

Budgeting changes and success: abandonment, reform or stability in Finnish manufacturing firms?

Budgeting
changes and
success

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91

Received 8 December 2022
Revised 17 May 2023
20 September 2023
Accepted 24 October 2023

Abstract

Purpose – The need to change budgeting has been frequently debated. Drawing on the literature on management accounting and budgeting change, this study aims to explore changes in budgeting and whether experienced success of budgeting varied with time and budget type. Changes in the use of the following budget types were investigated: fixed, revised, rolling, flexible and hybrid budgets.

Design/methodology/approach – This study uses a mixed research methodology. Survey data was collected from the same business units of large Finnish manufacturing firms in 2004 (Time 1) and 2016/2017 (Time 2) ($N = 28$). In addition, some of the respondents of the latter survey were interviewed in 2023 (Time 3).

Findings – Almost all business units were found to have remained loyal to budgeting. However, changes in budget types were not uncommon and varied considerably. Overall, the use of fixed budgets continued strongly, the use of revised and hybrid budgets declined, and the use of rolling budgets increased over time. Moreover, the joint use of budgets declined. The perceived success of budgetary processes was, initially, weakened by the use of fixed budgets and, later, by the use of revised budgets. The interview data further illustrates some of the patterns of, and reasons behind, the changes.

Originality/value – Longitudinal analysis of change in the same business units was useful in revealing the patterns of change in budgeting and on relationships between the variables analysed over time. Further research could be carried out using more extensive case studies in companies or sector-focused surveys longitudinally.

Keywords Budget, Budget type, Change, Longitudinal study, Mixed method research, Survey

Paper type Research paper

1. Introduction

The need to change budgeting has been frequently debated in recent decades. A group of practitioners and consultants, known as the Beyond Budgeting movement, has questioned the relevance of annual budgets in dynamic and highly volatile environments (Bogsnes, 2013; Bunce *et al.*, 1995; Hope and Fraser, 1997; Wallander, 1999). Two alternative solutions to the shortcomings of annual budgeting have been suggested in literature

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The author thanks Editor Zahirul Hoque, the two anonymous reviewers, Eeva-Mari Ihantola, Ulla Kinnunen, Kalle Kraus, Kenneth Merchant, Utz Schäffer and the participants of the 20th Annual Conference for Management Accounting Research held in Vallendar, Germany, in 2023 for their very helpful comments on an earlier draft of this paper. Financial support from the Foundation for Economic Education is gratefully acknowledged.



Journal of Accounting &
Organizational Change
Vol. 19 No. 6, 2023
pp. 91-111
Emerald Publishing Limited
1832-5912
DOI 10.1108/JAOC-12-2022-0187

(Hansen *et al.*, 2003): either improve annual budgeting by reforming it with, for example, more frequent budget revision, or abandon annual budgeting altogether and adopt alternative steering mechanisms such as rolling forecasts and balanced scorecards.

Although surveys have predicted moderate, if not high, readiness among respondents to develop their budgets (Ekholm and Wallin, 2000; Libby and Lindsay, 2010; Popesko *et al.*, 2015), the idea of abandoning budgets has also received an increasing amount of attention. This is especially true in the Nordic countries where companies have been found to advance beyond budgeting ever since the Swedish bank Handelsbanken abandoned budgets in the 1970s (Becker, 2014; Bjørnenak, 2013; Bogsnes, 2013; Bourmistrov and Kaarbøe, 2013; Henttu-Aho and Järvinen, 2013; Johanson, 2013; Kaarbøe *et al.*, 2013; Sandalgaard and Bukh, 2014; Valucas, 2019; Østergren and Stensaker, 2011). This raises questions such as has budgeting changed over time and do Nordic companies still use budgeting?

Drawing on the literature on management accounting and budgeting change, the purpose of this study is to further explore changes in budgeting over time and whether experienced success of budgeting varied with time and budget type. As different budgets exist (Bhimani *et al.*, 2019; Järvenpää *et al.*, 2001), this study is concerned with changes in the use of fixed, revised, flexible, rolling and hybrid budgets (the latter ones of which integrate budget information and other information, e.g. from balanced scorecards). As the implementation of changes in organizational steering mechanisms can take a long time (Anderson, 1995; Shields, 1995), a longer time period was analysed. Survey data was collected from the same business units of large Finnish manufacturing firms in 2004 (Time 1) and 2016/2017 (Time 2) ($N = 28$). Finally, interview-based data was collected from some of the same business units (in 2023, Time 3) to capture practitioner reactions in the survey results. Hence, mixed methods research, wherein both quantitative and qualitative data was collected and analysed within the study, was used.

Analysis of beyond budgeting and budgeting reforms has become an important topic of academic research and education (Bhimani *et al.*, 2019; Burns *et al.*, 2013; Drury and Tayles, 2021; Hartmann *et al.*, 2021; Järvenpää *et al.*, 2001; Merchant and Van der Stede, 2017). However, beyond budgeting changes have typically been studied with small-sample case studies (Becker, 2014; Bourmistrov and Kaarbøe, 2013; Henttu-Aho and Järvinen, 2013; Kaarbøe *et al.*, 2013; O'Grady and Akroyd, 2016; Sandalgaard and Bukh, 2014; Valucas, 2019; Østergren and Stensaker, 2011), and budgeting practices and reforms have been analysed with cross-sectional surveys (Bhimani *et al.*, 2018; Ekholm and Wallin, 2000 and 2011; Libby and Lindsay, 2010; Popesko *et al.*, 2015; Sivabalan *et al.*, 2009). This paper contributes to such literature with longitudinal mixed methods evidence on changes in budgeting practice and its success over time.

This paper is organized as follows: Section 2 reviews literature related to management accounting and budgeting change. The empirical data, methods and measurement instruments are introduced in Section 3. Section 4 presents empirical results. In Section 5, the results are discussed according to the theoretical framework to highlight the contribution of the paper. Section 6 concludes the paper and offers suggestions for future research.

2. Development of the research questions

The overall research questions of this study – has budgeting changed over time and has the experienced success of budgeting varied with time and budget type – have several links to previous research on management accounting and budgeting change. In their book *Relevance Lost*, Johnson and Kaplan (1987) already questioned the relevance of contemporary management accounting practice and whether there has been sufficient change in management accounting techniques to meet rapid technological change, vigorous

global and domestic competition and enormous information-processing demands and capabilities. Since then, scholars have been highly interested in the implementation of new management accounting techniques and the process of change adopting a variety of research methods and theoretical approaches to explain what drives or hampers successful diffusion or implementation of management accounting techniques (for reviews, see Broadbent and Laughlin, 2005; Burns and Vaivio, 2001; Busco, 2006; Chenhall, 2003; Granlund and Modell, 2005; Malmi, 1999; Scapens, 2006, p. 336; Sulaiman and Mitchell, 2005; Varaniūtė *et al.*, 2022; Zawawi and Hoque, 2010).

While budgeting change has also been researched, such research has typically focused on developments in the companies that (aim to) abandon budgeting and move beyond it. The first specific research question of this paper also focuses on the abandonment of budgets. Østergren and Stensaker (2011) took the first step in that direction by examining how Beyond Budgeting functions in practice and potential challenges it faces. Based on a case study conducted in a large multidivisional oil and energy company, they found that the means of control exercised in the absence of budgets altered the relationship between corporate management and division management and new lines of dependency were created between divisions. In another Beyond Budgeting case study, Bourmistrov and Kaarbøe (2013) illustrated how the use of new information provided by the new control principles, moved decision-makers into the “stretch zone”, characterized by new characteristics of decision-makers’ mindsets and behaviour. They also demonstrated how unbundling target setting, forecasting and dynamic resource allocation enabled better forward-looking and strategy-oriented decisions in situations requiring negotiation and learning. Henttu-Aho and Järvinen’s (2013) multiple case study in industrial companies further illustrated how companies move towards Beyond Budgeting practices gradually. Various management accounting tools were found to replace functions that budgeting serves, not budgeting in its entirety. In some of the examined cases, budgeting ended up being abandoned and in others it was radically simplified (*ibid.*, p. 765).

In their case studies, Becker (2014), as well as O’Grady and Akroyd (2016), reported that organizations can operate without traditional budgets and still maintain a high level of control by developing appropriate cultural and administrative control systems that are internally consistent with their planning, cybernetic and reward systems (O’Grady and Akroyd, 2016). In contrast, Sandalgaard and Bukh (2014) found their case company to be inspired by the Beyond Budgeting approach but not fully abandoning budgets; operational-planning purposes were still used to explain variances in performance and to track deviations from plans. They proposed that organizations are likely to maintain fixed budget targets with a larger number of line items, at least in lower levels in the organization.

In his paper, Bogsnes (2013) described Beyond Budgeting principles in Statoil, a Norwegian oil and gas company. Bjørnenak (2013) shifted the analysis of Beyond Budgeting to the Norwegian banking sector. According to his findings, 9 of the 81 responding banks (11.1%) did not have budgets. His data did not support the utility of the advanced solutions, as no positive associations were found for balanced scorecards and rolling forecasts. A low-rate intention to abandon budgeting was also found in medium and large industrial companies in Czechia (Popesko *et al.*, 2015).

Drawing on data from a large multinational corporation, Kaarbøe *et al.* (2013) found variation in the implementation of Beyond Budgeting across business units. While one of the three business units practiced Beyond Budgeting as prescribed at the corporate level, in the other two, organizational members struggled to see the benefits of the new system and changing their practices. One of these two business unit ended up reintroducing traditional budgeting as its official control system. Valucas’s (2019) case study of a multinational bank

contributed to literature by illustrating a budget abandonment initiative that stalled not long after its inception.

More recently, a survey by [Matějka et al. \(2021\)](#) mapped out the Beyond Budgeting practices of 80 organizations which were implementing it either fully or partially. According to their findings, such organizations tend to use high levels of decentralization, flexible resource allocations without fixed timelines, relative target setting and weak individual incentives. Difficulties were found in reducing the reliance on a fixed annual budget for decision-making and in the coordination of long-term investment. Weak interaction effects were found between combinations of various management control practices and the likelihood of Beyond Budgeting implementation, management control effectiveness and control system gaming.

In conclusion, the idea of abandoning budgets and its consequences have received an increasing amount of attention as companies have pursued it. As the above studies have shown, Beyond Budgeting may take many forms (see also [Johanson, 2013](#), p. 69), be implemented to various degrees and have many challenges in practice. Given the interest in Beyond Budgeting in Nordic countries in particular ([Johanson, 2013](#), p. 69), in the first research question, I will further investigate changes in budgeting as follows:

RQ1. Has budgeting been abandoned?

The next two research questions address past and upcoming changes in the use of budget types. According to prior literature ([Hansen et al., 2003](#)), companies should address the shortcomings of annual budgeting, if not by abandoning it, by at least reforming it with, for example, more frequent budget revision. A key finding of previous surveys on Finnish, North American, Australian and Swedish firms was, nevertheless, that annual budgets continue going strong ([Ekholm and Wallin, 2000, 2011](#); [Libby and Lindsay, 2010](#); [Sivabalan et al., 2009](#)). Whilst rolling budgets had been argued to replace the traditional annual budget, providing a more frequently updated and accurate set of financial numbers ([Wallander, 1999](#)), studies by [Ekholm and Wallin \(2000\)](#), [Sivabalan et al. \(2009\)](#), [Bhimani et al. \(2018, p. 311\)](#) and [Hyvönen et al. \(2022\)](#) have indicated that companies mostly use annual budgets and rolling forecasts in parallel. Moreover, they were found to be used for nearly identical reasons ([Ekholm and Wallin, 2000](#), p. 530; [Sivabalan et al., 2009](#), p. 850).

Previous studies have also examined the readiness to change budgets. [Glader et al. \(1996\)](#) surveyed this question in Sweden, finding that a relatively large number (40%) of respondents indicated that changes to the budgeting process are under way; the main change being that rolling forecasts will play a bigger role in the future. Based on [Ekholm and Wallin's \(2000\)](#) data on large Finnish firms, the majority of their responding companies (60.7%) indicated a readiness for continuously developing their annual budget to meet new demands. According to [Libby and Lindsay's \(2010, p. 60\)](#) findings in North American companies, 46% of respondents planned to change or adapt their budgeting systems within the next two years. The following types of changes were reported: incorporate a bottom-up orientation and gather more information from frontline managers; use rolling forecasts; better align strategic planning with budgeting; and prepare less detailed budgets initially and update them regularly using ongoing forecasts. Finally, [Popesko et al. \(2015\)](#) found that less than one-third (30%) of the responding Czech companies intended to modify their current budgeting system.

Given that the abovementioned studies have been cross-sectional, very little is still known about actual changes in budgeting. Next, I further investigate whether there really has been changes as predicted and whether there will be changes in the future, as follows:

RQ2. Has the use of budget types changed over time, and if so, how?

RQ3. How might budgeting develop in the future?

Regarding changes in budgeting, a further concern is whether experienced success of budgeting varies according to time and budget type. This research question is posed next. In the 1990s, the Beyond Budgeting movement (Bogsnes, 2013; Bunce *et al.*, 1995; Hope and Fraser, 1997) began to critique the high preparation cost, both in time and money, of the annual budget and its inflexibility in light of rapidly changing external circumstances and internal opportunities (for reviews, see Drury and Tayles, 2021, p. 406; Ekholm and Wallin, 2000, p. 521; Hansen *et al.*, 2003, p. 96; Kaplan, 2009, p. ix). A need for forward-looking information and non-financial information for management decision-making, rather than backward-looking information for management control, was identified at that time (Scapens, 2006, p. 336).

There has been growing evidence that many survey participants are experiencing problems with implementing a budget and, in the extreme, not having success with it (for reviews, see Chenhall, 2003; Hoque, 2006, p. 31). Based on the research summarized by Marginson and Ogden (2005), two alternative approaches can be identified: Firstly, a high reliance on budgets may be associated with provoking unfavourable reactions from managers on account of the pressure they experience to meet pre-determined budget targets with dysfunctional consequences for the achievement of organizational objectives. Secondly, managers may view budgeting more positively regarding it as functional in providing goal clarity, a degree of stability and an “anchor”. Moreover, achievement of clearly defined budget targets is likely to provide managers with a sense of impact on and commitment to organizational objectives demonstrating an acceptable degree of managerial competence and enhancing their feelings of empowerment (Marginson and Ogden, 2005, p. 56).

Although there are numerous studies on the impact of budgeting solutions on organizational performance and on manager motivation or job satisfaction (Wagner *et al.*, 2021, p. 603), previous literature has not tackled the question of whether the success of budgeting varies according to time and budget type. Therefore, the fourth research question of this study will further explore this issue:

RQ4. Has the experienced success of budgeting varied according to time and budget type?

3. Method

Data for this study was collected with two surveys and subsequent interviews with some of the respondents to the latter questionnaire. Each of the methods is described separately in this section but the presentation of findings from each component of the investigation is integrated.

3.1 Survey participants and procedure

The participants came from large basic manufacturing companies. Target companies of the first survey were randomly selected from the Research Institute of the Finnish Economy’s database, which includes information on the largest firms in Finland. To increase the sample size, targeted managers were identified in the fields of financial management, production and operations and research and development. Firm websites, e-mails and telephone calls confirmed the suitable business units and persons to be contacted to participate in the survey. Respondents were informed about the study goals and assured that participation

was voluntary and their responses would be treated confidentially. Respondents were also given a summary of the results when participating in the survey.

The questionnaire data were collected in two waves using mail and/or electronic surveys (Dillman, 2000, 2007). Firstly, in May–June 2004 (Time 1), of the top managers contacted ($N = 300$), 173 top managers from at least 89 business units returned the completed mail questionnaire after three reminders, which was a response rate of 57.7%. Secondly, in December 2016 to May 2017 (hereafter 2016, Time 2), 280 corresponding top managers of the same large companies were contacted [1]. Of these, 76 top managers from at least 54 business units returned the completed questionnaire, which was a response rate of 27% [2]. An attempt was made to match responses to the two surveys to minimize organizational, functional- and individual-level variation. The present study was restricted to one response per business unit from the same respondent, or another with a similar title (i.e. his or her successor) ($n = 28$) [3].

At Time 1 of this study ($N = 28$), the average age of participants was 49.4 years (range 28–63, $SD = 7.6$). The average length of employment in their current position was ca. 7.8 years (range 1–20, $SD = 6.1$). The majority were men (89%) and held an academic degree (master’s level or higher) (79%). On average, the latest annual turnover of the participating business units was ca. €261m and the average number of personnel was about 1,037. At Time 2 ($N = 28$), the average age of participants was 50.0 years (range 38–64, $SD = 7.8$) and average length of employment in their current position was 5.6 years (range 0.25–23.3, $SD = 5.3$). The majority were men (75%) and held an academic degree (master’s level or higher) (86%). On average, the latest annual turnover of the participating business units was ca. €383m and the average number of employees ca. 1,001.

Information about the functional area, educational background and industry category of the 28 participants at Time 1 and Time 2 is shown in Table 1. Overall, the typical participant

Table 1.
Respondents by
functional area,
education and
industry during 2004
($n = 28$) and 2016
($n = 28$)

Participants	2004		2016	
	<i>f</i>	%	<i>f</i>	%
<i>Panel A: Functional area</i>				
CFO or corresponding	20	71.4	20	71.4
Production and operations	1	3.6	1	3.6
Research, development, etc	7	25.0	7	25.0
<i>Panel B: Educational background</i>				
Academic degree	22	78.6	24	85.7
Business	15	—	17	—
Engineering	5	—	5	—
Other	2	—	0	—
N/a	—	—	2	—
Other (e.g. community college) degree	6	21.4	4	14.3
<i>Panel C: Industry category</i>				
Metal	8	28.6	8	28.6
Foodstuffs and beverages	6	21.4	6	21.4
Chemicals and plastics	4	14.3	4	14.3
Forest	4	14.3	4	14.3
Multiple industries	3	10.7	3	10.7
Electronics	2	7.1	2	7.1
Textile	1	3.6	1	3.6

Source: Created by author based on SPSS output

was a chief financial officer (CFO; or a person with a corresponding title) with an academic business degree. Although the business units investigated represent diverse manufacturing industries, they are most often in the fields of metal ($n = 8$), foodstuffs and beverages ($n = 6$), chemicals and plastics ($n = 4$) and forest ($n = 4$).

3.2 Managing survey data validity and potential response bias

While the final response rates of ca. 31.5% (28/89) and 51.9% (28/54) business units are not high, it should be noted that it is very difficult to get responses twice from the very same person or a person in a similar position (i.e. his/her successor) in each business unit. Notwithstanding this, a range of data validity measures were applied to ensure the quality of the data (Bhimani *et al.*, 2018). Response errors were reduced by a three-step approach comprising survey pre-testing, follow-up procedures and non-response bias tests (Van der Stede *et al.*, 2005). The survey was initially pre-tested among academicians and practitioners holding budgeting expertise to refine questions and instructions. Consistent with Dillman (2000), the follow-up procedures included posting reminder postcards a few weeks after the initial survey mail-out and, later on, two additional reminders with new survey forms to those respondents who had not yet participated in the survey. Finally, the survey mail-out was conducted over four stages, and substantive differences in available variables were not noted for early and late respondents or for the respondents and participants except that most of the respondents were CFOs (or corresponding).

3.3 Measures

This study was part of a larger project on budgeting. Therefore, the measures for each construct had to be short. All but one of the constructs analysed in this paper were measured two times (T1–T2).

3.3.1 Types of budgets. Both surveys asked respondents to mark which types of budgets are used in their business unit (and hence, not to mark those that they do not use). Five items were designed to define and measure whether the respondents use fixed, revised, rolling, flexible and/or hybrid budgets. They were:

- (1) a fixed budget that is fixed for the period once set;
- (2) a budget that is revised during the period (i.e. a revised budget);
- (3) a rolling budget that incrementally extends the period;
- (4) a budget that recalculates budgeted profit not using standard costs and revenues but at actual levels of activity (i.e. a flexible budget); and/or
- (5) a hybrid system (integrates budget information and other information, e.g. from balanced scorecards).

A budget type marked as used was coded “1” and others “0”.

Based on changes in the use of one or more budget types, a new variable was created to measure *changes in the use of budget type(s)* in terms of whether it was possible to identify any changes (yes or no) in the responses regarding budget type(s) used during 2004 (Time 1) and 2016 (Time 2). Yes was coded “1” and no “0”.

3.3.2 Future changes in budgeting. In the second survey, respondents’ intentions to change their budgeting in the future was measured with the following question taken from Libby and Lindsay (2010, p. 69): Do you intend to make any changes to your budgeting system over the next two years (no/yes), and if yes, what? No was coded “0” and yes “1”.

3.3.3 Success of budgetary control systems. A measurement instrument developed and validated in this same sample by [Chapman and Kihn \(2009\)](#) was used to assess the success of budgeting. Four items were used to measure the perceived success of budgetary processes and information systems. These items assess whether the overall benefits of the budgeting processes and information systems used in the budgeting process outweigh the costs, and whether the budgetary processes and the information systems are the right tools for managing the business unit. A measurement scale from 1 (disagree completely) to 7 (agree completely) was used. Because a one-factor solution was obtained with principal component analysis with oblique Oblimin rotation, the four items were summed up and averaged. Cronbach's alpha reliability coefficients for this composite variable were 0.826 (at Time 1) and 0.754 (at Time 2).

3.4 Interviews

Theme interviews were conducted to obtain richer insights than normally possible from a questionnaire survey alone. Of the 28 respondents who participated in the survey during 2016 (at Time 2), 14 had changed firms (one to three times), 3 had retired and 2 were no longer involved with budgeting. Of the remaining 9 respondents, 4 CFOs agreed to be interviewed. In addition, a recently retired CFO agreed to be interviewed. The five interviewees worked in business units engaged in chemicals, foodstuffs, forest and electronics. I presented questions about the current and former budget type(s) used, reasons for using the same budget type or reasons for change, perceived success of budgeting and intended changes to the budgeting system. The average interview length was 30.7 min. All interviews were conducted in Teams or by telephone during March and April 2023, recorded, subsequently transcribed in Microsoft Word and manually analysed with content analysis.

4. Findings

This section of the paper presents the empirical findings. The 2016 survey results are compared and contrasted with the 2004 survey results, both of which were based on data collected from the 28 same or corresponding participants in the same business units of large Finnish companies. Additional evidence from interviews further illustrates some of the patterns of, and reasons for, change.

4.1 Loyalty to budgeting

RQ1 concerns whether budgets have been abandoned. Based on the survey findings, the budgets examined were used in all the 28 business units in 2004 and in all but two business units in 2016. Most of the interviewees also agreed that, in addition to forecasts, some kind of annual budget is still needed, for instance, to set targets, plan resources, evaluate deviations, determine bonuses or for more strategic thinking. Two interviewees explained the need for a budget as follows:

Annual budget is quite a cripple to the organization but everyone then really needs their own plans and budgets for planning and managing their operational activities. [...] We always had to have a budget that served as a yardstick. (Interviewee 4, a retired CFO from a foodstuffs company).

When budgeting process is done as a separate process, there is more setting of targets and strategic considerations there. [...] It [a rewards system] does not work out with rolling ones. If the next 12 months' numbers changed continuously, then it would not work out. (Interviewee 5, a CFO for an electronics company).

Two of the interviewees indicated that budgets had been abandoned and replaced by annual performance plans or rolling planning. The interviewees reflected on this as follows:

We talk about budgets but [...] officially it is not budget but an annual performance plan. (Interviewee 2, a CFO for an electronics company).

We [...] in a sense, stopped using the term budget over ten years ago. We make quarterly rolling planning for the next one and half years. [...] We in a sense have constantly three different numbers against which operation is followed but none of them is really a budget. That is, we have a forecast for the year, when a new year begins; a target for the year; and a constantly updated forecast for the year. [...] Each business unit can think what is the best procedure for them but this is how we operate at the level of the corporation. (Interviewee 1, a CFO from a chemicals company).

According to one of the interviewees, the idea of abandoning budgeting had already been introduced at the headquarters but not yet been implemented in the business unit:

I think that you would get a bit different answer depending on to which organizational level you pose the question. [...] There has been a clear drive to be in the rolling forecasting and in the beyond budgeting type thinking [at the headquarters] so that we would not lock an annual budget but would update it all the time when needs and priorities change. But it has its own challenges compared to traditional annual budgeting. (Interviewee 3, a CFO from a forest company).

Taken together, the above results suggest that almost all the business units had remained loyal to their budgeting. Budgets had been abandoned in only a few cases.

4.2 Budgeting reforms

RQ2 concerns whether the use of budget types has changed over time and if so, how? Based on the data, most business units (68%) have experienced at least one change in the budget types analysed over time (Table 2). Other nine (32%) business units used the very same budget type(s) both during 2004 and 2016. Based on one sample *t*-test the difference between the two means is statistically significant ($t = 7.550, p < 0.001$). Hence, changes in the use of budget types are not uncommon.

4.2.1 Nature of change. Changes in the use of budgets were also experienced in four of the five business units of the interviewed CFOs. According to them the changes had not been fast or frequent. Some of the changes had already taken place some time ago. An interviewee whose business unit had replaced revised budgets with fixed budgets explained this:

I have worked here for about twenty years [...] all that time [it has been a fixed budget]. (Interviewee 5).

Another interviewee explained their gradual change process as follows:

A few years ago we moved from discussion to action, that is to five quarters' forecasting. [...] At some point, a bottom-up budget offer was received through the forecast. Then, we abandoned the detailed bottom-up budget proposals prepared by local units. This has happened in kind of stages – we have not made a big bang. (Interviewee 2)

Changes	<i>F</i>	Mean	SD	<i>t</i>	<i>p</i>
Yes	19	0.678	0.476	7.550	<0.001
No	9	0.321	–	–	–

Source: Created by author based on SPSS output

Table 2.
Changes in the use of
budget type(s) (2004
vs 2016) ($n = 28$)

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19,6

While some of the business units had changed budgets, others had been faithful to the same budget type from 2004 to 2016 and thereafter. One of the interviewees explained long traditions in the use of budgets as follows:

Listen, they were both systems [a fixed annual budget and forecasts] in use there already when I started working at [the company] so, surely, they have been there already a longer time (Interviewee 4).

100

4.2.2 Changes in budget types. Tables 3–6 show the patterns of change in single, joint and overall use of budget types. Table 3 shows the patterns of change with frequencies (and percentages) of the various budget types used during 2004 and 2016, indicating a very wide range of changes (i.e. as many as 14 different types of changes) in the use of budgets.
Tables 4–6 suggest several changes in how the use of budget types has changed over time. Firstly, as Table 4 shows the number of budget types used in the business units has declined. The average number of budget types used in business units has declined from 1.46 to 1.18 (Pearson chi-square = 3.798, ns). This is due to a decline in the joint use of (two, three or four) budget types. The use of a single budget type increased from 64% to 71%.

Table 3.
Changes in the use of
budget type(s) (2004
vs 2016) (n = 28)

Source: Created by author based on Excel data and SPSS output

Changes	F (%)	2004	2006	F (%)
No	9 (32.1)	Fixed	Fixed	8 (28.6)
		Fixed, revised	Fixed, revised	1 (3.6)
Yes	19 (67.9)	Revised	Fixed	2 (7.1)
		Fixed	Rolling	2 (7.1)
		Fixed, revised	Fixed	2 (7.1)
		Fixed, hybrid	Fixed	2 (7.1)
		Fixed, revised	Fixed, rolling	2 (7.1)
		Fixed	Fixed, rolling	1 (3.6)
		Fixed	Fixed, revised, rolling	1 (3.6)
		Fixed, rolling	Fixed	1 (3.6)
		Fixed, revised, hybrid	Rolling	1 (3.6)
		Fixed, revised, rolling, hybrid	Fixed, rolling	1 (3.6)
		Fixed	None	1 (3.6)
		Rolling	Revised	1 (3.6)
		Revised	None	1 (3.6)
		Hybrid	Rolling	1 (3.6)

Table 4.
Number of budget
types in business
units during 2004
(n = 28) and 2016
(n = 28)

Source: Created by author based on SPSS output

Frequency of budgets by business unit	2004		2016		Pearson chi-square	Sig.
	F	%	F	%		
0			2	7.1	–	–
1	18	64.3	20	71.4	–	–
2	8	28.6	5	17.9	–	–
3	1	3.6	1	3.6	–	–
4	1	3.6	0	0	–	–
Total	28	100.0	28	100.0	3.798	ns

As Table 5 shows, it is the single use of fixed and rolling budgets *per se* that has increased since 2004. The share of business units that stick to fixed annual budget alone increased from 46% to 54%. Instead, the share of business units applying one to three complementary budgets alongside fixed budgets declined from about 36% to 21%. The relative share (almost 18%) of those business units that have abandoned the fixed annual budget remained the same at Time 2. Most of the business units that had abandoned a fixed budget had replaced it with a revised budget ($f = 3$) at Time 1 but with a rolling budget ($f = 4$) at Time 2. Based on Pearson chi-square, these changes are not statistically significant. Overall, the findings indicate that most business units rely on one budget type only and that different budgets are, hence, mostly used as alternatives rather than complementarily. Two interviewees also used on type of budget only but it was supplemented with forecasts of key performance indicators.

Table 6 presents the overall use of different budget types. The overall use of revised budgets declined (from 10 to 3) and the overall use of hybrid budgets declined (from 5 to 0) in a statistically significant way ($p = 0.028$ and $p = 0.026$). In contrast, the use of rolling budgets increased (from 3 to 9) since 2004 ($p = 0.051$). Flexible budgets were not at all used in the business units examined. Fixed annual budgets continue being the most popular.

Table 5.

Use of annual and alternative budgets in 28 business units during 2004 and 2016

Budget types used	2004		2016		Pearson chi-square	Sig.
	<i>F</i>	%	<i>F</i>	%		
A fixed annual budget only	13	46.4 ^a	15	53.6	0.296	0.395 ^a
A fixed annual budget jointly with revised, rolling, flexible and/or hybrid budget(s)	10	35.7	6	21.4	1.400	0.188
A fixed annual budget has been abandoned and replaced with						
– a revised budget	3	10.7	1	3.6	–	–
– a rolling budget	1	3.6	4	14.3	–	–
– a hybrid system	1	3.6	0	–	–	–
– a flexible budget	0	–	0	–	–	–
– no abovementioned steering instruments	0	–	2	7.1	–	–
Total	28	100.0	28	100.0	–	–

Note: ^aOne-sided p

Source: Created by author based on SPSS output

Table 6.

Use of different types of budgets in business units during 2004 ($n = 28$) and 2016 ($n = 28$)

Type of budget	2004		2016		Pearson chi-square	Sig.
	<i>F</i>	%	<i>F</i>	%		
A fixed budget	23	82.1 ^a	21	75.0	0.424	ns
A revised budget	10	35.7	3	10.7	4.909	0.028
A rolling budget	3	10.7	9	32.1	3.818	0.051
A hybrid system	5	17.9	0	0	5.490	0.026
A flexible budget	0	–	0	–	–	–
In total	41	–	33	–	–	–

Note: ^aPercentage of 28 respondents

Source: Created by author based on SPSS output

The vast majority of respondents used fixed annual budgets alone or alongside revised, rolling and/or hybrid budget(s) both at Time 1 (82.1%) and Time 2 (75%).

The use of fixed budgets was also evident in the business units of some interviewees. On one hand, reliance on a fixed budget was explained by the need to plan resources, set targets and link the achievement of targets to rewards:

Yes, it is a fixed budget, because [...] it is about planning of resources to a large extent. That is, what kind of resource are set in motion and when will they arrive [from farms]. [...] So, short forecasts do not help out there at all. (Interviewee 4)

The need to shift from revised to fixed budgets was explained as follows:

Well, the 12 months [fixed] budget was considered simpler; it is connected to setting targets [...] and rewards (Interviewee 5).

On the other hand, the need to shift to rolling budgeting, forecasting or planning was explained by the need to look to the future to ensure more continuous planning and business:

I guess that the biggest reason was certainly to look ahead and to manage the future, to make decisions based on the future, not the history. (Interviewee 3)

We wanted to get the next year in mind already at an earlier stage. [...] We wanted to look longer [to the future] rather than constantly focus on the optimisation of the current year. [...] and from one massive operation somewhere during the year to a more stable planning all the time. And, of course, [...] planning related to, for example, sales and productions was already before conducted with a bit longer horizon. (Interviewee 1)

[With the 18 months' forecast that supplements a fixed budget] we get a longer visibility [...] Sure, the forecast is inaccurate in its' tail but it begins to become more precise. It is also a kind of starting point for budgeting. One begins to generate next year's data via forecasting. And then, at the end of the calendar year, one begins to prepare us a budget on the basis of the forecast. (Interviewee 5)

4.3 Future developments

The third research question was concerned about how may budgeting develop in the future. As Table 7 shows, most participants (19, 68%) did not indicate any plans to change their budgeting in the next two years. The remaining 32% of the participants were found to plan for changes such as adopting rolling budgeting ($f = 4$) or rolling forecasting ($f = 1$), a new forecasting model ($f = 1$), changes in scheduling ($f = 1$), lightening of budgeting process

Table 7.
Intended changes to
budgeting system
over the next two
years (at T2 2016,
 $n = 28$)

Intended changes to budgeting system	<i>F</i>	Mean	SD	%	<i>t</i>	<i>p</i>
Intended changes to budgeting system						
No	19	67.9	—	—	—	—
Yes	9	32.1	0.476	—	3.576	<0.001
Rolling budgeting or forecasting	5	—	—	17.9	—	—
A new forecasting model	1	—	—	3.6	—	—
Scheduling	1	—	—	3.6	—	—
Lightening	1	—	—	3.6	—	—
Better communication and commitment of budgeting process and a link to strategy	1	—	—	3.6	—	—

Source: Created by author based on SPSS output

($f = 1$) or better communication and commitment of budgeting process and a link to strategy ($f = 1$). Additional analysis of data indicated that budget type was not associated with intended changes in budgeting. However, the data suggests that the nine respondents planning changes in budgeting used either fixed budgets ($f = 6$) or both fixed and rolling budgets ($f = 3$) at the time.

All the interviewees indicated relatively high levels of satisfaction with their current budgeting and forecasting systems (at Time 3). Changes were not planned for when the current system better satisfied the needs. The following quotes illustrate this:

We are satisfied with our current [fixed budgeting]. Now and then rolling forecasting comes to mind. [...] Rolling forecasts could be better but there is more work to do them. Our current way of budgeting [a fixed budget with gradually sliding 18 months' forecast] is more cost-effective. (Interviewee 5).

I would say that this [annual performance plan] is substantially better than the one [fixed budget] before. [...] We spend less time locally and get more useful outcomes. (Interviewee 2)

No [other budget types than a fixed budget were not considered]. Of course, various technologies could have enabled rolling (budgets) but they were not planned for at any stage although many things were discussed. (Interviewee 4)

However, one of the interviewees commented on a headquarters' plan to abandon:

There is a clear attempt to abandon budget and [to focus on] future-oriented forecasting that is constantly updated in a dynamic way. (Interviewee 3)

4.4 The perceived success of budgetary processes

The fourth research question concerned whether the experienced success of budgetary processes varies according to time and budget type. Firstly, it was analysed whether the perceived success of budgetary processes has changed over time with the aid of two independent sample t -tests. As the results reported in Table 8 suggest, on average, the experienced success of budgeting weakened but not in a statistically significant way ($t = 1.427$, $p = 0.08$). Participants' perceptions about budgetary processes and information systems being the right tools for managing the business unit showed substantial stability across the 12-year period. In contrast, perceptions of the cost-benefit analysis of both budgetary processes ($t = 1.763$, $p = 0.042$) and budgetary information systems ($t = 1.717$, $p = 0.046$) significantly declined over time. These results provide partial support for changes in the experienced success of budgetary processes over time.

Budgeting success	2004		2016		t	p^a
	Mean	SD	Mean	SD		
Benefits of our budgetary processes outweigh the costs	5.50	1.00	4.89	1.52	1.763	0.042
Benefits of our budgetary information systems outweigh the costs	5.36	1.34	4.64	1.75	1.717	0.046
Our budgetary process is the right tool for managing this business unit	4.39	1.37	4.25	1.40	0.385	0.351
Our budgetary information systems are the right tools for managing this business unit	4.18	1.31	4.00	1.22	0.529	0.299
Success of budgetary processes and systems on average	4.86	1.02	4.45	1.13	1.427	0.080

Note: ^aOne-sided test for equality of means

Source: Created by author based on SPSS output

Table 8.
T-test of success of
budgetary processes
and information
systems during 2004
($n = 28$) and 2016
($n = 28$)

Next, three multiple regression analyses were run to test whether the experienced success of budgetary processes variable varies according to time and budget type (Table 9). Each time, the success of budgetary processes was the dependent variable and the three main budget types (i.e. fixed, revised and rolling budgets) were the independent variables. The results of the first multiple regression analysis suggest that the use of revised and rolling budgets was not related to perceived success of budgetary processes at Time 1. However, the perceived success of budgetary processes at Time 1 was related to the use of fixed budgets in a negative and statistically significant way ($t = -2.426, p = 0.023$). That is, the use of fixed budgets significantly decreased the experienced success of budgetary processes at Time 1. The adjusted R^2 of 0.115 indicates that the use of budget types analysed explains 11.5% of variation in the experienced success of budgetary processes. Hence, the experienced success of budgetary processes was mostly influenced by other variables but partly by the budget types.

Then, the extent to which the use of fixed, revised and rolling budgets predicted the perceived success of budgetary processes within the same business unit later on was investigated. Hence, the second test concerned longitudinal relationships between the experienced success of budgeting at Time 2 as a dependent variable and the use of different budget types at Time 1. It turned out that the use of fixed and rolling budgets at Time 1 did not have predictive power for the experienced success of budgetary processes at Time 2. However, the use of revised budgets at Time 1 marginally predicted the perceived success of budgetary processes at Time 2 ($t = -2.046, p = 0.052$, two-tailed test). That is, a higher use of revised budgets at Time 1 appears to reduce the perceived success of budgetary processes at Time 2. Overall, the adjusted R^2 of 0.063 indicates that the use of budget types analysed explains 6.3% of the variation in the experienced success of budgetary processes.

The third test concerned whether the experienced success of budgetary processes at Time 2 was related to the use of budgets at Time 2. Based on the third multiple regression analysis, the perceived success of budgetary processes at Time 2 is not related to the use of fixed or rolling budgets but it is negatively related to the use of revised budgets ($t = -2.246$,

Table 9.
Summary statistics
from multiple
regression analyses
of the perceived
success of budgetary
processes on the use
of fixed, revised and
rolling budgets at
Times 1 and 2 $Y =$
 $b_0 + b_1A_1 + b_2A_2 +$
 $b_3A_3 + e$

	Success at time 1 ($n = 28$)				Success at time 2 ($n = 28$)			
	β	SE	t	p	β	SE	t	p
<i>Time 1</i>								
Constant	5.983	0.508	11.785	0.001	5.362	0.575	9.324	0.001
Fixed budget	-1.200	0.495	-2.426	0.023	-0.708	0.560	-1.265	0.218
Revised budget	-0.431	0.391	-1.101	0.282	-0.907	0.443	-2.046	0.052
Rolling budget	0.127	0.595	0.214	0.833	-0.087	0.674	-0.129	0.898
R^2 (Adj.)	0.115				0.063			
F -value	2.172				1.608			
p	0.118				0.214			
<i>Time 2</i>								
Constant					5.058	0.491	10.296	0.001
Fixed budget					-0.478	0.493	-0.970	0.342
Revised budget					-1.474	0.656	-2.246	0.034
Rolling budget					-0.295	0.456	-0.647	0.524
R^2 (Adj.)					0.096			
F -value					1.956			
p					0.148			

Source: Created by author based on SPSS output

$p = 0.034$). That is, once again respondents were not satisfied with their revised budgets. The adjusted R^2 of 0.093 indicates that the use of budget types analysed explains 9.3% of variation in the experienced success of budgetary processes. One of the interviewees, whose business unit had moved from the use of revised budgets to fixed budgets, explained the challenges of revised budgeting as follows:

It weakens effectiveness, if one uses a lot of time on [revised] budgeting, when one should rather focus on achieving the budget. (Interviewee 5)

5. Discussion

This exploratory study contributes to previous literature on management accounting and budgeting change by providing empirical evidence of changes in the use of budgets over time and whether experienced success of budgeting processes varied with time and budget type. Two alternative solutions to the shortcomings of annual budgeting have been suggested in literature (Hansen *et al.*, 2003): either improve annual budgeting by reforming it with, for example, more frequent budget revision, or abandon annual budgeting altogether and adopt alternative steering mechanisms such as rolling forecasts and balanced scorecards. The first research question concerned whether budgets have been abandoned. The idea of abandoning budgets has received an increasing amount of attention, especially in the Nordic countries where companies have been found to move to beyond budgeting (Becker, 2014; Bjørnenak, 2013; Bogsnes, 2013; Bourmistrov and Kaarbøe, 2013; Henttu-Aho and Järvinen, 2013; Johanson, 2013; Kaarbøe *et al.*, 2013; Sandalgaard and Bukh, 2014; Valucas, 2019; Østergren and Stensaker, 2011). However, based on the findings of this study, almost all business units had remained loyal to budgeting. Two business units were found to have abandoned budgeting.

The second research question concerned whether the use of budget types has changed over time and if so how. Survey results by Ekholm and Wallin (2000), Libby and Lindsay (2010) and Popesko *et al.* (2015) have predicted moderate, if not high, readiness among respondents for developing the annual budget and including new instruments. The results of this study revealed that although changes in budgeting took a long time (see also Granlund, 2001) rather than being fast and frequent, changes in the use of budget types were not uncommon and varied considerably. Notably, most (68%) of the 28 business units analysed experienced at least one change in the budget types analysed over time. Regarding the patterns of change, a very wide range of changes (as many as 14 different types) were found in the use of budgets. For instance, changes occurred by switching from revised to fixed budgets, or from fixed and revised to fixed and rolling budgets.

Overall, the results suggest the following changes: Firstly, the joint use of budgets showed a declining trend and the single use of budget types an increasing trend. Although these changes did not reach statistical significance, the relatively low and declining number of budgets used indicates that different budgets were increasingly used as alternatives and substitutes rather than as complements (cf. Ekholm and Wallin, 2011; Sivabalan *et al.*, 2009).

Secondly, the overall use of revised and hybrid budgets declined in a statistically significant way over time, but the overall use of rolling budgets increased. The decline in the use of revised budgets suggests that there have been challenges in the use of revised budgets alone or jointly with other budgets. The decline in the use of hybrid budgets suggests that systems such as balanced scorecards are not incorporated into budget information as much as before (cf. Ekholm and Wallin, 2000), are used independently from budgets, and/or are less frequently used as before (cf. Laitinen, 2001). According to critics, rolling budgets and forecasts have been seen as the main alternative to the fixed annual budget (Arterian, 1998; Hope and Fraser, 1999). Rolling budgets are typically adopted as a smaller change to tweak the budgeting process

slightly by updating plans more frequently (Hansen *et al.*, 2003, p. 110). Flexible budgets were not at all used in the business units examined.

Finally, despite a decline in the joint use of fixed budgets, fixed annual budgets continued going strong – the vast majority (75%–82%) of respondents used fixed annual budgets alone or alongside revised, rolling and/or hybrid budget(s) at both times. According to the interviewees, a fixed budget is still needed, for instance, to plan resources, set targets and link the achievement of targets to rewards (see also Popesko *et al.*, 2015). Previous surveys have also found that the majority of firms continue to use annual budgets (Bjørnenak, 2013; Ekholm and Wallin, 2000; Libby and Lindsay, 2010; Popesko *et al.*, 2015). Taken together, the above results on most, but not all, business units experiencing at least one change in the budget types analysed, support previous results on there being variation in the use of annual and alternative budget types (Ekholm and Wallin, 2000) and in the extent of management accounting change across companies (Laitinen, 2001).

The third research question was concerned about how budgeting might develop in the future. According to the 2016 survey results, most business units (68%) did not plan to change their budgeting. At the same time, nearly one-third of the business units had some plans to change – such as introducing rolling budgets and forecasts – during the next two years. Interest in the adoption and use of rolling budgets and forecasts has also been found in previous studies by Ekholm and Wallin (2000), Sivabalan *et al.* (2009), Libby and Lindsay (2010) and Bhimani *et al.* (2018). According to the interview data from 2023, there was only one case of planned changes, which was to abandon budgeting.

The fourth research question concerned whether the experienced success of budgetary processes varies according to time and budget type. On average, the experienced success of budgetary processes somewhat weakened over time but not in a statistically significant way and was still relatively high. Notably, participants' perceptions about budgetary processes and information systems being the right tools for managing the business unit showed substantial stability over time. However, their perceptions of the benefits of budgetary processes and information systems outweighing their costs significantly declined during the 12-year period. It may have been due to decreasing benefits, increasing costs and/or increasing expectations over time. These results provide partial support for the experienced success of budgetary processes varying according to time.

Although the use of rolling budgets did not predict the perceived success of budgetary processes, the use of fixed and revised budgets turned out to be significant. Initially, the perceived success of budgetary processes was weakened by the use of fixed budgets. Later on, the perceived success of budgetary processes was predicted by both earlier and present use of revised budgets suggesting challenges in the successful use of revised budgets. These are important findings, as there has been scant research on revised budgets and no longitudinal research on this topic so far.

While cross-sectional data do not reveal the causes and effects of the perceived success of budgetary processes, the longitudinal data of this study was able to throw more light on the patterns of change and on causal relationships (i.e. to establish the direction and magnitude of causal relationships, Kinnunen *et al.*, 2000, p. 445; Menard, 2002, p. 3). Thus, this study broadens our knowledge of the effects related to the perceived success of budgetary processes.

6. Conclusions and future research topics

The main findings of the study suggest that almost all business units have been faithful to budgeting but changes in the use of budget types are not uncommon and vary considerably. Overall, the use of fixed budgets strongly continued, the use of revised and hybrid budgets declined and the use of rolling budgets increased over time. The joint use of budgets declined over time. The perceived success of budgetary processes was, initially, weakened

by the use of fixed budgets and, later, by the use of revised budgets. The interview data further illustrates some of the patterns of, and reasons behind, the changes.

A practical implication of this study is that whether budgeting is changed or not, it is important to pay attention to the ways in which individuals and organizations can be helped to cope with budgeting processes and systems in ways that result in as few disadvantages for them as possible. In this case, management as well as superiors are in a key position.

This study has limitations that should be considered when drawing conclusions from the results. Firstly, the data collected were largely self-reported, and hence some of the observed relationships may be exaggerated due to common method bias (Kinnunen *et al.*, 2000, p. 457). Available information from other sources than respondents themselves is difficult to get but would be useful. Secondly, it must be kept in mind that these findings should not be generalized. The study was targeted at senior managers of business units in large manufacturing organizations. Although these organizations differed from each other, the sample is not representative with regards to Finnish firms in general. In addition, the final sample was CFO-dominated. Thirdly, given that changes in organizational steering mechanisms can take a long time (Anderson, 1995; Shields, 1995), a 12-year period was analysed. However, it is possible that not all changes in the use of budgets have been detected. For example, some changes may have been more rapid (Laitinen, 2003) or slower. Finally, because the study was explorative, it was not intended to provide conclusive evidence from which to determine a particular course of action (Zikmund *et al.*, 2013, p. 52). Instead, the intention was to ask open questions to discover what is happening, assess things in a new light and gain insights and improve understanding (Saunders *et al.*, 2019, pp. 186–187, 803).

Further research is needed to understand why budgets are used as alternatives or as complements in so many different ways, and why are there so many changes in the use of budget types. What are the roles of managers, CFOs and consultants (Leiby, 2018)? Furthermore, how do managers respond to, and manage, tensions related to combinations of management control elements (van der Kolk *et al.*, 2020) such as budget types? Do they use budgets mainly as alternatives to reduce tensions related to combinations of management control elements? What other reasons are there for budgeting change? Do developments in information technology systems, macroeconomic factors (Popesko *et al.*, 2015), etc. affect budgeting changes? Could the perceived success of budgeting be mediated, e.g. by participatory budgeting or the functions of budgeting (Wagner *et al.*, 2021)? These questions could be examined with various theoretical approaches and additional data. Both larger surveys with more refined measurement instruments and in-depth case studies are needed to help to understand budgeting changes from more complete and deeper perspectives.

Notes

1. The latter sample was smaller because organizational changes, mergers, bankruptcies, etc. had reduced the number of companies and business units.
2. Fifty-nine (77.6%) of the responses resulted from mail surveys and 17 (22.4%) from e-surveys at that time.
3. In matching responses, it was assumed that the respondents had answered the questionnaires by themselves.

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Further reading

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Appendix. Survey questions used in this study translated into English

Types of budgets at your business unit (please circle all the right answers):

- a fixed budget that is fixed for the period once set;
- a budget that is revised during the period (i.e. a revised budget);
- a rolling budget that incrementally extends the period;
- a budget that recalculates budgeted profit using standards costs and revenues but at actual levels of activity (i.e., a flexible budget); and/or
- a hybrid system (integrates budget information and other information, e.g. from balanced scorecards).

Do you intend to make any changes to your budgeting system over the next two years (no/yes) and if yes, what?

Success of budgetary processes and information systems (1 = Completely disagree, 7 = Fully agree):

- Overall, the benefits of our budgetary processes outweigh the costs.
- Overall, the benefits of the information systems that we use in our budgeting process outweigh the costs.
- I am convinced that our budgetary process is the right tool for managing this business unit.
- I am convinced that the information systems used in our budgetary process are the right tools for managing this business unit.

How much (in millions of euros) was the turnover of your business unit at the end of the last fiscal year?

How many employees did your business unit have at the end of the last fiscal year?

Interview questions used in the study translated into English

Which types of budgets are currently used in your business unit? A fixed, revised, rolling, flexible and/or hybrid budget?

Which types of budgets were previously used in your business unit?

Why have you used the same budget type or why have you changed budget types?

Do you intend to make any changes to your budgeting system over the next years?

How satisfied are you with your budgetary processes?

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