Adoption and diffusion of the balanced scorecard innovation among businesses in Møre og Romsdal

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ABSTRACT «The Balanced Scorecard» (BSC) was introduced in 1992. BSC uses four perspectives: (1) financial, (2) customer, (3) internal, and (4) learning and growth. The tool was further developed by linking the four perspectives together into strategy maps. Objectives are linked together in chains of cause-and-effect relationships both within and between adjacent perspectives. In addition to a description of the adoption and diffusion processes, we address the following research questions: Is BSC an innovation? Are there differences with respect to the use of BSC among industries and businesses? Can the findings give some insight regarding the content of the BSC used over time? A survey was carried out in Møre og Romsdal using a questionnaire that was completed by 71 businesses (21 % of the organizations contacted). About 60 % of the respondents used the BSC and had done so for an average of around 8.6 years. There is a high level of variation among the businesses as well as differences among industries. The cumulative adoption curve (the diffusion curve) seems to be S-shaped. Thus, the adoption curve is bell-shaped. It appears that the BSC adopters belong to the late majority and that the diffusion process is in the maturity stage. The content of the scorecard appears to change over time. At first, the focus is on financial measures, while over time, there is an increasing emphasis on measures regarding the other three perspectives. Thus, adoption of the BSC appears to be an ongoing process. The paper puts forward managerial implications, suggestions for further research as well as a conclusion.

7.1 INTRODUCTION

Robert S. Kaplan and David P. Norton introduced the innovation known as the Balanced Scorecard (BSC) in 1992 in an article in Harvard Business Review. This management accounting tool combines a set of performance measures, both financial and non-financial, in such a way that managers gain a comprehensive view of their business. The BSC uses four business perspectives: (1) financial, (2) customer, (3) internal, and (4) learning and growth perspectives. While financial measures are lagging performance indicators, non-financial measures are leading indicators and are the drivers of future financial performance. Therefore, an organization should measure the critical few parameters that represent their chosen strategy for long-term economic value creation.

A number of companies have adopted the BSC. According to the management consultancy firm Bain and Company, the BSC is among the most used management
accounting tools with an application level of about 50% (Rigby and Bilodeau 2009; 2011; 2013). The importance of the BSC can also be seen from the overwhelming number of articles and books written about it (Free and Qu 2011; Hoque 2014).

Innovation research regarding organizations is classified into three distinct streams (Wolfe 1994). (1) Diffusion of innovations tries to determine the diffusion curve of an innovation over time and identify the factors explaining its shape. (2) Organizational innovativeness is concerned with what makes an organization innovative. (3) Process theory deals with the stages through which an organization passes during the implementation process of an innovation. According to Hoque (2014), a number of studies have focused on the adoption and diffusion of the BSC; however, very few studies have addressed the development of its content over time. This paper focuses on (1) above but also touches briefly on (3).

Thus, the purpose of this paper is to study the adoption and diffusion processes of the BSC by addressing and discussing the following three levels: the overall level, the perspective level (the financial perspective, the customer perspective, the internal perspective, the learning and growth perspective), and the measure level. The focus is on the two first levels, but we also briefly address the item level (measure) from each of the four perspectives. In addition to a description of the adoption and diffusion processes, we consider the following research questions: Is the BSC an innovation? Are there differences with respect to the use of the BSC among industries and businesses? Can the findings give some insight regarding the content of the BSC used over time? In order to answer these research questions there is the need for a context. The context that has been chosen is businesses within the county of Møre og Romsdal, the northern most part of western Norway.

The remainder of this paper is organized as follows: the next section addresses the theoretical framework of the study, followed by a brief discussion of the context and the methodology used. The results are then presented along with a discussion on the findings, which addresses the managerial implications of the study along with its limitation and implication for further research. Finally, the paper ends with a conclusion.

7.2 LITERATURE

7.2.1 THE BALANCED SCORECARD (BSC)

The BSC was created as a management accounting tool for measuring performance, based on both financial and non-financial performance indicators. Kaplan and Norton (1992) stated that the BSC, or any measurement system, should have
several important perspectives that are linked together in chains of cause and effect relationships complementing the organization's strategic frame of reference (mission, vision, core values, etc.). The following generic perspectives were thus introduced: (1) financial, (2) customer, (3) internal, and (4) learning and growth. Together these can be seen as a framework for value creation in organizations (Kaplan and Norton 1996a).

It did not take long for managers to realize that they could use this management accounting tool to implement strategy in all parts of an organization. The tool has since been further developed by linking the four perspectives together into «strategy maps». In and between the four perspectives, objectives are linked together in chains of cause-and-effect relationships. Thus, the BSC has been extended and broadened into a management accounting tool used for describing, communicating and implementing strategies. This development may be related to the following structure: (1) the BSC for performance measurement (Kaplan and Norton 1992; 1993; 1996a), (2) strategic objectives and strategy maps (Kaplan and Norton 2000; 2004a; 2008a), and (3) the strategy management system (Kaplan and Norton 1996b; 2001; 2004b; 2008b; Kaplan 2009).

The BSC consists of performance metrics that are commonly grouped into two sets of indicators. One is referred to as «lagging» while the other is referred to as «leading». However, the relationships are rather complex as the same indicator may be both leading and lagging. For example, customer satisfaction can be a leading indicator of financial performance, however a lagging indicator of product quality or on time delivery. According to Kaplan and Norton (1993; 1996b) the number of indicators included in the BSC should be from three to five for each of the four perspectives.

The strategic frame of reference forms the platform for the BSC. Strategic objectives are established for each of the four perspectives; these are usually formulated as «aims» that should be maximized (e.g. profits or customer satisfaction) or minimized (e.g. costs or absence). Next, goals are established and often grouped into goal hierarchies after which measures (indicators) are established for each of the goals (e.g. ROS, ROA and/or profits in NOK regarding financial measures). The next stage is to establish targets for each goal (measure). By comparing the desired performance levels (targets) with the performance levels achieved, employees and managers throughout the company can find out how well they are doing. The BSC framework therefore enables managers to select objectives, goals, measures and targets that are linked together in chains of cause-and-effect relationships that should result in communication, clarification, motivation, feedback, and evaluation (Atkinson et al. 2012).
The BSC has some important characteristics: (1) the BSC is presented in a single document; (2) the document is short and connected to the company’s information system; (3) the measures are not listed in an ad hoc manner, and lastly, (4) the performance indicators are chosen based on their linkage with the vision and strategy of the company (Kaplan and Norton 1992; 1993; 1996a; 1996b).

The financial perspective contains objectives, goals, measures and targets that represent the ultimate success parameters for profit-seeking companies. The financial perspective focuses on the long-term shareholder value that a company can achieve by means of growth strategies and/or productivity strategies. Productivity strategies focus on the improvement of cost structure and the increase of asset utilization. Growth strategies focus on the expansion of revenue opportunities (for example, additional sales to existing customers or sales to new customers) and/or enhancement of the economic customer value (implying improved profitability of existing customers). Together these two approaches signal whether or not the company’s overall strategy contributes to bottom line improvements.

The customer perspective represents the strategy for creating value and differentiation from the customers’ point of view. Kaplan and Norton (2004a) emphasize the customer-value proposition, which describes the unique mix of product and service attributes, price, availability, relationships, partnerships and image that a company offers. The focus is on how the company differentiates from competitors to ultimately attract, retain and deepen relationships with targeted customers. The value proposition is essential because it helps the company connect its internal processes to improve outcomes with its customers. The customer perspective tells how the company is going to create and deliver value to its customers in order to achieve financial aims (Kaplan and Norton 1996a).

The internal perspective represents the processes in which companies want to excel to create customer and shareholder value (Kaplan and Norton 2004a). These are often divided into four groups:

- **Operation management processes** address the basic day-to-day processes that produce and deliver products and services to customers (acquisition of materials from suppliers, conversion of materials to finished goods, distribution of finished goods to customers, and management of risks).
- **Customer management processes** involve strengthening customer relationships with targeted customers (selection of customers, acquisition of targeted customers, retention of customers, and growth of business with customers).
- **Innovation processes** involve developing new products, processes, and services that in turn may penetrate markets and customer segments.
Regulatory and social processes involve internal behaviour that exceeds the minimum standards regarding environment, employee health and safety, employment practices, and community investment.

The learning and growth perspective represents the priorities needed to create a climate that supports organizational change, innovation and growth. Here the focus is on the capabilities, skills and climate needed to support strategy, i.e. how can human resources and intangible assets be linked to the strategic objectives in the previous perspectives? Kaplan and Norton (2004a) divide the learning and growth perspective into three different categories: (1) human capital (skills, training, and knowledge), (2) information capital (systems, databases, and networks), and (3) organizational capital (culture, leadership, alignment, and teamwork).

The four perspectives constitute a strategy map that illustrates the linkages amongst the strategic objectives within and across the perspectives. This map specifies the critical elements, communicates them throughout the company and links different performance measures into mutually supportive chains, thus underpinning the strategic objectives.

7.2.2 THE BSC AND THE «TABLEAU DE BORD»

The BSC is but one of a number of strategic management accounting tools that is available (Blindheim 2010; Nixon and Burns 2012). In the same period in which the BSC was launched, other analogous models and approaches were available (Globerson 1985; McNair et al. 1990; Sloma 1980; Wisner and Fawcett 1991). It is therefore worth considering why the BSC has achieved greater success than these other models and approaches. It is particularly interesting to compare BSC with the French management tool Tableau de Bord, as this has many points of similarity with the BSC (Bourguignon et al. 2004; Lebas 1994) and had already been in use for over 60 years when Kaplan and Norton introduced the BSC. Tableau de Bord is the most used management accounting tool in France and its roots go back to the great depression in 1929. Understanding the Tableau de Bord is mandatory in most French universities and business schools and it has increased in popularity, having been further developed after the introduction of the BSC (Fernandez 2003). Technically, it is an instrument panel or control panel similar to an airplane dashboard. The idea is that managers can monitor and control their company based on a few parameters (indicators) that are relevant for action and decision-making. To do so the «pilot» must concentrate on the major variables that can be changed in order to attain the aims. The term «pilotage» is often used in this con-
text and refers to ambitious, result-oriented and targeted enterprise control. There is an assumption that there is an underlying causal model that describes how adjustments to certain success factors can create the desired effects elsewhere in the organization. This model represents traditional cause and effect relationships, similar to those illustrated by a strategy map (Daum 2005).

The similarities between the Tableau de Bord and the BSC raises the question of why the Tableau de Bord is not as widely used as the BSC. We will examine this in more detail in the discussion below.

7.2.3 INNOVATION, ADOPTION AND DIFFUSION

Innovation is the introduction of something new such as an idea, a device, or a new method. There are various definitions of this: «An innovation is the successful introduction of ideas, perceived as new, into a given social system» (Bradford and Kent 1977, p. 128); «An innovation is the introduction of new products, business processes and organic changes that create wealth and social welfare» (Vaitheeswaran 2007, p. 4); «Innovation is significant positive change» (Berkun 2013).

According to the Business Dictionary (2015), innovation implies that an idea must be replicable, economic and satisfy a specific need.

According to these definitions, innovation is not only the introduction of something new, but also a solution that meets both existing requirements as well as those that have yet to be articulated with respect to products, processes, technologies and ideas. Innovations can be divided into two broad categories: (1) Evolutionary innovations (continuous or dynamic evolutionary innovation) that are brought about by many incremental advances in technology or processes, and (2) revolutionary innovations (also called discontinuous innovations), which are often disruptive and new.

Management accounting innovation can take the form of a management accounting model that indicates a general scheme of how the management accounting system could be designed. All models consist of certain characteristics and in the case of management accounting models, the characteristics can assume one of at least two forms, namely design characteristics and rhetorical elements. The former represents the technical specification of an innovation and the latter the «theory» of the usefulness of the design characteristics (Bjørnenak and Olson 1999). According to Ax and Bjørnenak (2005), the process of changing or adding design characteristics or rhetorical elements is referred to as the bundling process.

Innovations take time to spread through the social system (Lave and March 1993; Webster 1971). Rogers (1995) understands the innovation diffusion process
as the spread of a new idea from its source of invention or creation to its ultimate users or adopters. The adoption process focuses on the mental process through which an individual passes from first hearing about an innovation to its adoption. Thus, adoption implies a decision to be a regular user of the product, process or idea. Adopters of new products («consumers») move through five stages (Kotler and Keller, 2006):

1. **Awareness:** The consumer becomes aware of the innovation but lacks information about it.
2. **Interest:** The consumer is stimulated to seek information about the innovation.
3. **Evaluation:** The consumer considers whether to try the innovation.
4. **Trial:** The consumer tries the innovation to improve the estimate of its value.
5. **Adoption:** The consumer decides to make full and regular use of the innovation.

The level of innovativeness varies from person to person and from organization to organization. Both people and organizations are usually classified into five adopter categories. Here the focus is on organizations (Jobber 2004):

- **Innovators (2.5%)** tend to be larger and more profitable companies if the innovation is costly, and have more progressive, better-educated management.
- **Early adopters (13.5%)** have much the same characteristics and represent together with the innovators the opinion leaders.
- **Early majority entities (34%)** like to see products and ideas prove themselves on the market before they are willing to part with cash for them.
- **Late majority entities (34%)** are even more cautious. They are willing to adopt an innovation only after the majority of organizations have adopted it.
- **Laggards (16%)** consider adopting an innovation when it has become an established product.

The adoption process is usually presented as a bell-shaped curve. If plotted on a cumulative basis, the percentage of units adopting a new idea over time resembles an S curve. Although the curve tends to have the same shape regardless of the product or idea involved, the length of time required differs – often substantially (Coleman 1957; Mansfield 1961; Mullins et al. 2005).

All innovations can be described through life-cycle curves. The shape of such curves varies considerably but is typically S-shaped (Mullins et al. 2005). These curves are also divided into five stages: (1) **Introduction**, (2) **Growth**, (3) **Shake-out**, (4) **Maturity**, and (5) **Decline or extension**. The various stages present different opportunities and threats to the suppliers of products and services. The lifetime
may differ enormously for different products, processes and ideas, so this is also true for management accounting tools such as the BSC.

7.2.4 LITERATURE REVIEW – SOME EMPIRICAL FINDINGS

One stream of innovation research regarding organizations focuses on the diffusion of innovations and tries to determine the innovation’s diffusion curve over time and to identify the factors explaining its shape (Wolfe 1994). Adoption and diffusion of innovations represent a large proportion of managerial and scientific publications (Alcouffe et al. 2008; Hoque 2014; Rogers 1995).

Mansfield (1961) addresses the «rate of imitation» of twelve innovations in four industries and focuses on factors that determine how rapidly the use of a new technique spreads from one firm to another. The rate of imitation tended to be faster for innovations that were more profitable and that required relatively small investments. While these two factors explain most of the variations among the rates of imitation, there are some other factors. Replacement of equipment that is very durable may reduce the rate of imitation, while a superior or revolutionary (discontinuous) innovation may increase the rate of imitation. In addition, this may be influenced by the business cycle during which the innovation was first introduced as well as by interindustry differences. According to Mansfield (1961) some factors may influence the speed of imitation positively and other factors negatively.

Based on a study of 17 Finnish companies, Malmi (2001) offers five rationales for the adoption of the BSC. First, the BSC translates strategy to action. Second, quality programs and especially various types of quality awards sought by organizations seem to encourage BSC adoptions in Finland. Third, some companies seem to have adopted BSCs to support some other change agendas. Fourth, some companies have adopted the BSC according to managerial fads and fashions. The fifth rationale is the abandonment of traditional budgeting in favour of the BSC.

Daniel et al. (2012) conclude in a review article that in the majority of existing studies, the adoption of management practices is viewed as a rational and cognitive process, i.e. based on rationales. However, other factors have also been put forward such as «emotional appeal» and «source credibility» (Leiringer and Cardellio 2008) and «social networks of board of directors» (Braam and Borghans 2009). Watson (1994) asserts that in its extreme form, managers may adopt practices in order to further their position or career even if the idea is unsuitable or flawed. A number of other studies exist which come to similar conclusions (e.g., Battisti and Iona 2009; Damanpour and Schneider 2006; Kraus and Lind 2010; Lapsley and Wright 2004; Madsen and Stenheim 2014; Ravichandran 2000; Sturdy 2004; Wiersma 2009).
However, some factors may have a negative influence on the adoption such as resistance to change (uncertainty, concern of personal loss, etc.), cultural obstacles, and lack of resources or management inertia (Bjørnenak 1994; Hannan and Freeman 1984; Lewin 1951).

The rate at which an innovation passes through the adoption process is not only affected by the actions taken by the adopters but also by the actions taken by the suppliers, e.g. consultants, conferences, software producing companies, etc. (Ax and Bjørnenak 2005). Madsen (2012) addresses the diffusion of the BSC concept in Norway in the period 1992–2011. He reveals that diffusion in the early stages was influenced and enhanced by the supply side actors from Sweden. The supply side of the diffusion process was developed through the help of seminars, conferences, different publications, websites, and other arrangements, which communicated the main characteristics of the concept to potential adopters.

Generally, the rate of the adoption process of a management accounting tool such as the BSC probably depends on several factors. These are, (1) the risk (cost of product failure or dissatisfaction); (2) the relative advantage over other products; (3) the relative simplicity of the new product; (4) its compatibility with previously adopted ideas and behaviour; (5) the extent to which its trial can be accomplished on a small-scale basis; (6) the ease with which the central idea of the new product can be communicated; (7) the perception of its being «worth the efforts», i.e. «value for money».

Another stream of innovation research regarding organizations deals with the stages through which an organization passes during the implementation process of the innovation (Wolfe 1994). This is the focus of Speckbacher et al. (2003), who address the usage of the BSC. This article discusses the characteristics of three different types of BSC that reflect the successive phases in the evolution of the BSC concept and its implementation in practice. The three types range from minimum-standard to a fully developed BSC. The three different types can be interpreted as three typical evolutionary steps in the process of implementing the BSC.

The BSC type I can be defined as a performance measurement system that implies a specific approach to measuring both financial and non-financial (intangible). Intangibles are identified and measured using non-financial strategic measures rather than by their financial value (Speckbacher et al. 2003). The BSC type II concerns cause-and-effect relations in strategy development. A fully developed BSC (type III) not only describes the strategy of the company; it also implements the strategy via communication, action, plans, and incentives. According to Speckbacher et al. (2003), the BSC concept thus may evolve from an information system to a strategic management accounting system.
7.3 CONTEXT AND METHODOLOGY

In order to gain insight into the adaptation and diffusion processes of the BSC, there is a need for data from those who use this management tool. The context of this study is businesses within the county of Møre og Romsdal, the northern most part of western Norway. The county has about 255,000 inhabitants and covers five percent of the land area of Norway. It is a coastal region with islands, fjords, valleys and mountains and is one of the country’s three major exporting counties owing to three business clusters. These are (1) the fishing industry, the fish farming industry, (2) maritime industries and (3) the furniture industries (Jakobsen et al. 2012).

We used Google Forms to collect data and the statistical tool SPSS to analyse the data set. The questionnaire included the use of a Likert-scale from «1» to «7», where «1» represented the lowest level and «7» the highest level. At the overall level, the respondents were asked about the extent to which they used the BSC. There were similar questions for all the four BSC-perspectives. Four to five additional questions were included at the measure level. For the financial perspective there were measures representing profitability, liquidity, solidity, growth in revenues and EVA (Economic Value Added). For the customer perspective there were measures representing customer attitude, quality vs price, image (reputation), and accessibility. For the internal perspective, day-to-day operations, customer acquisition, perception of CSR, and new solutions were included; and for the learning and growth perspective, there were employee attitude, learning, cooperation, flow of information, and corporate culture. In addition, the questionnaire asked respondents to provide information about the number of years that the company had used the BSC.

The questionnaire also included «background» questions, i.e. the year the company was established, the approximate number of employees, the approximate export share of corporate sales, the industry the company belonged to, and the respondent’s position in the company. Some other questions were also included such as, «To what extent would you recommend the BSC to other businesses if you were asked for advice?»

A record of the county’s 600 largest companies was established. Information available included revenue figures, number of employees, postal addresses, as well as telephone numbers and e-mail addresses. Based on this information we sent the survey to 400 of these businesses. The actual population declined to 347 for several reasons such as different entities from the same organization being asked (25 businesses), the company no longer existing because of bankruptcy (7 businesses), as well as other reasons (21 businesses). The final number of respondents was 71 businesses giving a response rate of 21%.
CEOs of the companies were the most frequent respondents (about 65%). However, all the other respondents represented the top management teams of the companies. Thus, all the respondents should have had perfect insight regarding their answers. A number of industries were represented, although industry figures are only presented for those industries that had at least four respondents (see the discussion below).

Table 7.1. presents descriptive statistics or company information regarding the sample. The oldest company was established in 1835 and the newest in 2013. The average number of employees is close to 150; however, this varies from two to 3,000. The approximate export share of corporate sales is close to 20 %, although this too varies from zero to 100 %. This variation is also addressed by the statistic denoted standard deviation (SD): the higher the SD, the greater the variation. The skewness value provides an indication of the symmetry of the distribution. Kurtosis, on the other hand, provides information on the «peakedness» of the distribution. If the distribution is perfectly normal, the skewness and kurtosis values will be zero. Positive skewness values indicate positive skew (scores clustered to the left hand side of a graph, i.e. at low values). Negative skewness values indicate a clustering of scores at the high end (right hand side of a graph). Positive kurtosis values indicate that the distribution is rather peaked with long thin tails (clustered in the centre). Kurtosis values below zero indicate a distribution that is relatively flat (too many cases in the extremes) (Hair et al., 2010; Pallant, 2007).

It is important to note that web panels display higher levels of data reliability than do methods such as telephone surveys. This comes from there being no interviewers in web-panel administration; so that there is no interviewer bias and the respondents have privacy when answering (Braunsberger et al., 2007).

**TABLE 7.1.** Descriptive statistics of the sample with respect to company information (n=71).

<table>
<thead>
<tr>
<th>Business information</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of establishment</td>
<td>1835</td>
<td>2013</td>
<td>1967</td>
<td>40.8</td>
<td>-1.35</td>
<td>1.74</td>
</tr>
<tr>
<td>Number of employees</td>
<td>2</td>
<td>3000</td>
<td>149.1</td>
<td>414.5</td>
<td>5.52</td>
<td>34.10</td>
</tr>
<tr>
<td>Export sales (in %)</td>
<td>0.0</td>
<td>100.0</td>
<td>20.3</td>
<td>30.4</td>
<td>1.46</td>
<td>0.83</td>
</tr>
</tbody>
</table>
7.4 RESULTS

7.4.1 THE PROPORTION OF USERS OF BSC

One of the questions included in the questionnaire was as follows: «How many years has the company applied the Balanced Scorecard?» Table 7.2. presents the results for the whole sample and for some of the industries, while figure 7.1. presents the distribution (the histogram) of the variable denoted «Number of years used the Balanced Scorecard».

TABLE 7.2. Descriptive statistics of the number of years of the application of the balanced scorecard.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of non-users</th>
<th>Number of users</th>
<th>Users in %</th>
<th>Minimum (years)</th>
<th>Maximum (years)</th>
<th>Mean (years)</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the industries (sample) (n=71)</td>
<td>29</td>
<td>42</td>
<td>59.2</td>
<td>1</td>
<td>20</td>
<td>8.57</td>
<td>5.98</td>
<td>0.58</td>
<td>–0.74</td>
</tr>
<tr>
<td>Banking industry (n=7)</td>
<td>0</td>
<td>7</td>
<td>100.0</td>
<td>6</td>
<td>19</td>
<td>11.14</td>
<td>4.41</td>
<td>1.01</td>
<td>0.55</td>
</tr>
<tr>
<td>Retail industry (n=7)</td>
<td>1</td>
<td>6</td>
<td>85.7</td>
<td>2</td>
<td>15</td>
<td>9.17</td>
<td>4.22</td>
<td>–0.68</td>
<td>2.18</td>
</tr>
<tr>
<td>Manufacturing industries (n=20)</td>
<td>10</td>
<td>10</td>
<td>50.0</td>
<td>1</td>
<td>20</td>
<td>9.20</td>
<td>7.10</td>
<td>0.56</td>
<td>–1.12</td>
</tr>
<tr>
<td>Transport industry (n=4)</td>
<td>1</td>
<td>3</td>
<td>75.0</td>
<td>2</td>
<td>20</td>
<td>9.00</td>
<td>9.64</td>
<td>1.55</td>
<td>–</td>
</tr>
<tr>
<td>Energy industry (n=4)</td>
<td>1</td>
<td>3</td>
<td>75.0</td>
<td>3</td>
<td>15</td>
<td>7.33</td>
<td>6.66</td>
<td>1.69</td>
<td>–</td>
</tr>
<tr>
<td>Maritime industry (n=13)</td>
<td>6</td>
<td>7</td>
<td>53.9</td>
<td>1</td>
<td>10</td>
<td>4.43</td>
<td>3.21</td>
<td>0.86</td>
<td>–0.04</td>
</tr>
<tr>
<td>Other industries (n=16)</td>
<td>10</td>
<td>6</td>
<td>37.5</td>
<td>1</td>
<td>20</td>
<td>9.17</td>
<td>7.63</td>
<td>0.39</td>
<td>–1.78</td>
</tr>
</tbody>
</table>
Table 7.2. shows that 42 of the 71 companies in the sample apply the BSC, i.e. 59.2% are users and 40.8% of the companies are non-users. On average, the users of the BSC have applied this management accounting tool for about 8.6 years. However, Figure 7.1. shows that the variation is rather high. The first adopters have used the BSC for about 20 years – the maximum number of years presented in Table 7.2. This means that these companies started applying this management accounting tool in 1995, i.e. about three years after the BSC was introduced in the 1992 HBR article. Table 7.2. also shows that some companies started to use this tool in 2014. Thus, the spread regarding the number of years of use is wide, i.e. from one to 20 years.

Table 2 also presents the findings regarding the use of the BSC for six industries; the banking industry (n=7), the retail industry (n=7), manufacturing industries (n=20), the transport industry (n=4), the energy industry (n=4), and the maritime industry (n=13). Those industries represent about 77% of the sample (55 of
The results in table 7.2. indicate that the use of the BSC is highest in the banking industry as all seven respondents use this management accounting tool. On average, these seven companies have been using BSC for about 11 years, although there is variation (from 6 to 19 years). The use of the BSC is also high in the retail industry with six of the seven respondents having used the BSC for an average of approximately nine years. The use of the BSC also appears to be rather high in the transport industry and the energy industry, i.e. about 75%. However, the numbers of respondents from these industries is low (n=4 for both industries). In the manufacturing industries, ten of the twenty respondents use the BSC, whereas in the maritime industry, more than half of the respondents do so (seven of thirteen). However, the companies representing these industries have not been users for as many years as the others. On average, the companies from the maritime industry have been users for about 4.5 years. It should be emphasised that there is considerable variation among all industries regarding the number of years the BSC has been in use. This can be seen from the minimum and the maximum number of years and/or at the standard deviations for each of the industries.

The users of the BSC were also asked the following question, «To what extent would you recommend the BSC to other businesses, if you were asked for advice?» Table 7.3. presents the descriptive statistics of this variable denoted «Probability of recommending BSC». On a scale from one to seven, the average is 5.62; however, there are variations (SD=1.06).

When correlating the respondents’ answers with respect to this variable and the number of years that the BSC has been used by the same respondents, the Pearson’s correlation coefficient is positive and significant at the 0.05 level (r=0.31; p≤0.05). According to Cohan (1988) this is a medium sized coefficient (small: r=0.10 to 0.29; medium: r=0.30 to 0.49; large: r=0.50 to 1.0). Recommendations to others indicates loyalty. Thus, the longer the respondents have been using the
BSC, the more satisfied and loyal they will be. Therefore, there should be a positive correlation between recommendations for the BSC and the length of time a company has used the BSC. Thus, we may say that this result is validating the findings addressed above.

7.4.2 USERS AND NON-USERS: ARE THERE ANY DIFFERENCES?

Table 7.4. gives descriptive statistics for the two subsamples of non-users (n=29) and users (n=42) of the BSC. The two subsamples differ with respect to the three characteristics that have been included. On average, the companies that use the BSC were established earlier than the non-users; they have more employees on average, and their export sales represent more of their total sales.

<table>
<thead>
<tr>
<th>Business information</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-users of BSC (n=29):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of establishment</td>
<td>1927</td>
<td>2012</td>
<td>1981</td>
<td>23.2</td>
<td>–0.79</td>
<td>–0.21</td>
</tr>
<tr>
<td>Number of employees</td>
<td>3</td>
<td>200</td>
<td>41.8</td>
<td>45.4</td>
<td>1.99</td>
<td>4.50</td>
</tr>
<tr>
<td>Export sales (in %)</td>
<td>0.0</td>
<td>100.0</td>
<td>20.9</td>
<td>32.1</td>
<td>1.39</td>
<td>0.65</td>
</tr>
<tr>
<td>Users of BSC (n=42):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of establishment</td>
<td>1835</td>
<td>2013</td>
<td>1957</td>
<td>47.1</td>
<td>–0.97</td>
<td>0.36</td>
</tr>
<tr>
<td>Number of employees</td>
<td>2</td>
<td>3000</td>
<td>223.2</td>
<td>527.4</td>
<td>4.23</td>
<td>19.78</td>
</tr>
<tr>
<td>Export sales (in %)</td>
<td>0.0</td>
<td>100.0</td>
<td>19.8</td>
<td>29.6</td>
<td>1.56</td>
<td>1.25</td>
</tr>
</tbody>
</table>

These differences may be analysed further using t-tests. The differences in the year of establishment (age) and number of employees are both significant at the 0.01 level and at the 0.05 level respectively, whereas the difference in export sales is not significant. Thus, it appears that on average, the non-users are newer companies and have fewer employees than the users of the BSC. However, it is important to remember that among the users there are both large and small companies, so the findings should be treated with due care.
7.4.3 ADOPTION AND DIFFUSION PROCESSES

Figure 7.1 presents the distribution of the number of years that the BSC has been used by the 42 respondents that do so. By deducting this number from 2015, it is possible to identify the start year for all respondents. The starting point for implementation of the BSC is considered to be 1992 and the early adopters in our sample (four of the respondents) started using it in 1995. In 1996, another of our sample companies started using the BSC, increasing the number from four to five. In 2000, another five companies started using the BSC, resulting in ten users by the end of that year. This demonstrates the adoption process of the sample of BSC users and this is presented in Figure 7.2., which shows the cumulative adoption curve of the BSC in the sample.

![Cumulative Adoption Curve](image)

Figure 7.2. The cumulative adoption curve (the diffusion curve) of the Balanced Scorecard

A linear regression line is included in this figure with the dependent variable being the number of users and the independent variable the number of years. The model’s explanation power and fit are high and with no violations (residuals, etc.). However, this line is included only for illustration purposes. When comparing this
line with the observations, it appears that the cumulative adoption curve is somewhat S-shaped implying that the adoption curve is bell-shaped. Such shapes are in accordance with theories regarding the adoption and diffusion of innovations (see the discussion above).

7.4.4 THE USAGE OF THE BSC

In order to study the adoption and diffusion processes in more detail the subsample of respondents (n=42) who use the BSC is assigned to two subsamples: (1) fewer than 10 years (n=22) and (2) 10 years or more (n=20). Table 7.5. presents descriptive statistics for the two subsamples. When comparing the means for these two subsamples, differences appear. However, t-tests show that the only significant difference is the year of establishment, and this is not an important characteristic.

**Table 7.5. Descriptive statistics of less than 10-years users (n=22) and at least 10-years users of BSC (n=20) with respect to company information.**

<table>
<thead>
<tr>
<th>Business information</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10-years users of BSC (n=22):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of establishment</td>
<td>1878</td>
<td>2013</td>
<td>1977</td>
<td>36.2</td>
<td>−1.39</td>
<td>1.51</td>
</tr>
<tr>
<td>Number of employees</td>
<td>2</td>
<td>1200</td>
<td>128.0</td>
<td>258.7</td>
<td>3.74</td>
<td>15.29</td>
</tr>
<tr>
<td>Export sales (in %)</td>
<td>0.0</td>
<td>100.0</td>
<td>26.7</td>
<td>31.1</td>
<td>1.11</td>
<td>−0.06</td>
</tr>
<tr>
<td>At least 10-years users of BSC (n=20):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of establishment</td>
<td>1835</td>
<td>2003</td>
<td>1935</td>
<td>48.4</td>
<td>−0.69</td>
<td>−0.06</td>
</tr>
<tr>
<td>Number of employees</td>
<td>13</td>
<td>3000</td>
<td>327.9</td>
<td>710.1</td>
<td>3.33</td>
<td>11.50</td>
</tr>
<tr>
<td>Export sales (in %)</td>
<td>0.0</td>
<td>99.0</td>
<td>12.3</td>
<td>26.6</td>
<td>2.58</td>
<td>6.34</td>
</tr>
</tbody>
</table>

Table 7.6. shows the overall level for each of the two subsamples in the use of financial key measures, customer-related key measures, key measures related to the internal processes, key measures related to the learning and growth perspective, and the use of key measures for all the four perspectives of the BSC. In addition, the respondents’ answer regarding the variable «Probability of recommending BSC» is included as well as the number of years that the company has used the BSC.
### TABLE 7.6. Descriptive statistics of less than 10-years users (n=22) and at least 10-years users of BSC (n=20) with respect to BSC-perspectives as well as some control variables.

<table>
<thead>
<tr>
<th>Business information</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Less than 10-years users of BSC (n=22):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of financial key measures</td>
<td>4</td>
<td>7</td>
<td>5.82</td>
<td>1.01</td>
<td>-0.53</td>
<td>-0.62</td>
</tr>
<tr>
<td>Use of key measures related to the customer perspective</td>
<td>1</td>
<td>7</td>
<td>4.50</td>
<td>1.68</td>
<td>-0.56</td>
<td>-0.51</td>
</tr>
<tr>
<td>Use of key measures related to internal processes</td>
<td>1</td>
<td>6</td>
<td>4.23</td>
<td>1.45</td>
<td>-0.65</td>
<td>-0.44</td>
</tr>
<tr>
<td>Use of key measures related to learning and growth</td>
<td>1</td>
<td>7</td>
<td>4.18</td>
<td>1.40</td>
<td>-0.35</td>
<td>0.45</td>
</tr>
<tr>
<td>Use of key measures for all perspectives of BSC</td>
<td>2</td>
<td>7</td>
<td>4.23</td>
<td>1.15</td>
<td>-0.33</td>
<td>0.39</td>
</tr>
<tr>
<td>If asked, the probability of recommending BSC</td>
<td>4</td>
<td>7</td>
<td>5.45</td>
<td>1.06</td>
<td>-0.01</td>
<td>-1.14</td>
</tr>
<tr>
<td>Number of years used the Balanced Scorecard (BSC)</td>
<td>1</td>
<td>8</td>
<td>3.8</td>
<td>2.20</td>
<td>0.52</td>
<td>-0.73</td>
</tr>
<tr>
<td><strong>At least 10-years users of BSC (n=20):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of financial key measures</td>
<td>1</td>
<td>7</td>
<td>5.55</td>
<td>1.50</td>
<td>-1.50</td>
<td>3.15</td>
</tr>
<tr>
<td>Use of key measures related to the customer perspective</td>
<td>3</td>
<td>7</td>
<td>5.55</td>
<td>1.10</td>
<td>-0.54</td>
<td>0.04</td>
</tr>
<tr>
<td>Use of key measures related to internal processes</td>
<td>3</td>
<td>7</td>
<td>5.30</td>
<td>1.13</td>
<td>-0.18</td>
<td>-0.60</td>
</tr>
<tr>
<td>Use of key measures related to learning and growth</td>
<td>2</td>
<td>7</td>
<td>4.95</td>
<td>1.57</td>
<td>-0.18</td>
<td>-1.17</td>
</tr>
<tr>
<td>Use of key measures for all perspectives of BSC</td>
<td>3</td>
<td>7</td>
<td>4.90</td>
<td>1.17</td>
<td>0.21</td>
<td>-0.61</td>
</tr>
<tr>
<td>If asked, the probability of recommending BSC</td>
<td>3</td>
<td>7</td>
<td>5.80</td>
<td>1.06</td>
<td>-1.05</td>
<td>1.33</td>
</tr>
<tr>
<td>Number of years used the Balanced Scorecard (BSC)</td>
<td>10</td>
<td>20</td>
<td>13.8</td>
<td>4.11</td>
<td>0.51</td>
<td>-1.38</td>
</tr>
</tbody>
</table>
When comparing the answers of the two subsamples, the mean levels of the variables are higher for the subsample «At least 10-years users of BSC», with the exception of the first item («Use of financial key measures»). T-tests show that two of the differences are significant at the 0.05 level, i.e. «Use of key measures related to the customer perspective» and «Use of key measures related to internal processes». However, the following two variables are not far from being significant: «Use of key measures related to learning and growth» and «Use of key measures for all perspectives of BSC». The other differences are not significant.

For the four BSC perspectives, four to five items representing the measure-level were included in the questionnaire (see the discussion in «Context and methodology»). Altogether, 18 items were included. Regarding the five items representing the financial perspective, no significant differences were found at the 0.05 level. For the customer perspective (four items), one significant difference was found, i.e. measurements of customer attitudes (customer satisfaction, customer loyalty, etc.). Regarding internal processes, there are two significant differences, i.e. «Day-to-day operations» and «Customer acquisition», while for the learning and growth perspective, two significant differences were also found, i.e. «Employee attitudes» (satisfaction, loyalty, etc.) and «Corporate culture». All these differences are at least at the 0.05 level. These findings are very interesting and give some indications with respect to the diffusion process of the BSC. These are further discussed in the following section of this paper.

7.5 DISCUSSION

This paper addresses the adoption and diffusion processes of the BSC and discusses the following three BSC-levels: the overall level, the perspective level (the financial perspective, the customer perspective, the internal perspective, and the learning and growth perspective), and the measure level. The focus is on the two first levels, but the item level (measure) is also briefly addressed. In addition to a description of the adoption and diffusion processes the following research questions are addressed: Is BSC an innovation? Are there differences with respect to the use of BSC among industries and businesses? Can the findings give some insight regarding the content of the BSC used over time? In order to answer these research questions there is a need of a context.

It has been questioned whether BSC is an innovation. According to the discussion above, an innovation is something «new», which results in a significant change. However, what is seen as «new» may differ from person to person. Thus,
old ideas applied to new settings or even old ideas being reintroduced into the same setting at a later point in time, may be seen as innovations. An idea could have a long history, but may be considered new by people who were previously unaware of that idea. The French «Tableau de Bord», introduced in 1929, was well known in France, but unknown in many other countries when the BSC was introduced in 1992. Even if the «Tableau de Bord» has many points in common with the BSC, we can say that the BSC is an innovation elsewhere in the world, but not in France.

In order to address the remaining research questions, a survey was sent to 400 businesses in Møre og Romsdal. The actual population declined to 347, for various reasons (see the discussion above) of which 71 completed the questionnaire giving a response rate of 21%. The CEOs of the companies were the most frequent respondents (about 65%); however, all the other respondents represented the top management teams of the companies. Thus, all the respondents had perfect insight when answering the questions.

Of the 71 companies that answered the survey, 42 or about 60% are users, and 29 or about 40% are non-users. This finding is in accordance with other studies (Rigby and Bilodeau, 2009; 2011; 2013). On average, the users of the BSC have done so for about 8.6 years. However, the variation is high, i.e. from one to 20 years. It seems that on average the non-users are newer companies and have somewhat fewer employees than the users of BSC.

There appears to be differences among the industries. In the banking industry all seven respondents are using the BSC. On average, these seven companies have been using this for about 11 years, although there are differences (from six to 19 years). Six of the seven respondents in the retail industry are users of the BSC, i.e. about 85%. On average they have done so for about nine years. The use of the BSC is also high (at least 50%) in the other specified industries: the transport industry, the energy industry, the maritime industry, and the manufacturing industries. For each of these industries the average number of years differs from about 4.5 years to about 9 years. The maritime industry is a bit different from the other industries. The proportion of users is much the same as in the other industries (seven users out of thirteen respondents); however, the users have only an average experience of about 4.5 years. There is clearly great variation in this respect among all the industries.

Four innovators from the sample of 42 businesses started using the BSC in 1995. By adding together the number of users from their starting year, a curve was drawn. Figure 2 presents the cumulative adoption curve (the diffusion curve). It seems to be S-shaped, implying that the adoption curve is bell-shaped. The find-
ings indicate that the use of the BSC may still be on the increase, however at a diminishing rate. This curve may be related to the adopter categories discussed above. The innovators and some of the early adopters started using the BSC during the final years of the 1990s. At present, it appears that the BSC adopters belong to the late majority. Thus, the diffusion process appears to be in the maturity stage.

In order to gain some insight into the usage of the BSC over time, the sample of users was split into two subsamples: (1) fewer than 10 years (n=22) and (2) 10 years or more (n=20). When comparing the answers of the two subsamples, the mean levels of the variables are higher for the subsample «At least 10-years users of BSC», with the exception of the first item («Use of financial key measures»). T-tests show that two of the differences are significant at the 0.05 level, i.e. «Use of key measures related to the customer perspective» and «Use of key measures related to internal processes». For all the four BSC perspectives four to five items representing the measure-level were included in the questionnaire. Regarding the five items representing the financial perspective, no significant differences were found at the 0.05 level. For the customer perspective (four items), one significant difference is found, i.e. measurements of customer attitudes (customer satisfaction, customer loyalty, etc.). With respect to internal processes, there are two significant differences, i.e. «Day-to-day operations» and «Customer acquisition». For the learning and growth perspective, two significant differences are found, i.e. «Employee attitudes» (satisfaction, loyalty, etc.) and «Corporate culture». These findings indicate that the financial measures seem to have the most to say when a business adopts the BSC; however, measures related to the other three perspectives are also included in the BSC report. Over time, measures regarding the other three perspectives are emphasized, first the customer perspective, and next the two which remain (the internal perspective and the learning and growth perspective). Thus, the adoption process in a way broadens the diffusion process to include more aspects of the BSC perspectives. These findings support Speckbacher et al. (2003), who identify three different types of BSC. The three types range from minimum-standard to a fully developed BSC. The BSC type I can be defined as a performance measurement system. The BSC type II concerns cause-and-effect relations in strategy development, while the use of the BSC type III includes strategy implementation. Thus, it seems that the content of the BSC may change over time, i.e. from a measurement system to a strategic management accounting system emphasizing all the four perspectives of the BSC.

The findings indicate that the adoption process of the BSC will take some time. This does not necessarily imply that the process is time-consuming but rather that
it is best described as a step-by-step implementation process. It is likely that this process is related to organizational development, organizational learning and «learning by doing». Thus, the managerial implications seem to be that the adoption of the BSC is an ongoing process, probably over a number of years. Of course, changes in strategies may imply changes regarding key success factors and therefore the key measures of the scorecard. When a number of businesses have used the BSC for up to 20 years and the number of users is on the increase, this may indicate that businesses will continue to use this strategic management accounting tool in one way or another in the future.

The findings are based on a survey among businesses in Møre og Romsdal, but a wider survey representing businesses from all over Norway would give further insight. In addition, case studies of businesses that have used the BSC for some years may give greater insight. Four of the respondents have used the BSC for about 20 years. A study of the processes within these companies may shed light on the development of the usage of the BSC over time. While it appears that the included measures and the usage of the BSC is changing over time, there is little information about how it is used. Who produces the BSC report for each period of time? Who is the «owner» of this report? Who discusses this report? Who is the change advocate? What alternative actions are there? Another research direction is the relationship between the use of the BSC and business performance, i.e. both the effect of the included measures of the BSC report and the effect of the way in which it is used with respect to business performance.

7.6 CONCLUSION

The innovation «The Balanced Scorecard» (BSC) was introduced in 1992 by Robert S. Kaplan and David P. Norton in an article in Harvard Business Review (Kaplan and Norton, 1992). Three years later, in 1995, four businesses situated in Møre og Romsdal started using this new management accounting tool. Twenty years later the number of users has increased, and a survey among businesses in the county shows that approximately 60 % of the respondents are users of BSC. By adding together the number of users from their starting year, an S-shaped curve has been drawn, an expected shape for cumulative adoption curves and diffusion curves. The adoption curve is bell-shaped. The findings indicate that the use of the BSC may still be on the increase, however at a diminishing rate. At present, it appears that the BSC adopters belong to the late majority and that the diffusion process is in the maturity stage. The usage of the scorecard appears to change over
time. At first, the focus is on financial measures, while also including some indicators from the other perspectives. Over time, measures regarding the other three perspectives are emphasized (the customer perspective, the internal perspective, and the learning and growth perspective). The findings indicate that the adoption process of the BSC will take some time. There is a clear need for further studies, particularly case studies.

LITERATURE


