balanced Scorecard (SBSC). Regarding its use in SMEs, the same situation as for sustainability management tools in general holds for the SBSC. True to its original development, the concept finds its main application in large companies. This is despite the fact that empirical evidence indicates that the implementation of an SBSC might as well be beneficial for such companies [5,8,15–18]. Several case studies describe the concrete development and implementation process of an SBSC, but these deal exclusively with large-scale enterprises [19–23]. There is still relatively little discussion of SBSC in SMEs and authors dealing with the SBSC in SMEs [5,15,24,25] are asking for further research.

The lack of research to date on the development and implementation of the SBSC in SMEs, together with the importance of sustainable strategic management, provide the background motivation for the present case study.

In general, research on the SBSC covers four stages: design, implementation, use, evolution [26]. In our case study, the discussion centers on the design stage of an SBSC in an Austrian SME in the beer industry. The beer industry is of special interest in relation to sustainability management: the production process, being energy, resource and water intensive causes important environmental impacts. Moreover, most of the Austrian breweries are small private-owned companies and play an important role for the regional economy and employment [27].

The results presented have been derived from a concrete SBSC project which was undertaken in the company in 2014. As research on SBSCs in SMEs is relatively limited, the first part of the paper mainly deals with a discussion of the relevant literature about the original concept of the Balanced Scorecard in SMEs [8,17,28]. The empirical results gained from the case study not only show how SBSC development may be guided, they also provide insight into the supporting factors and challenges arising in such a process. The research questions to be answered are as follows:

- Based on an analysis of a single-case study, how does the development process of an SBSC in an SME look like?
- What factors support or challenge the development of an SBSC in an SME?

The remainder of the paper is organized as follows: Section 2 describes the specifics of SBSC development in SMEs. Methods are discussed in Section 3, the results of the case study are presented in Section 4, and then analyzed in Section 5. Finally, concluding remarks, as well as the implications for management activities, are presented in Section 6.

2. The Development of the SBSC Framework in SMEs

2.1. The SBSC in General

The SBSC is based on the “Balanced Scorecard” (BSC), which was originally developed by Kaplan and Norton [29] as a tool for usage in large-sized enterprises [8,30,31]. The BSC translates a company’s vision and strategy into strategic objectives, performance indicators, targets and measures with respect to four perspectives: finance, customers, internal business processes, and learning and growth. The addition of environmental and social criteria can happen by using different SBSC architectures which differ firstly in terms of hierarchy within the perspectives and secondly in integrating these aspects in the consisting perspectives, adding a fifth perspective or a mixture of both [32]. By including

environmental and social aspects the BSC is extended so that it becomes the SBSC and the original tool for strategic management may now be applied to strategic sustainability management [32–35].

The SBSC systematically focuses on ecological, economic and social chances and risks and thereby secures the company's future existence [2,23]. One strength of the SBSC lies in its ability to bridge the gap between the strategic and operative level [24] and to help identify and manage those environmental and social aspects which are necessary for securing a company's financial success. The SBSC facilitates the simultaneous improvement of an organization's economic, environmental and social performance [2].

2.2. The SME Context

A highly formalized strategic management approach as used in large companies may not fit for SMEs [36,37]. In order to become applicable in SMEs, sustainability management instruments need to be capable of addressing the special conditions prevailing in such companies [7]. Optimally, such tools should not be too demanding in terms of resource requirements, and need to work with the data provided by the existing information system. They should also be as simple as possible in application, and require little specialized input [24]. Several researchers in the field believe that these conditions have already been adequately met and that the application of the SBSC to SMEs is relatively unproblematic [5,17,38]. In addition, SMEs may profit from the flexibility inherent in SBSC design (e.g., with respect to choice, number and hierarchy of perspectives, orientation of the objectives involved, etc.) [23,39].

Arnold *et al.* [24] believe the SBSC may help increase SME competitiveness by allowing for a more efficient strategic planning process and the use of relatively simple structures. According to Andersen *et al.* ([17], p. 9) the SBSC is "equally beneficial to SMEs as to large organisations".

However, when talking about SMEs, it has to be kept in mind that, though typical characteristics such as size, lack of resources (financial, human, time), limited management capacity and skills were identified as important barriers [12], the SME category is quite heterogeneous in terms of size, geographical situation, business models and the industry and business conditions they are acting in [9,11,12]. This heterogeneity leads to different types and degrees of environmental and social impact and fields of action in sustainability management. In line with this, applicability of the SBSC is assumed to be better in small and medium-sized enterprises than in micro-enterprises as the latter tend to exhibit excessively informal organizational structures [30]. On the other hand, some typical characteristics of SMEs can also be seen as advantages supporting the integration of sustainability management in general and an SBSC specifically. Such characteristics of SMEs are: flexibility of organizations, e.g., in terms of less bureaucracy or responsiveness to changing circumstances with regard to technology or the market, low degree of formalization, strong local/regional focus and customer needs orientation [1].

2.3. The SBSC Development Process in SMEs

Successful development of an SBSC in an SME requires that several SME-specifics be taken into account.

Primarily, the choice and application of an appropriate method for the development process is of high importance [8]. Besides this, the active involvement and support of the CEO is seen as essential by many authors [8,25,28]. Furthermore, early and continuous employee involvement and communication helps to overcome behavioral challenges, assure employee support, and minimize resistance to change [25].

In addition, the formation of a project team [5] and the nomination of a project leader [25] are important, as is the assignment of sufficient resources to the project and the persons involved [5,28]. However, the diversity of resources required—e.g., with respect to financing, personnel, time and know-how—simultaneously represents a major challenge in SME applications [1,8,15,40].

Other than resources and behavioral challenges such as lacking internal acceptance [15], some further SME-specific barriers need to be taken into account when developing an SBSC: strategic management as well as project management [38] are often only poorly conceived and little coordination between departments exists [8]. In line with little strategic management, formal strategy is also often inexistent [5,25]. However, explicit definition of corporate strategy is a precondition for successful development of an SBSC [2]. Thus, when attempting to implement an SBSC in an SME one needs to ensure that sufficient time is assigned at the beginning of the process to strategic analysis. Further challenges are related to a lack of adequate guidelines for SBSC development [40].

Problems also exist concerning the provision and preparation of data [5,15], the definition of performance indicators [8], the classification of aspects as objectives or measures [20,41] and the use of cause and effect chains [42]. When deciding upon which items are to be included in the SBSC, the focus should be on selection of a few, unbiased indicators which are easy to compare and assess. This reduces the effort involved in subsequent data collection to a manageable level [8,24].

3. Materials and Methods

3.1. Research Design

Given the nature of the research questions and their explorative character, a holistic, single case study approach [43] of action research [44] was chosen for the present analysis. Strictly speaking, a case study is not a method in itself, but rather a process which combines or ‘triangulates’ different methods of empirical social research [45]. The case study approach has to be seen in an action research context which means that the participation of the researchers in the project was useful to understand what practitioners do, and in turn supports the practitioners to improve their reflection and action [46–48]. Thanks to the methods used within the scope of the case study of action research it was possible to adopt both an analytical-external perspective and an interpretative-company internal perception [49], allowing researchers and practitioners to “create spaces of understanding for negotiating differences” [44] (p. 30). It was believed that such a combination would provide more insight than the use of a single method alone [49].

3.2. Selection of Case

The present case study describes the SBSC creation process for an Austrian medium-sized brewery. The brewery was selected for two reasons. On the one hand, as a medium-sized company with around 180 employees, it would appear to be ideal for such SBSC analysis. On the other hand, the company is an Austrian pioneer in terms of sustainability and environmental management, and may in fact be viewed as an example of “best practice” in the field. Years of practice at embedding sustainability within the company mean that the necessary structures and management systems for SBSC creation are already available.

3.3. Data Collection and Analysis

In the following, the methods applied (Figure 1) as well as the process steps of SBSC development (Figure 2) are discussed in detail. Triangulation of documentary analysis, data assessment, workshops, and one interview, was applied in the case study analysis. The project itself lasted from December 2013 to August 2014. While three researchers from the university were involved, the CEO and four employees of the company were part of the whole process. The employees came from the following departments: environmental, controlling, production and PR department. These different backgrounds were needed in order to gain a holistic perspective on the SBSC and further support its applications throughout various departments.

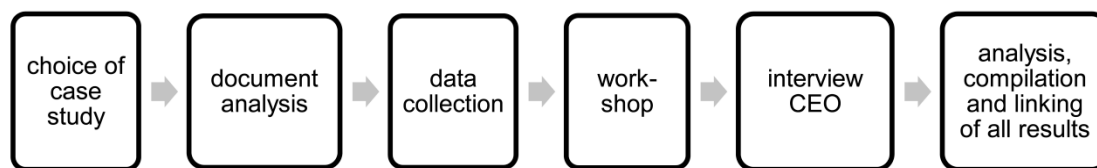


Figure 1. Methodological steps.

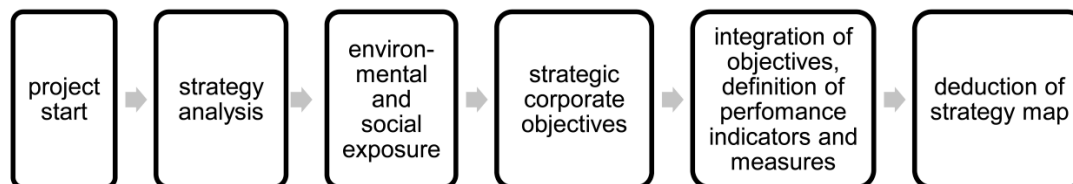


Figure 2. Process steps.

After deciding upon a case study approach and selecting an appropriate company, extensive documentary analysis was undertaken with respect to strategic elements and sustainability. This resulted in a compilation of data relating to various environmental and social aspects, and strategic objectives. Evaluation sheets were then drawn up in order to provide a uniform scheme for assessment purposes. This was followed by a workshop with four employees from different departments. In this workshop methods such as brainstorming and group discussion were used to arrive at agreement concerning corporate strategy and objectives. Data derived from workshop interaction may be combined well with that derived from other qualitative methods [49]. Furthermore, most of the case studies describing SBSC development analyzed in the existing literature also used workshops [21,25,34,41]. In order to complete the strategy analysis an unstructured personal interview with the company's CEO was conducted. The results from all steps were then analyzed and compiled in order to finalize the SBSC. This was done by the present authors in co-operation with company representatives.

The development of an SBSC requires the use of an appropriate method. As the method chosen is likely to have a considerable influence on results [8] it is clearly of central importance. Based on Kaplan and Norton's method for BSC development, several modifications have been suggested for its adaptation with respect to SBSC development [2,50,51]. Unfortunately, these have always been drawn up with large-sized companies in mind. As a result, Fernandes *et al.* have criticized Kaplan and Norton's method as being "*extremely detailed and complex*" [8] (p. 624) and hence not suitable for application in SMEs where both the available resources and know-how tend to be much more limited.

The SBSC development process used in the present case study consisted of six process steps (Figure 2). The process was based on the approach employed by Figge *et al.* [2], which has already been used in other case studies [19,21], albeit for large-sized enterprises. For the purposes of the present case study it was necessary to simplify and adapt the approach to the specific needs of the SME.

After a kick-off meeting at the project start, corporate strategy and the extent of environmental and the social exposure were analyzed. The following step then concerned itself with identification of the strategic corporate objectives and strategically relevant environmental and social factors, and their overall integration into the SBSC framework in the form of specific objectives. The next step in the procedure involved the definition of the performance indicators and measures needed to assess progress towards the attainment of the set objectives. The objectives were also illustrated in a strategy map showing their interrelationships.

The methodological steps described above are not distinct consecutive phases. The use of multiple methods and the presence of considerable feedback throughout the whole process mean that a certain amount of blurring and overlap across the six steps is natural and unavoidable (Figure 3).

Data analysis was done in a way that the results gained during the different events were documented and continuously integrated in the next process steps (see Figure 3). This documentation includes also information not only related to the SBSC and its content but also related to the process of learning and reflection while developing and implementing an SBSC within a company [26,44]. Identified issues were not only discussed among the researchers involved in that project but also with the practitioners who provided input for the development of the SBSC. As stated above, additional sources, like the sustainability report, enabled reflection of the interview and workshop results. This was complemented by observations and participation in the workshops [52].

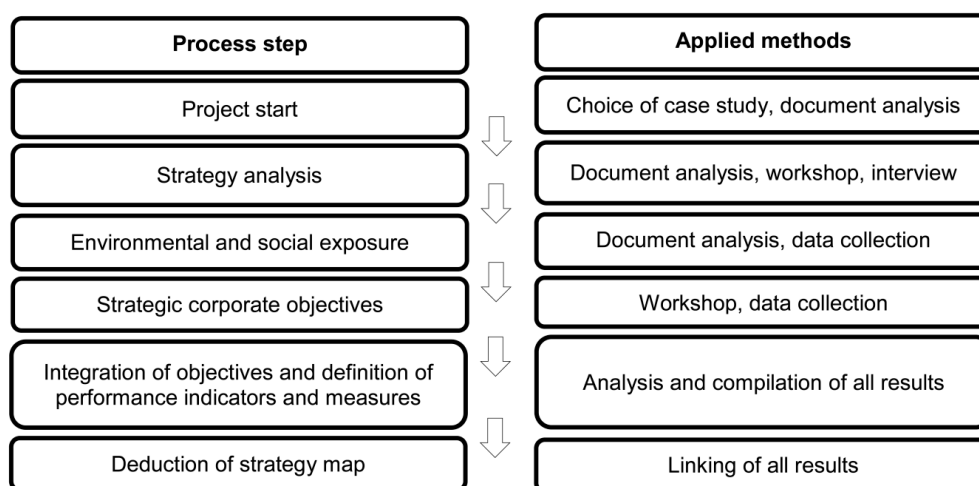


Figure 3. Process steps and applied methods.

4. Case Study: Project Phases and Results Gained from the Different Development Phases

4.1. Project Start

The project's starting point was a kick-off meeting with the company's CEO and the environmental manager. The aim was to get to know one another, arrange general conditions, and to present the SBSC to a company which had had no previous experience with such a tool. The CEO assured his support for the project and the environmental manager was appointed as project coordinator. Furthermore, a documentary analysis of secondary statistical material was conducted in order to gain an initial overview.

4.2. Strategy Analysis

As no explicit corporate strategy existed it was important that the relevant strategic issues be made clear from the outset. The first step thus involved an extensive analysis of corporate documentation, comprising the company's website, sustainability and environmental reports and company-internal documents relating to strategic and sustainability elements. In a second step, the relevant issues revealed during the documentary analysis were then discussed, modified and complemented, making use of a workshop involving employees from several departments. Although strategic management can be seen as a top management task, it also seemed important to involve lower level employees in order to integrate a variety of perspectives and knowledge sources into the discussion. Finally, the results were discussed in an interview with the CEO and modified accordingly. This bottom-up approach of first analyzing the documents, then discussing them with several employees before reflecting on the results together with the CEO, seemed to be appropriate for two reasons: First, since any corporate document is expected to reflect the strategic perspective anyway, and second, the corporate culture is oriented towards collaboration and a rather flat hierarchy.

The final strategy which emerged was stated in the form of a single primary strategic objective (“securing the company’s long-term financial security while complying with company law and respecting environmental and social considerations”). In order to reach this objective, seven secondary objectives, reflecting the principles of sustainable development, were defined. These seven secondary objectives include e.g., identification of and reaction on market demands and trends; protection of the environment and acting carbon-neutral; responsibility for the region, the society and future generations; building linkages between tradition and innovation.

4.3. Environmental and Social Exposure

In this step the environmental and social exposure of the company were identified. This then formed the basis for subsequent integration into the SBSC of those environmental and social aspects considered strategically relevant. Being strategically relevant means that these aspects from the evaluation sheets were seen as the most relevant ones, also in terms of impact.

The extent of company environmental exposure, was identified based on the analysis and handling of existing data provided by the company’s environmental department. The relevant aspects identified were then categorized in accordance with the scheme suggested by Figge *et al.* [33].

As a next step, evaluation sheets reflecting the above categorization were drawn up in order to help assess the status quo and target states (see Table 1). The applied evaluation scheme ranged from a score of 0 (“no environmental impact/not relevant”) to a score of 3 (“environmental impact is very high”). Furthermore, the measures needed to move from the status quo to the target status were also defined. This was done by the environmental manager.

Table 1. Extract from an evaluation sheet on environmental exposure.

Environmental Aspect	Status Quo	Target State	Measures
Emissions			
• Emissions into air	2	1	Substitution of heating oil with district heating from biomass Consideration of emission categories at truck purchase Purchase of cars with max. 150 g CO ₂ emission
• CO ₂	2	1	
• Dust formation	2	1	
Energy intensity			Analysis of indicators to show sources of use
• Energy use	2	1	Continuous optimization through the use of frequency/needs controlled pumps, increased use of LED lightening
• Power use	2	1	
Waste			
• biogenous waste (press yeast)	1	1	Resulting draff and press yeast exclusively used for livestock feed
• proportion of waste material	1	1	Favour reusable packaging in purchase

The environmental aspects related to the category “emissions” were all assigned a status quo evaluation of 2 (“environmental impact exists”) and a target state evaluation of 1 (“environmental impact is very low”). The third column of the table lists the measures needed to attain the desired future state. The first measure was actually realized at an earlier stage of the project in May 2014.

A stakeholder analysis was carried out in order to assess the extent of company social exposure. All identified stakeholders and their respective interests were listed and categorized in accordance with the scheme suggested by Figge *et al.* [33], *i.e.*, in terms of direct and indirect stakeholders, those operating internally and externally, throughout the value chain or on the regional level.

The stakeholders were then evaluated by means of a scheme similar to that described above for assessing environmental aspects, *i.e.*, scores ranged from 0 (“not relevant as a stakeholder”) to 3 (“stakeholder is very important, close relationship to the stakeholder”) (see Table 2). The measures needed to attain the desired state were also named. Once again, the evaluation was carried out by the environmental manager.

Table 2. Extract from an evaluation sheet on social exposure.

Stakeholder	Status Quo	Target State	Measures	Important for...
Employees	2	3	Employee benefits, sponsorship of private energy instruments, commuter support	Motivation; solidarity with company
Suppliers	2	3	Favour regional suppliers and products, maintain long-term relationships	Public appreciation, regionality, avoidance of supply problems
Customers	3	3	Intensive personal customer service	Marketing/sales

The item “employee importance” was assigned a value of 2 (“stakeholder is important, rather close relationship to the stakeholder”) with respect to status quo, and a value of 3 (“stakeholder is very important, close relationship to the stakeholder”) with respect to the desired target state. The measures seen as necessary for attaining the defined objectives comprised items such as a guarantee of employee benefits, the sponsorship of private energy investments and the assurance of commuter support. A close relationship to employees is seen as being important in raising employee motivation and solidarity with the company.

During the workshop the evaluation of the environmental and social aspects was presented to the participants. Once agreement was reached on which items were to be included, no more changes were made.

4.4. Strategic Corporate Objectives

The strategic corporate objectives were identified in a two-step process. First, objectives were discussed during the workshop. Second, as was the case with the drafting of relevant environmental and social aspects, potential objectives for an SBSC were drawn up by means of evaluation sheets. Equal to the evaluation sheets, the most important strategic corporate objectives were then taken into account within the SBSC.

During the workshop, brainstorming was used to identify department objectives, their interrelationships and their potential for conflict. The focus of attention was on discussion of departmental objectives rather than SBSC objectives since it was easier for employees to identify with the former than with the latter.

As a second step, a list of possible strategic items identified in the literature research and supplemented with company specific items was established for each of the four classical SBSC perspectives. Again, the evaluation scheme ranged from a score of 0 (“item is not relevant”) to a score of 3 (“item is of high relevance”), and the measures necessary to attain the target state were also identified (see Table 3).

Table 3. Extract from evaluation sheets on strategic corporate objectives.

Customer Aspect	Status Quo	Target State	Measures
Market share	2	2.75	Selective, systematic handling of the market of all hierarchical levels
Customer satisfaction	2.66	3	Answer customer problems, regular customer visits, ensure constant high quality
Cost reduction and cost efficiency	2	3	Analysis of cost centers, involvement of employees
Employee qualification	1.66	2.66	Offer professional trainings, keep apprentices after apprenticeship

The evaluations were carried out by the company's environmental manager, the controller, the production manager and the PR manager. The aim was both to gain a holistic perspective of the issues, but also to clarify any inherent contradictions or inconsistencies, arising perhaps, from the diverse backgrounds of the respective evaluators. Furthermore, the use of multiple perspectives had the desirable result that analysis was not based solely on the assessment of a single person. The evaluations were averaged and the results were then passed on to the CEO for final assessment.

The item "market share" was given a rating of 2 ("item is relevant") with respect to the status quo and 2.75 (average) with respect to the target state. However, increasing the market share is difficult as the beer market is highly competitive and the companies tend to fight for each and every customer. Selective, systematic handling of the market by sales managers, warehouse managers and drivers and distributors is extremely important.

4.5. Integration of Objectives and Definition of Performance Indicators and Measures

Based on the results of the previous steps (documentary analysis, evaluation sheets and workshop discussions) objects reflecting the SBSC framework were defined. This entailed connecting environmental and social aspects with company strategic objectives and identifying those environmental and social factors which were of strategic relevance.

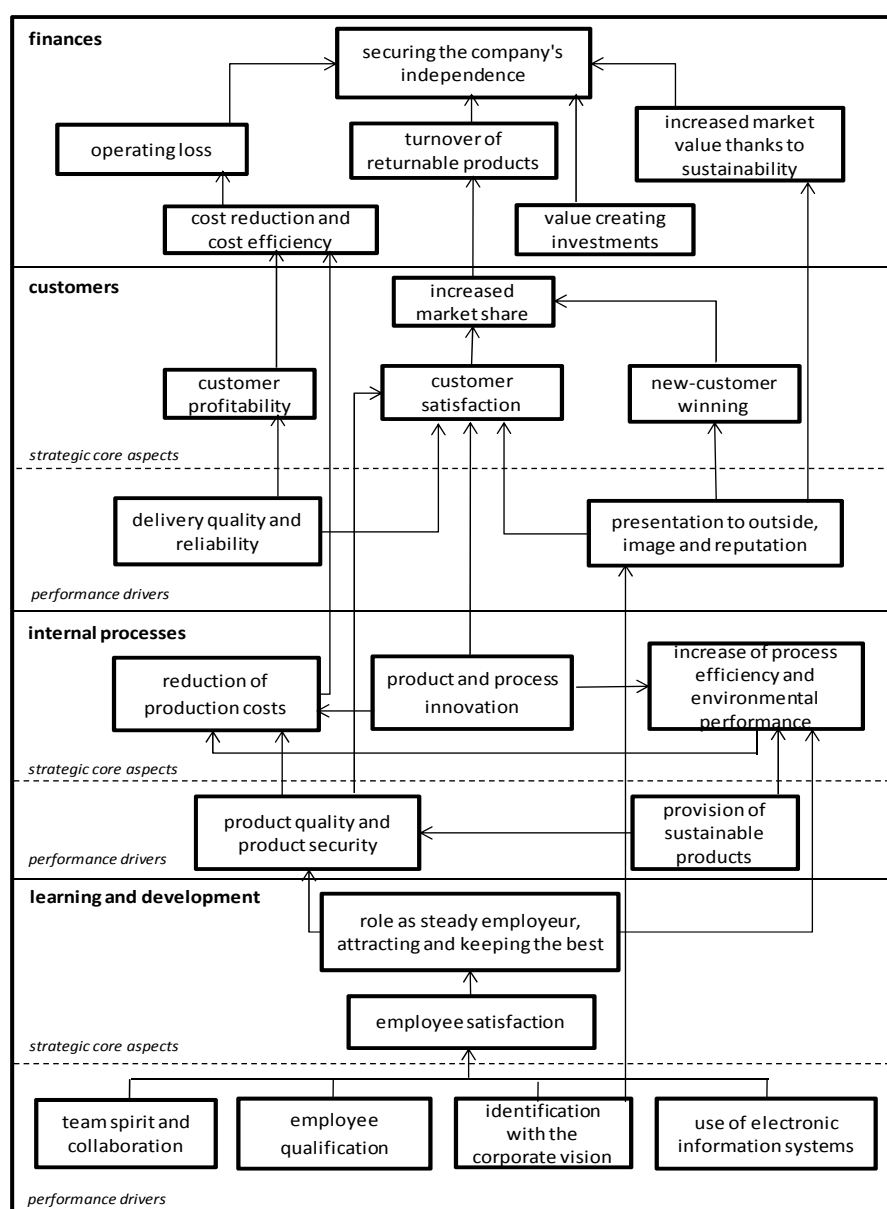
After the objectives were chosen, performance indicators for measuring the objectives and measures were then defined. This step represents a transition from the strategic to the operative level. The performance indicators were based on suggestions gleaned from the relevant literature, while the specific measures themselves were derived from the evaluation sheets.

The concrete targets for the objectives concerning quantities and time frames were in a next step defined by the organization itself. The final number of objectives per perspective (five to six) was slightly higher than the number of suggestions found in the relevant literature. However, as all items seemed strategically relevant for the company a reduction was not thought possible and would not have made much sense. This simply indicates that the SBSC is a relatively open concept and is quite capable of taking specific company needs into account. It is by no means a rigid and inflexible framework.

As the company's primary objective was defined as assuring its (financial) security, a value orientation for the SBSC seemed appropriate. This resulted in choosing the four "classical" perspectives, with the financial perspective at the top of the hierarchy. Furthermore, as all the strategically relevant environmental and social aspects identified were already well-integrated into the market system, it was not necessary to introduce a non-market perspective.

4.6. Deduction of Strategy Map

After having chosen all issues which were to be included in the SBSC, a strategy map showing the relations between the objectives was created. This revealed that the items chosen are not highly disparate and unrelated, but rather that they are closely connected and mutually dependent (see Figure 4). This strategy map reflects the four dimensions of the SBSC, namely "learning and development", "internal processes", "customers" and "finances" containing performance drivers as well as strategic core aspects. The arrows in Figure 4 indicate the linkages between the different aspects. All together the identified objectives and respective measures should contribute to the overall goal of securing the company's independence in terms of finances.



5. Discussion

The first outcome of the research is the presentation of the SBSC development process in SMEs and its application in terms of a concrete example. The results indicate that SBSC development in SMEs is possible when the specific organizational conditions are taken into account and the applied method is designed according to these requirements. The process of creating an SBSC in an SME has to be designed and conducted as simply and understandably as possible in order to allow for adaptation to the prevailing conditions related to strategic management, organizational structure, know-how and resources. Thanks to the SBSC's inherent flexibility regarding methodology and content design (concerning which perspectives are chosen, which objectives are included in the perspectives, the hierarchy of perspectives), the process can easily be adapted to the individual needs and requirements of SMEs. In the present case study the development process proposed by Figge *et al.* [33] was thus adapted to the needs of the company. Owing to the relatively small size of the case company, the step entailing choice of business unit for SBSC development could be safely skipped.

In turn, greater attention was paid to strategy analysis and thereby the creation of a solid basis for the SBSC. Furthermore, the results show SBSC development is not a process of distinct consecutive steps, as it is often suggested in the literature, but rather that it is a complex process marked by iterative steps. For example, while strategy analysis served as the starting point of SBSC development, discussion of strategic issues was also taken up during the workshop and the interview with the CEO.

The case study shows that a workshop can help achieve good outcomes. Owing to the relatively small number of participants involved, the brainstorming and discussion methods used in the workshop appeared to be quite adequate in generating agreement on strategy and objectives. The use of evaluation sheets also proved quite positive. Although entirely different in nature, the results gained from the evaluation process (analytical, quantitative data) served to complement the findings obtained from the documentary analysis (analytical, qualitative data) and workshop discussion (interpretative, qualitative data). The use of a simple evaluation scheme and structure which may be geared to specific levels of individual know-how, is key to the success of the evaluation process.

Second, the research also provides insights into the supporting factors and challenges frequently faced in such development processes. During the whole process, in order to raise the probability of success and avoid unnecessary error, an attempt was made to take account of the supporting factors and barriers commonly identified in the literature. The case study findings, *i.e.*, that the extent of top management support, the presence of a project team, and high employee involvement are all key supporting factors, and that lack of specific resources and blurry strategy formulation exert a negative influence in SBSC development, all largely conform to the findings commonly described in the relevant literature (see Table 4 and Section 2.2).

Table 4. Supporting factors and challenges in SBSC development in SMEs - a comparison of literature and case study findings.

Literature	Case Study
<i>Supporting factors</i>	
Formation of a project team [5]	Given (CEO, environmental manager, controller, production manager, PR manager)
Nomination of a project leader [25]	Given (environmental manager)
Employee involvement [25]	Given (workshop, evaluation sheets)
Involvement and support of the CEO [8,25,28]	Given (kick-off meeting, interview, evaluation sheets, final meeting)
Assignment of sufficient time for strategy analysis [24]	Given (document analysis, discussion in workshop and interview)
Limitation of the SBSC's scope (number of objectives and indicators) [8,24]	Not given (5 to 6 objectives per perspective, approx. 3 indicators per objective)
<i>Challenges</i>	
Lack of resources [1,8,15,40]	Partly given (lack of know-how and time)
Behavioral challenges [25]	Not given
Immaturity of strategic management and project management [38]	Partly given
Non-existence of a formal strategy [5,25]	Given (not explicitly defined/formulated)
Little coordination between departments [8]	Partly given
Provision and preparation/treatment of data [5,15]	Partly given (good basis for environmental aspects, no stakeholder analysis)
Definition of performance indicators [8]	Partly given (no final selection of proposed indicators)
Identification of long-term objectives and cause and effect chains [42]	Partly given (restriction of number of objectives difficult)
Classification of aspects as objectives or measures [20,41]	Given (discussions about aspects of the learning and growth perspective)

The implementation process was characterized by a strong element of constructive collaboration among the project team, despite the diverse backgrounds of the team members. This helped secure employee involvement in the SBSC process, aided the integration and co-ordination of various forms of expert knowledge, and acted as a brake on potential behavioral difficulties. The environmental manager was appointed as project manager. Furthermore, the project team was supported by the CEO who was also actively involved at each stage of the procedure. However, it turned out to be difficult to limit the scope of the SBSC as the company identified a large number of issues as being strategically relevant. This led to a larger number of objectives in the SBSC than is recommended in the standard literature. However, due to the inherent flexibility and openness of the instrument, this did not prove to be a problem. For Bieker *et al.* [20] this shows that the SBSC is more of a flexible instrument than a rigid framework which employs a fixed number of objectives.

In line with findings from the literature, strategic management in the SME studied was found to be relatively immature and corporate strategy lacked explicit formulation. A lot of time thus needed to be spent in defining company strategy.

In contrast to experiences in other SMEs, the problems relating to the provision and preparation of data were relatively minor. The project clearly benefitted from the good quality of the database available in the environmental department. However, with respect to issues concerning social impact, a completely new stakeholder analysis had to be carried out as this had never been done at the company before.

In terms of challenges, the situation was particularly marked by a lack of know-how. As the company had no previous experience of SBSC, each step in the process had to be formulated and defined as clearly as possible. Thus, for example, during the workshop, specific departmental objectives were discussed rather than those more directly related to the SBSC perspectives. Furthermore, a clear and uniform evaluation scheme and simple terminology were used, e.g., the term “cause and effect chains” was used rather than the term “strategy map”, and the distinction between leading and lagging indicators was only introduced at the later stage of strategy map definition. This all served to aid understanding of the SBSC concept and thus led to greater overall acceptance.

Apart from lack of specific know-how, lack of time also proved to be a constraint in the development process, particularly with respect to the CEO (this was also the reason for his absence at the workshop). However, CEO non-attendance at the workshop was subsequently compensated for by organizing an interview at a later stage of the proceedings.

As is observed in other case studies [20,41], uncertainties emerged concerning the classification of certain items as either objectives or measures to achieve the objectives. For example, the item “transition to flexible working hours” was first defined as an objective but after further discussion was then classified as a means of achieving higher employee satisfaction. The same problem occurred relating to the objectives “increase of team spirit and collaboration” and “identification with corporate vision” analyzed. Here, the decision was made to keep these items as separate objectives. This simply shows that objectives need to be established individually in order to match the needs of specific companies.

No important challenges occurred after identifying the potential for mutual interactions of objectives through cause and effect chains.

As can be seen in the strategy map, “securing the company’s independence” was defined as the top objective, reflecting also the primary strategic objective defined within the strategy analysis process. Independence—in terms of financial and legal independence—is of utmost importance for the company because it has and seeks to hold the legal status of a cooperative in the long term.

Furthermore, as it was decided to not introduce a separate non-market perspective but rather integrate sustainability aspects in the “conventional” BSC perspectives, sustainability oriented objectives can be found in all four perspectives of the SBSC. These objectives concern the three dimensions of economic (e.g., “value creating investments”, “increased market value thanks to sustainability”), ecological (e.g., “increase of process efficiency and environmental performance”),

“provision of sustainable products”) and social (e.g., “role as steady employer”) sustainability. By this extensive integration of sustainability aspects in the SBSC, the high importance of sustainability for the company is reflected. However, prioritizing objectives which finally are taken into account within the SBSC is a very important but challenging step even within a company, which acts as a good-practice-example in terms of sustainability management being aware of many sustainability-related challenges and potentials anyway (see also Section 3.2).

6. Conclusions and Implications

The findings of the present case study expand the boundaries of knowledge regarding the application of SBSCs in SMEs in two ways: first, the design and implementation process are explored and reflected and second, barriers and challenges for SMEs while implementing an SBSC were identified and discussed. Hence, the present paper contributes to the current research by designing a method for SBSC development which is particularly suitable for SMEs. The adapted development process which mainly differs in the extend and the succession of the process stages and is characterized by the use of suitable methods (like evaluation sheets with an easy evaluation scheme, group discussion) was tested on a concrete example and found to pass muster. This SBSC development as collaboration of researcher and practitioners, gives further insight into the supporting factors and challenges relating to SBSC development in SMEs and hereby contributes also to research in that respected area. Furthermore, the case study, by showing how to develop an SBSC in an SME, supports decision makers in SMEs in securing a competitive advantage. The findings are crucial for both scientists and practitioners in that they stimulate scientific discourse on sustainability and strategic management, highlight the challenges expected in SME implementation, and provide a certain amount of guidance to other SME managers who may be considering SBSC development in their own companies.

In sum, the results of the case study support the findings frequently found in the relevant literature. The study shows that SBSC creation in SMEs is possible once methods are adapted to take account of company specifics. The process of creating an SBSC in an SME has to be made as simple and understandable as possible in order to match prevailing conditions concerning strategic management, organizational structure, company know-how and resources. Thanks to the freedoms inherent in SBSC methodology and content design, it is quite easy to adapt the SBSC development process to the individual needs and requirements of SMEs. Moreover, the findings of the case study imply that SBSC application is useful for SMEs. As an example: although the case company began to integrate the concept of sustainability into its policies many years ago, the SBSC brings additional benefits by viewing sustainability management in terms of a holistic perspective. This can help the company—and other SMEs attempting to raise their level of sustainability—in identifying new fields of action and in establishing new priorities.

Nevertheless, some limitations have to be considered as well. First, given the research design applied one has to bear in mind that general statements on this issue are difficult to make since in practice SMEs are highly heterogeneous entities. For example, the intensive sustainability orientation observed in the company analyzed above is certainly not the rule. Any number of difficulties might have arisen given a more critical starting point. Second, although data and information from several sources have been considered, the amount of workshops and interviews is still limited. Third, the researchers and practitioners being involved in that action research oriented process also influence the process and its outcome. Fourth, SBSC covers four stages (design, implementation, use, evolution) but given the targets of the project, use and evolution of the SBSC is the company's responsibility only.

Since this research was conducted using only one organization as a case study, further research is needed. As the present paper focused on development rather than implementation, future research could be directed at issues such as validation of case study methodology, practicality, and ease of implementation. Further research could also explore how the SBSC is deployed in SMEs of different

sizes and industries and how it might be needed to be adapted to fit. Moreover, further areas for applying Balanced Scorecards, like in local development projects [53], could be explored too.

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Abbreviations

The following abbreviations are used in this manuscript:

SBSC: Sustainability Balanced Scorecard

SME: small and medium sized enterprise

References

1. Bos-Brouwers, H.J.E. Corporate sustainability and innovation in SMEs: Evidence of themes and activities in practice. *Bus. Strategy Environ.* **2010**, *19*, 417–435. [[CrossRef](#)]
2. Figge, F.; Hahn, T.; Schaltegger, S.; Wagner, M. The Sustainability Balanced Scorecard—Linking Sustainability Management to Business Strategy. *Bus. Strategy Environ.* **2002**, *11*, 269–284. [[CrossRef](#)]
3. Klewitz, J.; Hansen, E.G. Sustainability-oriented innovation of SMEs: A systematic review. *J. Clean. Prod.* **2014**, *65*, 57–75. [[CrossRef](#)]
4. International Institute for Sustainable Development (IISD); Deloitte & Touche; World Business Council for Sustainable Development (WBCSD). *Business Strategy for the 90s*; IISD: Winnipeg, MB, Canada, 1992.
5. Von Bugoslawski, A.; Payer, T. Nachhaltigkeit im Unternehmen verankern—Die Sustainable Balanced Scorecard. In Proceedings of the Nachhaltigkeitsmanagement-Praxisorientierte Ansätze und Instrumente für Eine Nachhaltige Unternehmensausrichtung, Ulm, Germany, 27 January 2005; pp. 19–24.
6. Grothe, A.; Marke, N. Nachhaltiges Wirtschaften—Eine besondere Herausforderung für KMU. In *Nachhaltiges Wirtschaften für KMU. Ansätze zur Implementierung von Nachhaltigkeitsaspekten*; Grothe, A., Ed.; Oekom: München, Germany, 2012; pp. 26–35.
7. Johnson, M.P.; Schaltegger, S. Two Decades of Sustainability Management Tools for SMEs: How Far Have We Come? *J. Small Bus. Manag.* **2016**, *54*, 481–505. [[CrossRef](#)]
8. Fernandes, K.J.; Raja, V.; Whalley, A. Lessons from implementing the balanced scorecard in a small and medium size manufacturing organization. *Technovation* **2006**, *26*, 623–634. [[CrossRef](#)]
9. Gelbmann, U.; Baumgartner, R.J. Strategische Implementierung von CSR in KMU. In *Corporate Social Responsibility: Verantwortungsvolle Unternehmensführung in Theorie und Praxis*; Schneider, A., Schmidpeter, R., Eds.; Springer: Berlin/Heidelberg, Germany, 2012; pp. 285–298.
10. European Commission. *A Partial and Fragile Recovery. Annual Report on European SMEs 2013/2014*; European Commission: Brussels, Belgium, 2014.
11. Parker, C.M.; Redmond, J.; Simpson, M. A review of interventions to encourage SMEs to make environmental improvements. *Environ. Plan. C* **2009**, *27*, 279–301. [[CrossRef](#)]
12. Walker, B.; Redmond, J.; Sheridan, L.; Wang, C.; Goft, U. *Small and Medium Enterprises and the Environment: Barriers, Drivers, Innovation and Best Practice: A Review of the Literature*; Small & Medium Enterprise Research Centre, Edith Cowan University: Joondalup, Australia, 2008.
13. Aykol, B.; Leonidou, L.C. Researching the green practices of smaller service firms: A theoretical, methodological, and empirical assessment. *J. Small Bus. Manag.* **2014**, *53*, 1264–1288. [[CrossRef](#)]
14. Lawrence, S.R.E.; Collins, E.; Pavlovich, K.; Arunachalam, M. Sustainability Practices in SMEs: The case of New Zealand. *Bus. Strategy Environ.* **2006**, *15*, 242–257. [[CrossRef](#)]

15. Tsalis, T.A.; Nikolaou, I.E.; Grigoroudis, E.; Tsagarakis, K.P. A framework development to evaluate the needs of SMEs in order to adopt a sustainability-balanced scorecard. *J. Integr. Environ. Sci.* **2013**, *10*, 179–197. [[CrossRef](#)]
16. Santagada, G. Using Balanced Scorecard to Drive Performance in Small and Medium Enterprises. *Ekonom. Manag.* **2012**, *1*, 15–27.
17. Andersen, H.; Cobbald, I.; Lawrie, G. Balanced Scorecard Implementation in SMEs: Reflection in literature and practice. In Proceedings of SMESME Conference, Copenhagen, Denmark, 14–16 May 2001.
18. Suprpto, B.; Wahabm, H.A.; Wibowo, A.J. The Implementation of Balance Score Card for Performance Measurement in Small and Medium Enterprises: Evidence from Malaysian Health Care Services. *Asian J. Technol. Manag.* **2009**, *2*, 76–87.
19. Bieder, T.; Friese, A.; Hahn, T. Axel Springer Verlag: Nachhaltigkeitsmanagement am Druckstandort. In *Nachhaltig Managen mit der Balanced Scorecard. Konzept und Fallstudien*; Schaltegger, S., Dyllick, T., Eds.; Gabler: Wiesbaden, Germany, 2002; pp. 167–198.
20. Bieker, T.; Herbst, S.; Mente, H. Nachhaltigkeitskonzept für die Konzernforschung der Volkswagen AG. In *Nachhaltig Managen mit der Balanced Scorecard. Konzept und Fallstudien*; Schaltegger, S., Dyllick, T., Eds.; Gabler: Wiesbaden, Germany, 2002; pp. 315–341.
21. Botschen, S.; Hahn, T.; Wagner, M. OBI: Nachhaltigkeitsmanagement mit dem FOX. In *Nachhaltig Managen mit der Balanced Scorecard. Konzept und Fallstudien*; Schaltegger, S., Dyllick, T., Eds.; Gabler: Wiesbaden, Germany, 2002; pp. 259–282.
22. Papalexandris, A.; Ioannou, G.; Prastacos, G. Implementing the Balanced Scorecard in Greece: A Software Firm's Experience. *Long Range Plan.* **2004**, *37*, 351–366. [[CrossRef](#)]
23. Schaltegger, S.; Lüdeke-Freund, F. *The Sustainability Balanced Scorecard. Concept and the Case of Hamburg Airport*; Leuphana Universität Lüneburg: Lüneburg, Germany, 2011.
24. Arnold, W.; Freimann, J.; Kurz, R. Grundlagen und Bausteine einer Sustainable Balanced Scorecard (SBS). Überlegungen zur Entwicklung einer SBS für mittelständische Unternehmen. In *Werkstattreihe Betriebliche Umweltpolitik*; Freimann, J., Ed.; Universität Kassel: Kassel, Germany, 2001; Volume 17.
25. Fresner, J.; Engelhardt, G.; Wolf, P.; Nussbaumer, R.; Grabher, A.; Kumpf, A. Sustainability Balanced Scorecard im Nachhaltigkeitsbereich (ÖKOPROFIT). In *Berichte aus Energie- und Umweltforschung*; Bundesministerium für Verkehr, Innovation und Technologie: Wien, Austria, 2006; Volume 28.
26. Searcy, C. Corporate sustainability performance measurement systems: A review and research agenda. *J. Bus. Ethics* **2012**, *107*, 239–253. [[CrossRef](#)]
27. Verband der Brauereien Österreichs. *Statistische Daten über die Österreichische Brauwirtschaft*; Verband der Brauereien Österreichs: Vienna, Austria, 2014.
28. Rompho, N. Why the Balanced Scorecard Fails in SMEs: A Case Study. *Int. J. Manag. Rev.* **2011**, *6*, 39–46. [[CrossRef](#)]
29. Kaplan, R.S.; Norton, D. *Balanced Scorecard: Strategien Erfolgreich Umsetzen*; Schäffer-Poeschel: Stuttgart, Germany, 1997.
30. Da Costa Marques, M.d.C. Strategic Management and Balanced Scorecard: The Particular Case of Small and Medium Enterprises (SMEs) in Portugal. *Bus. Manag. Rev.* **2012**, *2*, 50–62.
31. Tuan, L.T. Balanced Scorecard Implementation at Rang Dong Plastic Joint-Stock Company (RDP). *Int. J. Manag. Rev.* **2010**, *5*, 126–135.
32. Hansen, E.G.; Schaltegger, S. The Sustainability Balanced Scorecard: A Systematic Review of Architectures. *J. Bus. Ethics* **2016**, *133*, 193–221. [[CrossRef](#)]
33. Figge, F.; Hahn, T.; Schaltegger, S.; Wagner, M. *Sustainability Balanced Scorecard. Wertorientiertes Nachhaltigkeitsmanagement mit der Balanced Scorecard*; Leuphana Universität Lüneburg: Lüneburg, Germany, 2001.
34. Gminder, C.U.; Bieker, T. Managing Corporate Social Responsibility by using the “Sustainability-Balanced Scorecard”. In Proceedings of the 10th International Conference of the Greening of Industry Network, Göteborg, Sweden, 23–26 June 2002.
35. Hahn, T.; Wagner, M.; Figge, F.; Schaltegger, S. Wertorientiertes Nachhaltigkeitsmanagement mit einer Sustainability Balanced Scorecard. In *Nachhaltig Managen mit der Balanced Scorecard. Konzept und Fallstudien*; Schaltegger, S., Dyllick, T., Eds.; Gabler: Wiesbaden, Germany, 2002; pp. 43–94.

36. Brammer, S.; Hoejmoser, S.; Marchant, K. Environmental management in SMEs in the UK: Practices, pressures and perceived benefits. *Bus. Strategy Environ.* **2012**, *21*, 423–434. [[CrossRef](#)]
37. Sloan, K.; Klingenberg, B.; Rider, C. Towards Sustainability: Examining the Drivers and Change Process within SMEs. *J. Manag. Sustain.* **2013**, *3*, 19–30. [[CrossRef](#)]
38. Geiger, C.; Hermann, S. Nachhaltige Strategieumsetzung in KMU mit der Sustainable Balanced Scorecard. An Unternehmenswerten und politischem Rahmen ansetzen. *Ökol. Wirtsch.* **2003**, *2*, 29–32.
39. Bieker, T.; Dyllick, T.; Gminder, C.U. Nachhaltig managen mit der BSC: Sustainability Balanced Scorecard. *Manag. Qual.* **2003**, *1–2*, 35–37.
40. Nikolaou, I.E.; Tsalis, T.A. Development of a Sustainable Balanced Scorecard Framework. *Ecol. Indic.* **2013**, *34*, 76–86. [[CrossRef](#)]
41. Gminder, C.U.; Bergner, M. Die Weiterentwicklung der BSC bei den Berliner Wasserwerken. In *Nachhaltig Managen mit der Balanced Scorecard. Konzept und Fallstudien*; Schaltegger, S., Dyllick, T., Eds.; Gabler: Wiesbaden, Germany, 2002; pp. 199–228.
42. Bhagwat, R.; Sharma, M.K. Performance measurement of supply chain management: A balanced scorecard approach. *Comput. Ind. Eng.* **2007**, *53*, 43–62. [[CrossRef](#)]
43. Yin, R.K. *Case Study Research. Design and Methods*; Sage Publications: Beverly Hills, CA, USA, 2009.
44. McNiff, J. *Action Research: Principles and Practice*, 3rd ed.; Routledge: London, UK; New York, NY, USA, 2013.
45. Brüsemeister, T. *Qualitative Forschung*; VS Verlag für Sozialwissenschaften: Wiesbaden, Germany, 2008.
46. Perry, C.; Gummesson, E. Action research in marketing. *Eur. J. Mark.* **2004**, *38*, 310–320. [[CrossRef](#)]
47. Schneider, R.; Vieira, R. Insights from action research: Implementing the balanced scorecard at a wind-farm company. *Int. J. Prod. Perf. Manag.* **2010**, *59*, 493–507. [[CrossRef](#)]
48. Wilson, H.N. Towards rigour in action research: A case study in marketing planning. *Eur. J. Mark.* **2004**, *38*, 378–400. [[CrossRef](#)]
49. Flick, U. *Triangulation: Eine Einführung*; Springer: Wiesbaden, Germany, 2011.
50. Funkl, E.; Tschandl, M.; Heinrich, J.W. Die Balanced Scorecard als Instrument im Umweltcontrolling. In *Integriertes Umweltcontrolling: Von der Stoffstromanalyse zum Bewertungs- und Informationssystem*, 2nd ed.; Tschandl, P., Posch, A., Eds.; Gabler: Wiesbaden, Germany, 2012; pp. 179–201.
51. Papalexandris, A.; Ioannou, G.; Prastacos, G.; Soderquist, K.E. An Integrated Methodology for Putting the Balanced Scorecard into Action. *Eur. Manag. J.* **2005**, *23*, 214–227. [[CrossRef](#)]
52. Khanagha, S.; Volberda, H.; Oshri, I. Business model renewal and ambidexterity: Structural alteration and strategy formation process during transition to a Cloud business model. *R&D Manag.* **2014**, *44*, 322–340.
53. Ioppolo, G.; Saija, G.; Salomone, R. Developing a Territory Balanced Scorecard approach to manage projects for local development: Two case studies. *Land Use Pol.* **2012**, *29*, 629–640. [[CrossRef](#)]



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