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Budgeting Characteristics and Their Potential Outcomes

A Quantitative Study of Large Norwegian Companies

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This thesis is worth 30 study points

Acknowledgment

This paper was written as a part of a conclusion to the master program in Business & Administration at the University of South-Eastern Norway, with a specialisation towards management accounting.

Management accounting in a broader sense and especially management control systems as a topic has fascinated me throughout my education. Thus, it was a natural choice of focus for my Master Thesis. It has been a long and at times tedious project, however very interesting and educational. It was particularly exciting to collect data from some of the larger companies in Norway, and I was glad to see so many contribute by answering my survey.

I would like to thank all the respondents who took the time to answer my survey. I would also like to thank my thesis supervisor, Tor Tangenes, for his guidance and suggestions. Thank you to Maja, Rolf & Ann for all their help as well.

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Abstract

The annual budget has a long tradition as a management system. Budgeting literature states that despite fairly harsh and extensive criticism the budget is still emphasised in most organisations. I have examined how budgeting characteristics, mainly budgeting format and budgeting roles, have potential effect on budgeting outcomes through a quantitative approach One of the main assumptions made are that those who have advanced from traditional budgeting practices (Radical Budgeters) would experience positive outcomes, as they are "fixing" the budgeting issues. Through a survey I find that most Large Norwegian Companies, still apply relatively conservative budgeting practice, few apply more flexible budgeting, and a small proportion have abandoned the budget altogether. This is consistent with similar investigations performed the past 20 years. When relating the budget formats to outcomes, Radical practices was found to be associated with lower performance and higher budget satisfaction, while Conservative practices was found to associate with higher performance and lower budget satisfaction. The results appear to be contradictory to the assumption, however I argue that Radical practices could potentially add more value (higher satisfaction) to those who are successful with implementation, although this does not translate to higher performance. Budgeting systems are not assumed to predict much of the performance measure, as there could be a range of other factors affecting this aspect. The performance measure used is a subjective report of financial measures and should be taken into consideration. A main caveat to my research is the degree of conceptual overlap. Differences within practice, and a gap between this and budgeting literature, makes the terminology ambiguous and difficult to navigate. Thus, the finding of most significance is perhaps that of a disparity between Conservative/Radical practice. Although I cannot say anything about causation of performance outcomes, the significant associations found gives a strong indication for the validity of this classifications and their distinct patterns.

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1.0 Introduction

1.1 The Budget

Many management control systems have sprung out of the need to control increasingly complicated businesses, and there is perhaps no such system as prominent as budgeting (Otley, 1999). Its popularity has made it an everyday term, as one might budget in one´s own personal economy, and the governments often apply budgeting as an appropriate method of allocating resources throughout the society. This is only to illustrate the popularity of the concept. In regard to this paper corporate budgeting is the focus, with its underpinning of financial and operational budgeting. The budget has also been immensely popular for businesses, as research show that most companies rely on some form of budgeting (Ekholm & Wallin, 2000; Johanson & Madsen, 2013; Libby & Lindsay, 2010).

One of the most interesting aspect of budgeting is, perhaps, how it has been heavily criticised over the years and still reports widespread use and is viewed as an important control system in almost all organisations (Hansen & Van der Stede, 2004). The underlying concept of using aggregated financial measures have been questioned (Johnson & Kaplan, 1987). Issues of relevance have come up with linking budgeting to motivational or incentive systems (Merchant & Manzoni, 1989; Jensen, 2001). As a result of extensive criticism some have opted to get rid of the budget altogether (Hope & Fraser, 1997; Wallander, 1999; Bogsnes, 2016). Thus, it is an interesting disparity that budgets still have widespread use despite its exhaustive disapproval.

1.2 Research question

As a part of a preliminary project towards my master thesis, an extensive literature review on the budgeting literature was performed (Appendix A). With this review in mind, I developed the following research question:

> **"What are the current budgeting practices in Large Norwegian Companies? And how do budgeting characteristics affect budgeting outcomes?"**

To best answer this research question, I have presented relevant theory from the vast budgeting literature, subsequently deducted hypothesis based on the literature review. Further,

I have described a quantitative approach to gather data and best answer my research question. The data is analysed and discussed before reaching a final conclusion.

2.0 Theory

The theory section introduces the budgeting concept and the traditional budget as a management system. This form of budgeting has been heavily criticised throughout the last 30 years, resulting in different methods of countering their supposed faults. Mainly, more flexible budgets, in which attempts to improve budgets and the beyond budgeting movement who believe the budget is beyond repair and the only option is to scrap budgeting altogether. The budgeting criticism is in large based on the "relevance lost" debate (Johnson & Kaplan, 1987), whereas traditional accounting/financial figures are criticised for lacking relevance and links to value creation. The newer "more relevant" tools are neither without its critics, which will be discussed and linked to the beyond budgeting movement. Following this the roles of budgeting will be discussed. There is a vast array of roles to assert budgeting, and just as many potential role conflicts. These role conflicts are often the source of budgeting criticism. Finally, I deduct a model and a set of hypotheses from the literature to examine my research question. The theory section of this project is largely based on my preliminary work with the master thesis (Berge, 2020), with some small adjustments.

2.1. The Budget

The budget has historically been important and is still important for day-to-day operations of many firms (Hansen et al., 2003; Otley, 1999, p. 370). Although it has been criticised over the years, for many different reasons, the budget still seems to be used in some capacity in most firms (Ekholm & Wallin, 2000; Johanson & Madsen, 2013; Libby & Lindsay, 2010). These studies show that about 80-90% of participants still use budgets and have no plans of abandoning it. It is however important to note that this includes any form of perceived budgeting. Some use budgets in the traditional sense, and other use budgets in a more flexible or other non-traditional ways. There are the three ways of perceiving budgets that I will consider in this paper; 1) The traditional budget, 2) The improvement or adaptation of budgeting and 3) abandonment of the budget. 2 and 3 are generally viewed as counterparts to traditional budgeting and has grown out of criticism of the concept (Hansen, Otley, David and

Van der Stede, 2003, p. 95). I will begin to dissect the traditional budget, and the roles usually associated with this. Then I will look at criticism of budgets, and the counterparts that grew out of this criticism.

2.2. Defining the traditional budget

Horngren, Datar & Rajan (2015, p. 220) define the budget as "(a) the quantitative expression of a proposed plan of action by management for a specific period of time and (b) an aid to coordinate what needs to be done to implement the plan". Although Horngren et al., (2015) does not necessarily depict the most traditional view of the budget in their book, their definition of the budget certainly captures the traditional purposes of the budget. This definition says something about budgeting being goal-oriented, a future fixed goal that is meant to drive performance. Gjønnes & Tangenes (2012) found in their review of major management accounting textbooks that all six books reviewed saw the budget as having a goal-oriented role. Traditional budgets typically also have an evaluation component, the goal is tested against performance, and evaluation of results are used to refine plans and coordinate future plans. This view of purposes of the traditional budget is also shared by Gjønnes & Tangenes (2016.), where they describe "traditional" budgets as generally having a purpose of testing and comparing actual performance against planned performance. Thus, the traditional budgeting process is defined as having a goal-orientation, with a role of using information about fulfilment of these goals to pave the path ahead. On the format of a traditional budget there are three general characteristics. A budget puts operational plans into financial terms, usually for a fixed period of time, and it is negotiated and approved before said period (Horgren et al., 2015; Gjønnes & Tangenes, 2016). I will expand on these three characteristics.

2.2.1 Plans put into financial terms

Budgets are heavily influenced by the format of financial statements (Gjønnes & Tangenes, 2016, p. 186-187). They highlight three facets where budgets are shaped by financial information: comparability, simplicity, and objectivity. The actual data that is used is often accounting figures like earnings before interest, tax and amortisations (EBITA), revenue, cash flows etc. This is firstly to enhance comparability between goals and measurements. Goals in traditional budgeting will often be linked to accounting figures. An example of a typical budgeting target will be stated: revenue to grow 5% next year. This will be easy to measure at the end of the term, as information will be collected regardless, and it is easily compared to

prior results. It is hard to argue the simplicity of using a measure in which data is already being collected. Another advantage of the financial information is that it has a high degree of objectivity. The data is collected on the basis of a set of accounting regulations, and there are fewer questions to its objectivity, than if you were to make up measures yourself. These are factors in which makes budget influenced by accounting figures and financial statements. In sum there are some positive aspects of using accounting/financial figures, however there are also some perceived issues. E.g., their aggregated nature and relevance, these will be further reviewed in looking at some of the criticisms of traditional budgeting.

2.2.2 Budgetary Horizon

Budgets can have different timeframes, all the way from shorter periods to periods ranging multiple years. However, with the traditional budget the one-year period is often used, which could be divided into subperiods of for example quarters or months (Horngren et al., 2015; Gjønnes & Tangenes, 2016). The traditional annual budget period could be an effect of the its close relationship with financial statements, as the budgetary period is often set as the period for the fiscal year. This period is typically a normal calendar year.

2.2.3 Negotiated Budgets

There are many different approaches for how to decide upon budget decisions. How do we decide how much resources should be allocated to certain areas during a budgetary period? Horngren et al. (2015) depicts a general picture of the budgetary process; *firstly,* managers at all levels review past performance, future expected changes, market feedback etc. and use this information to set targets for the next period. *Secondly,* the targets will be reviewed (approved/rejected/improved) by upper-management and in turn be handed down again as the final targets for the coming period, for in which the actual results will be compared to. *Thirdly,* the results will in subperiods be reviewed to discover any deviations from the targets and find solutions for this. The negotiating part of the first two points are what many thinks of when they imagine traditional budgeting. The idea of the process is to include both a view from those close to operations as well as the upper-managements opinions to finalise realistic targets for the coming period.

2.2.4 Summary traditional budgets

Traditional budgets have a rather rigid format, and they are heavily influenced by financial accounting and the financial statements. The goals are set in a top-down manner, even if there

is negotiating, management will have the final say for budget targets in the following period. Planning, target-setting, and evaluation appear to be important goals for traditional budgeting. This form of budgeting has been heavily criticised over the years, as will be displayed in the following segments.

2.3 Overview of traditional budget criticisms and alternative practices

In this segment follows an overview of budgeting criticism. Much of budget criticism are rooted in "The relevance lost" debate, which is displayed bellowed. Thereafter, I present some of the most common criticism cited in the budgeting literature. From this an array of different approaches has sprung out as potential "fixes". As alluded to I mainly distinguish between those who want to improve the budget, and those who want to discard the budget. Finally, I compare these and other management control systems, as well as discussing what potential criticism "newer" tools can contract as well.

2.3.1. Relevance lost

The criticisms of the traditional budget are in many ways rooted in the "relevance lost" debate (Sending & Tangenes, 2019, p. 486). The relevance lost debate was introduced by Johnsen & Kaplan, whereas they argue that financial information is "too late", "too aggregated", and "too distorted" to be of relevance for managers (Johnson & Kaplan, 1987, p. 1). The general conception is that financial figures derived from accounting principles are underpinned lots of different variables which can be hard to decipher when viewed in final reports. It is also view as to late when the figure is reported, as at that point of time nothing can be done to influence it. Kaplan and Norton (1992) later on introduced the Balanced Scorecard (BSC), whereas key performance indicator (KPI) where to be identified. They introduced "leading" KPI´s as non-financial measures which could be influenced a priori, to affect the "lagging" KPI´s otherwise known as the more rigid and aggregated, financial measures (Kaplan & Norton, 1996). The early movers in the relevance lost debate, did however not acknowledge the budget as the problem within itself, rather tried to integrate the budget within their new management tools like the BSC and ABC-Costing (Bjørnenak, 2010). The debate, although not inherently about budgeting, was however a forerunner for the criticism to come (Sending & Tangenes, 2019, p. 486).

2.3.2. Criticisms of the traditional budget

There is no doubt that the budget has been severely criticised throughout the last three decades (Bogsnes, 2016; Hansen et al., 2003; Hope & Fraser 1997, 2003a, 2003b; Libby & Lindsay, 2010; Marcino 2000; Wallander 1999). Some of the criticisms has been fairly harsh like the classic citations from former CEO of General Electric, Jack Welch, calling the budget "the bane of corporate America" (Loeb, 1995) or Jan Wallander, former CEO of Svenska Handelsbanken, referring to the budget as "an unnecessary evil" (1999). Despite all of the criticism, research on the matter has shown that budgets in some form or another has stood the test of time (Ekholm & Wallin, 2000; Libby and Lindsay, 2010) and most businesses have no intention of abandoning the budgeting concept whatsoever. However, they both find that most companies have implemented or want to implement "improved" budgeting practices. Johanson & Madsen (2013) find similar results with mist of their business examined opt for "flexible" budgeting solutions. Hansen et al. (2003, p. 95) separate the budgeting criticism into those who want to *Improve* and those who want to *Abandon* the budget. Neely, Bourne and Adams (2003) use a similar classification, separating between practices to better the budget and the movement for going beyond the budget. I will use Hansen et al. (2003) notation of improvement/abandonment. Differentiating those who believe more flexible, adaptive budgets are a valid solution, and those who do not see the budget as a salvageable project.

I will link the *Improvement* criticism to the relevance lost debate initiated by Johnson & Kaplan (1987), with its criticism aimed at rigid financial information and its weak link to value-creation. The *abandonment* criticism is predominantly fronted by the beyond budgeting with central figures: Hope and Fraser and the Beyond Budgeting Round table (BBRT), and practitioners like Jan Wallander, and Bjarte Bogsnes. It should also be mentioned that the two camps of budgeting criticisms are not exclusive of each other, as they both contain many of the same elements and in many ways could be said to be perusing the same goal. Budget abandonment is also rooted in the "relevance lost debate", however they did not see the budget as repairable (Bjørnenak, 2010). Thus, taking the criticism one step further. I will begin with listing some of the more commonly cited weaknesses and criticism against traditional budgeting. Secondly, I will link them to the improvement/abandonment movements and explain how they intend to solve these issues.

2.3.3 Budgeting weaknesses

Neely et al. (2003, p. 23) preliminary results led them to identifying twelve weaknesses in practice with budgets. These are again divided into three subcategories; weaknesses related to competitive strategy, business process and organisational capability. These three categories can serve to sum up most of the criticism against the traditional budgeting process (Neely et al., 2003, p. 23);

1. Weaknesses linked to *Competitive Strategy,* Budgets:
   - are rarely strategically focused and are often contradictory
   - concentrate of cost reduction and not value creation
   - constrain responsiveness and flexibility, and are often a barrier to change
   - add little value – tend to be bureaucratic and discourage creative thinking

2. Weaknesses linked to *Business Pro*cess, Budgets:
   - are time consuming and costly to put together
   - are developed and updated to infrequently – often annual
   - are based on unsupported assumption and guesswork
   - encourage gaming and perverse (dysfunctional) behaviour

3. Weaknesses linked to *Organisational Capability,* Budgets:
   - strengthen vertical command and control
   - do not reflect the emerging network structures that organisations are adopting
   - reinforce departmental barrier rather than encourage knowledge sharing
   - make people feel undervalued

Challenges relating to *competitive strategy* issues of budgets being too rigid to react to external events and not being linked to actual value-creation are prominent (Hansen et al., 2003, p. 97; Hope & Fraser, 2003b, p. 113). These are classical relevance problems whereas what is being measured and evaluated against, might not be pertinent for actual value creation. This also relates to the issue of the budget being contradictory to the strategy of the organisation. How can you execute a strategy of growth or innovation, when the budget is focused on minimizing expenses? (Dunk, 2011). Rigidity of budgeting targets and goals are also seen as threats to the businesses ability to react (Libby & Lindsay, 2010, p. 63) Ekholm

& Wallin (2000, p. 533) amidst other concerns, concern two issues that can be related the this point the budgets rigidity and it´s lack of signalling change in the environment.

The key budgeting issues relating to *business process* is how time consuming it can be (Schmidt, 1992, p. 103), and that it encourages "gaming" behaviour (Libby & Lindsay, 2003, p. 32). This is behaviour where the fixed targets (especially when linked to incentives) allures employees to behave unethically to reach them, or negotiating targets with a self-interest, rather than an interest for the company or other important shareholders. Merchant & Manzoni (1989) found that managers who could influence targets, often set them increase their credibly, give themselves more flexibility as well as to trigger/enhance bonuses. This also includes problems where targets are set too easy or too difficult to reach, which respectively could lead to under-performance or demotivation (Merchant & Van der Stede, 2017, p. 304-310). This is also referred to as padding the budget or introducing budgetary slack, underestimating targets purposively to easily exceed budget amounts (Bhimani, Horngren, Datar & Foster, 2008, p. 477). Under this perspective we also find some relevance issues like the annual and infrequent uphold of the budget. Another issue are infrequent updates, a concern that annual budgeting is not frequent enough to capture the businesses situation (Otley, 1999). Many of these concerns are interrelated, as well as being interrelated to the issues pertaining to competitive strategy and organisational capability.

In the criticisms related to organisational capability we find comments about budgeting being "command-and-control" oriented (Bogsnes, 2016, p. 1-54; Hope & Fraser, 2003b). They argue that budgets are formed on an upper-management level and then used to control employees, while they believe that those closer to the value-creation should have a bigger influence on decisions. Bunce, Fraser & Woodcock (1995) describe traditional budgets as being hierarchical, top-down planning of financial performance, not fit for modern organisations. Neely et al. (2003), concern that budgets do not encourage cooperation across departments and is not tailored for newer organisational forms that are less hierarchical.

These three categories of criticism are not entirely heterogenous, as the budgeting issues brought up often touch upon more than one category. Issues of gaming behaviour, for example, could pertain to organisational capabilities, and inevitably lead to relevance issues as the gamified targets are not optimal. However, these three categories serve as a strong

framework enlightening some of the key affects that budgeting issues may have on an organisation.

2.3.4 Improving traditional Budgets

As mentioned, the idea of improving or "fixing" is to some degree rooted in the relevance lost debate in the late 1980s. This was first and foremost criticism of the use of financial figures in evaluating performance. Johnson and Kaplan (1987) argued that information from the financial statements lagged behind and were not adequate in evaluating what is driving performance. This debate led to many different tools and management approaches we know today e.g., activity-based costing (Cooper & Kaplan, 1991) and the balanced scorecard (Kaplan & Norton, 1992) and a more widespread utilisation of non-financial performance measures. Non-financial measures were introduced to combat the relevance problems, the idea being that non-financial measures could be a better proxy for displaying actual value-creation. Use of these measures follow a simple logic; the financial statement can show how you performed in term of earnings, although one does not necessarily know how exactly where the money came from. The non-financial measures are supposed to show the drivers of value creation (Kaplan & Norton, 1992).

Research has shown that most organizations perceive that they are using an improved version of the budget or are going to implement budget improvements in the near future (Ekholm & Wallin, 2000, p. 527; Johanson & Madsen, 2013; Libby & Lindsay, 2010, p. 60). To "improve" budgeting practices will of course to a large extent be up to perception, as there are no clear boundaries for what is considered improvement from traditional budgeting. Libby & Lindsay (2010, p. 60) asked the group that wanted to improve their budgeting systems about what issues they had, and what improvements they would like to implement. Their findings on budgeting issues are consistent with the issues from Neely et al. (2003) framework presents above. The most common improvements suggested were adopting a more bottom-up oriented process, use rolling forecasts, better align strategic planning to budgets, and implement less detailed budgets (Libby & Lindsay, 2010, p. 60). Ekholm & Wallin (2000, p. 533) identified critical issues as the budget being too rigid, and not able to signal change in the environment. Issues identified in budgeting practice, span all three of Neely et al. (2003) budgetary weaknesses subdivisions. The main difference between the *improvement* and the *abandonment* criticism is that the improvement group solves the problem by attempting to

making the budget relevant, while the abandonment group does not think the budget is able to be relevant however much you improve it.

There are many different approaches for improving budgets and dealing with the common budgeting issues. One of them are activity-based budgeting, which attempts to solve relevance problems by generating the budget form an activity-based perspective (Hansen et al., 2003, p. 98). In this budget targets rely more on underlying operational measures (non-financial measures) to have a stronger link between operations, budget and strategy. Another approach is zero-based budgeting (Pyhrr, 2012), the idea is to begin with a clean sheet each year. In this approach you do not use historical performance from previous periods to make predictions for the next periods. Neely er al. (2003, p. 24) also list value-based management, profit planning and rolling budgets/forecasts as possible solutions to improve on budgeting issues. They argue that rolling budgets is perhaps the method that has gotten the most traction and has the most potential. Budgets and forecasts are sometimes equalled in the literature as forecasting could be a role of a budget (Gjønnes & Tangenes, 2012). They do however argue for certain potential role-conflict, whereas the budgets and forecasts cannot be equalled. This will be examined in more detail in the budgeting role segment. These budgets are used to fight the rigidity of the annual budget, by updating and revising the budget more often (Sivabalan, Booth, Malmi & Brown, 2009, p. 855-856). By budgeting continuously, the businesses seek to avoid the inherently restrictive nature of the annual budget (Frow, Marginson, & Ogden, 2010). Rolling budgets are considered to be a beneficial tool for turbulent business environment (Bhimani, Sivabalan & Sonawalla, 2018). Many of the concepts, and logic behind budgeting improvements in this section are also conveyable, and the basis of certain aspects of beyond budgeting.

2.3.5 *Beyond budgeting, abandonment of the budget*

Some believe that the budgeting issues are beyond repair and that the only solution is to abandon the concept altogether. The concept of abandoning the budget is not new and it is mainly practitioner-driven. CEOs like Jan Wallander (1999) and Jack Welch (Loeb, 1995) have gone far in the criticism of the budgeting concept. The term “beyond budgeting” was coined by the founders of the BBRT, Jermy hope and Robin Fraser, and they are major contributors to the literature on the matter (e.g.,1997; 2003a; 2003b). Bjarte Bogsnes (2016) has also been a significant contributor to the beyond budgeting movement, with his success story in implementing the beyond budgeting mindset in Equinor (formerly Statoil). The move

towards abandoning the budget has been seen as a mostly European movement (Hansen et al., 2003, p. 98), and Scandinavian countries have been looked at as forerunners (Neely et al., 2003, p. 23). However, research from the two last decades show that very few have adopted or are thinking about adopting the beyond budgeting approach (Ekholm & Wallin, 2000, p. 527; Johanson & Madsen, 2013; Libby & Lindsay, 2010, p. 60). Both in North America and Scandinavia the adoption rates appear to be marginal.

The beyond budgeting (BB) philosophy deals with the budgetary relevance issues by dispensing with the budget altogether as it is flawed in their view (Libby & Lindsay, 2010, p. 57). One of the main issues are using fixed performance contracts for motivational purposes. Proprietors of beyond budgeting want to move from fixed performance contracts to relative performance contracts (Hope & Fraser, 2003b, p. 111). The argument being that relative contracts are not negotiated and set in advance, thus they are not as rigid in a changing environment. Hope & Fraser also believe that too much time is spent in preparing the budget and argue that this time could and should be used differently. By planning a year ahead, the focus lies on compliance, while continuous planning can promote a value creation mindset. Bogsnes (2018, p. 5), argues that fixed targets will be prone to major subjective assumptions. With fixed annual targets you will have to do some guesswork on factors like market, competitors, exchange rates, government policies etc. So even if you hit the target, the target may not be relevant anymore. BB is also about moving from hierarchical to flatter organisational forms, not only to decentralize decision-making but also because they believe in autonomy and that employees are motivated by the option to shape their own work (Bogsnes, 2016, p. 55-65). They base this on Theory X & Theory Y (McGregor, 1960), where you can either believe that people are generally lazy and have to be controlled to perform, or that people perform their best when they are able to control their own work and achieve satisfaction with their work. This is also related to motivation and incentive systems. In the beyond budgeting philosophy, they do not have faith in external rewards as they promote extrinsic motivation and diminish internal motivation. They believe the internal motivation is vital for performance (Bogsnes, 2016, p. 34-44). Hope and Fraser (2003b, p. 111) believe that fixed targets motivate through fear of not meeting targets, although it can be an effective tool, this form of compliance also has its downsides. Consequently, they believe relative targets will motivate through autonomy, and people will be more inclined to take chances, thus promote innovation, rather than diminishing it. The use of continuous forecasting is seen as going hand in hand with BB philosophy (Morlidge & Player, 2010, p. 255). As seen from this

brief review of BB philosophy, it is mostly about moving from rigid fixed performance measurement to a more flexible philosophy which is equipped to deal with changing environments, both organisationally and operationally.

There are not too many studies examining implementation or potential outcomes of BB (Nguyen, Weigel & Hiebl, 2018). Two case studies examining implementation both conclude many benefits of a BB approach, however they also identify that the implementation process can be difficult (Sandalgaard & Bukh, 2014; Østergren & Stensaker, 2009). Nguyen et al. (2018) conclude in their review of BB literature that one of the reasons for low adoption are high costs and uncertainty of both of implementation and potential effect. The difficulty of transformations can be attributed somewhat to unclear delineations of BB. Whilst the proprietor of BB has created a list of 12 principles (BBRT, 2016), it is a relatively loose definition. Bogsnes (2016, p. 229-230) allude to BB as not being a management recipe, more a philosophy, and consequently more fluid and less straightforward to implement.

2.3.6 *Improvement vs abandonment vs traditional budgeting*

The review of improvement vs abandonment of the traditional budget showcases the apparent similarities between the two. They have fairly similar issues with for example the rigidity, relevance, and command and control nature of the annual negotiated budget. They also share some of the same approaches to reduce these issues, e.g., rolling forecasts. So, the question can be asked; if you "improve" the budget enough, is it really all that different from beyond budgeting? Gjønnes & Tangenes (2016, p. 238) argue that this depends on the role and purpose of the budget. If the budget only has roles that are in thread with the beyond budgeting philosophy, there is not much to left to criticise. The example they give is: if the budget is only meant to test the financial implications of an operational plan, (i.e., a forecast), it can´t be criticised by the beyond budgeting guidelines. It is no longer used for planning, the results will not be used for evaluating performance, it is not meant to motivate towards a goal, etc. The purpose question is important to ask before criticising a budget, or else one might criticise aspects that the budget is not meant to fulfil. Gjønnes & Tangenes (2016, p. 243) also allude to criticising a budget with attached roles they are not meant to fulfil are easy targets. This is an important aspect, as a budget is not necessarily meant to fulfil all traditional roles and cannot be criticised for role conflict that do not exist. The role or purpose of budgets can be a wide range, however if they are to avoid all issues from budget criticism or role conflict, there are fewer choices left. This next section will illustrate the variety of budgeting roles. As

perhaps the main difference from BB and other budgeting approaches, is the adoption of a philosophy, rather than a particular management system (Bogsnes, 2016, p. 72).

2.3.7. Criticism of BSC and its relationship with BB philosophy

Although prescribes as a general repair for issues of relevance, the use of non-financial measures, and managements systems like BSC has also been criticised. There are two main strings of criticism towards BSC 1) Arbitrary use of non-financial performance measures (Ittner & Larcker, 2003) 2) The concept being of a rhetorical nature, rather than based on cause-effect relationships (Nørreklit, 2000; 2003). Ittner & Larcker do not detest the effect of using non-financial measures, however they argue that many use standardized measures which are not tailored for their business. Whereas cause-effect relationships between these indicator and value creation is dubious. Nørreklit goes somewhat longer in her claims, arguing that some of the cause-effect relationships proposed by BSC proprietors are not entirely valid. Through a rhetorical analysis she reasons for the BSC to be a "management guru text", whereas the theories are not empirical evidence rather stylistics devices and compositions that appeal to the audiences' emotions to accept the theory (Nørreklit, 2003, p. 611). This could be said to be a similarity of BB. It is however, not intended as a strict recipe/remedy, more as a mindset, thus it is more difficult to test its effectiveness. This makes it more difficult to question the success stories of Statoil (Bogsnes, 2016) and Svenska Handelsbanken (Wallander, 1999). There are also some distinct differences between the two concepts. BSC has been deducted from theory are proposed in academia, while BB has to a large extent been driven by practitioners. According to Mintzberg´s (1994) classification BSC systems would be associated with the planning school. Rigorous plans are set to achieve goals and the system has a definitive top-down notion. BB on the other hand could be said to have a more emerging form of strategy, as it is a result of processes at all levels in the organisation and utilises a more bottom-up approach. Although the BSC and BB are different in some respects there are claims of the two philosophies convergence (Gjønnes & Tangenes, 2014). Consequently, some of the same questions of validity asked towards BSC could be relevant for the BB philosophy as well.

2.3.8. Complicated budgeting terminology

As seen from the iterations of different budgeting strategies, there are many different definitions and aspects. Many of the concepts are not entirely heterogenous, and there is a degree of overlap. Hansen (2011) refers to the fact that there are many different budgeting

purposes, in which businesses emphasise differently, as a complicating factor. In other words, there are a huge range of practices, subsequently a vast array of definitions. Hansen & Van der Stede (2004) also allude to the absence of well-defined, stable and unitary meanings of the different reasons to budget. The next section will present a framework for the budgets potential roles and display how they are not heterogenous either. Another factor complicating the terminology could be a disparity in budgeting practice, budget research and university literature. Berg (2013), argues that the focus of Norwegian budgeting literature at university level is of a "how to" nature, while not really enlightening potential budgeting issues. Some of the blame for this is allocated towards there not being unambiguous alternatives to traditional budgeting, as some of the newer budgeting concepts have characteristics of "management fashions" or are vaguely defined. Thus, an incongruence of what practitioners learn about budgeting, and the academic budgeting literature could contribute to an even more inconsistent literature.

2.4 The roles and purposes of budgeting

In this section I will present different roles and purposes attributed budgets. I will also look at whether or not the budget is a suitable tool to accomplish these roles and purposes, and whether the different roles can coexist and achieve a common goal. This section is in large based on Gjønnes & Tangenes´s (2016, p. 201-221) framework on ten different purposes of budgeting. Their framework is in turn based on purposes prescribed in four renowned management accounting and management control textbooks. I will also bring up some other frameworks to show the diversity of budgeting roles

2.4.1. 10 reasons to budget

The ten presumed most common roles or purposes of budgeting (Gjønnes & Tangenes, 2016, p. 201-202) are:

1. To set goal or targets to drive behaviour and development of actions to achieve said goals.
2. To coordinate between departments holistically.
3. To prioritise between different objectives and allocate resources thereafter.
4. To delegate/place responsibility.
5. To control costs and expenditure.

6. To illustrate and test financial implications of operational plans (includes assumptions about external factors).
7. To have basis to evaluate the reasons for not achieving targets.
8. To set goals to motivate, and also to set them as a basis for reward systems.
9. To communicate management's goal, priorities and plans.
10. To stimulate and operationalise planning.

To begin with, I think it is important to mention that Gjønnes & Tangenes (2016) believe testing financial implications (or forecasting) is the only role with no major role conflicts. Reasons 2, 3 and 5 are perceived to have some achievability, they are potentially more flawed than the forecasting role. The other purposes are seen as being likely to have impactful role conflicts. However, the other purposes are still relevant to discuss as they definitely are used in practice despite their apparent issues. Another noteworthy framework on the subject is Hansen & Van der Stedes´s (2004, p. 418). They propose four different reasons to budget, two short term: 1) operational planning 2) performance evaluation, and two long term; 3) communication of goals 4) strategy formulation. As apparent, there is some overlap in the classifications, although not for all purposes. Some frameworks are more comprehensive, while other focus on a few key factors. Churchill (1984) separates between planning and control as the two reasons to budget, while Sivabalan et al. (2009) use planning, control and evaluation as their budgeting reasons. Ekholm & Wallin (2000) and Barret & Fraser (1977) both split into five reasons to budget, they are a mix of reasons we have already looked at. As we can see the diversity in budgeting purposes is significant, and there is clearly some overlap in the many purposes suggested. I will use Gjønnes and Tangenes (2016) framework as a format for exploring the budgeting purposes, as it comprehensively includes elements from most frameworks. I will also incorporate the other frameworks where they are appropriate.

To understand Gjønnes & Tangenes´s (2012) framework of reasons to budget, and the reasons' potential role conflict, it is important to define the broader goals of budgeting. They infer that budgeting is mostly problematic when asserted a role it is not fit to uphold. In most textbooks affirm a goal-oriented purpose of budgeting practice (Gjønnes & Tangenes, 2012). If the budget is viewed either as the goal, or the goal is achieved through budgeting, these are where the potential complications lie according to Gjønnes & Tangenes. Thus, the budget can only be viable if disconnected from a goal-orientation. In Figure 1, this is the first option

illustrated. For this option the budget is only to test financial implications (I.e., Forecasting), as the budget has been detached from planning and target purposes.

Figure 1: Goals, plans & Budgets. Figure adopted from Gjønnes & Tangenes (2016, p. 219)

2.4.1.1 Goal/target orientation to drive performance

This reason to budget could be recognised as one of the key ideas of traditional budgeting. This pertains to the idea of setting a target for a budgeting period and striving to meet this target. This could be related to motivation, as departures from targets during the budget period, could motivate attempts to achieve the set target. This reason could be seen as part of the planning purpose, as this implies thinking ahead, and making plans for deviations. However, planning can entail more than setting a target. Fixed targets to drive performance has been heavily criticised. The relevance of the target can be dubious, especially if the target is of a financial nature. Bogsnes (2018) calls this concept "hitting the target but missing the point". There is not necessarily a connection between achieving a budgetary goal and performance. Gjønnes & Tangenes (2016, p. 207) argues that it is dangerous to say that budgetary realisation and value creation are the same thing, as this implies that the reason to manage is to accomplish budgetary goals. There is no point in achieving a budgetary target if it does not involve value-creation in any shape or form. Merchant & Manzoni (1989) found that managers in profit centres of larger corporations want to meet their budgeting targets for personal reasons and subsequently that they were more likely to prepare targets that are within achievable reach. Barret & Fraser (1977) also refer to this role conflict. They call it a conflict between planning and evaluation, and they see some of the same issues. However, they believe it is a minor problem as the results can be adjusted for issues at the end of the period. The targets themselves are also subject to criticism. Selection/negotiation of budgetary targets have been said to induce budgetary games (Hansen et al., 2003). Consequently, the potential for conflicts of interest is apparent and combining this with the relevance of the target,

especially when combined with incentive systems as well. This issue will be discussed further as a separate role.

2.4.1.2. Evaluation of deviations from target

This budgeting emphasis can be closely related to that above, as for evaluation of targets, said targets would have to be present. By evaluating degree of target achievement during a budget period, the results can be used for multiple purposes. The most evident form is to review the past budgeting period. Results can also be used to trigger incentive systems, and sanction both negative and positive consequences (Gjønnes & Tangenes, 2016, p. 219). Horngren et al. (2015, p. 222) point to possible learning effects for when the results are deviating from planned budgetary targes, i.e., "learn from our mistakes". The idea of evaluating deviations from targets is in itself sound, as this could provide a framework for assessing a more holistic picture of both the target and the plan. However, this implies that there is a goal-orientation, where the main objective is to hit the target. As we have seen with the goal-oriented purposes, there are several issues related to this. Consequently, some similar concerns of relevance and reliability of targeted goals are present for this role. Barret & Fraser (1977) list planning and evaluation as one of the role-conflicts a budget can instigate. The issues arise if solely assessing whether a target is hit or not, they argue that the conflict can be reduced if proper perception of a bigger picture is implemented.

2.4.1.3. Coordination between departments

Horngren et al. (2015, p. 221-222) claims one of the advantages of budgeting can be promotion of coordination and communication between subunits within a company. This purpose could be linked to prioritising and allocation of resources. The budget is used as a tool to force executives to think of relationships among the different departments (Bhimani et al., 2008). Barret & Fraser (1977) also suggest that the budget can have a coordination role, where the different departments and subunits of the value chain should coordinate and plan their budgetary targets and then consolidate to coordinate the whole process. Thus, this role can be related to both communication and resource allocation. This process is meant to improve information sharing and cooperation. If the budget is used in this manner, in a fashion of departments coming together to communally set target, issues of goal-orientation and target-setting are still present. Thus, still conflicting with other roles. This role could be employed in both a top-down manner, where goals are set by management and departments has to cooperate to comply, or with a more decentralised corporate governance whereas the

subunits communicate and coordinate both to set targets and how to achieve them. The first could be associated with traditional budgeting. However, either approach could experience gaming, or suboptimal behaviour as means to reach or set targets.

2.4.1.4. Prioritise and allocate recourses thereafter

Prioritising and allocation are closely related to coordination between departments (Gjønnes & Tangenes, 2016, p. 230). So, it follows that the same type of logic applies to this purpose as well. If the prioritising process is top-down and command & control oriented, it could be criticised of relevance, as a result of decisions-makers distance from the process. Even with a more bottom-up corporate governance, there is a potential threat of suboptimal behaviour affecting resource allocation. Gjønnes & Tangenes (2016, p. 221), believe this is a relevant role, that is somewhat achievable to sustain without major role conflicts.

2.4.1.5. Control cost and expenditure

Another classic reason to budget is cost control. The classical example is setting a roof for expenditure in the budget to manage costs. Although this might lead to reasonable control of expenditures, there are several challenges with this type of budgeting. Firstly, it has many of the same connotations as using the budget as a target, i.e., working towards a goal which might not be relevant. Another issue of applying the budget as a framework for maximum costs is gaming behaviour (Bogsnes, 2016, p. 26-30), especially what is referred to as "spend-it-or-loose-it" attitudes has been cited as a challenge (Hope & Fraser, 2003b, p. 110). This form of behaviour refers to cases where employees will maximise the expenditure that is within their limits, perhaps to have easier targets next period, or maybe a mindset of: This is the budgeted amount, and it should be spent. As Gjønnes & Tangenes (2016, p. 209) puts it, budgeted expenses can tend to become a self-fulfilling prophecy. Additionally, issues of expense budgeting are linked to value creation and relevance. In a business the value is not first and foremost created by abstaining from using money, but rather from using the money to invest and receive returns on these investments. Cost budgeting has also been suggested to be constraining innovation and creative thinking. Dunk (2011) studied the effects of budgeting in innovation and performance and found budgeting for control purposes could impede innovation and in turn performance. Logically it would be challenging to budget something like R&D expenses without doing continual assessing the cost to benefit ratio.

2.4.1.6. Delegate and place responsibility

This purpose is closely linked to reward systems and motivational reasons to budget, as well as potentially, the coordination role. The general idea is to place responsibility to provide ownership and a commitment towards performing. Performance could of course be many different things but is often seen as achieving targets in this context. Horngren et al. (2015) argue people will work hard to avoid failure, because of this they will work hard to achieve targets. A system like this, would give the budget a goal-orientated purpose, consequently inviting many of the same threats of target-setting which already has been discussed. Issues of gaming, or other suboptimal behaviour, as well as relevance issues could be prevalent. Bogsnes (2018) actually contribute some of the issues, to targets actually working. As we strongly feel targets will have to be achieved, goals can be achieved through an array of suboptimal means. Bogsnes also argues that the blind ambition to achieve goals, can make us prone to miss opportunities along the way.

2.4.1.7. Targets as motivation and basis for reward systems

Merchant & Van der Stede (2017, p. 301-310) present budgetary financial targets as commonly used performance measures. They argue that financial targets can be an effective method to motivate performance from employees, even though there are some issues attached. Firstly, how easy/hard should the target be to accomplish, and secondly how much influence should employees have in setting targets. If the target is too easy, you perhaps get sub-par performance, however if you set a too difficult target it will begin to demotivate participants. It can also be argued that employees should be participative in the process of setting targets, but as we know from issues with negotiating targets and gaming behaviour, too much influence could be problematic. Bogsnes (2016, p. 34-44) is especially sceptical towards bonus systems that rely on accomplishing budgetary targets, and even more so if the participants can decide their own bonus schemes. They argue it promotes unethical behaviour. Especially problematic when the key interest is unlocking individual rewards rather than creating value. Jensen (2001) believes budgets are a fixable concept. However, similar to the BB philosophy, he believes that companies should get rid of incentive systems based on budgetary targets, as this practice cannot be repaired. Barret & Fraser (1977) argues that rigid systems, can even be demotivating, in the sense that managers can be evaluated on uncontrollable factors, so why should they even try? And from the businesses side, you could risk paying out bonuses for performance that can´t be linked to management. They also argue that there is a conflict between planning and motivation. If the budget is supposed to be a

plan, you should not include a stretch to motivate, because then it is not de facto a plan anymore, rather an optimistic preview. On the other hand, if the budget is a goal, and goal-achievement triggers incentive systems, problematic behaviour could influence both the targets as well as the means to reach them. In other words, a goal-oriented budget, with incentive systems linked to these goals, is near impossible to not experience role conflicts. Linking both fixed and flexible targets to incentive systems or using targets to motivate have a multitude of challenges associated, especially when the targets are based on negotiating between management and budget participants.

2.4.1.8. Communication of managements goals

A budget can be used as a tool to communicate a holistic picture of a company to its employees to make sure they understand it. In this case the purpose will be to present a plan and create congruence between management´s plan and employees understanding of this plan (Horngren et al., 2015, p. 221). This could be linked to strategy and using the budget as a means to communicate management's strategy and plan to the company (Bhimani et al., 2008, p. 468). Firstly, it is possible to attach some top-down criticism to this approach. Of course, the goals can be based on a bottom-up type coordination, but there is still a hazard of centralisation issues. Gjønnes & Tangenes (2016, p. 218-219) argue that the way the plan is defined or presented is also a key issue. If the budget is the same as targets, the plans are the means of reaching target/budget. The other way around the budget is often seen as the plan to reach goals. Either way, if the budget is presented as a goal or a plan, they will be prone to some of the extensive criticism of budgets being target-/goal-oriented.

2.4.1.9. Stimulate and operationalise planning

To stimulate and operationalise planning is about how a business defines planning. This is closely related to the last section, as this is a question of how planning is defined by management to shape the budgeting process. Is the plan a way to reach budgeted goals? Is the budget actually a plan? Or is the budget separated from the plan and the budget? Gjønnes & Tangenes (2016, p. 218-219) argue that expressing the budget as a plan can be questionable, as this limits the probable relevance of this plan, especially when budgeting in the traditional sense. Some studies have indicated use of rolling budgets (in a sense this can be defined as continuous planning) can mitigate some of the relevance issues of planning (Frow et al., 2010; Hansen, 2010).

2.4.1.10. Illustrate and test financial implications of operational plans

The final reason to budget is the only purpose of budgeting Gjønnes & Tanges (2016,) find viable, without any major role conflicts, although with certain caveats. This involves only using budgets to test the financial implications of operational plans. This could be perceived as a forecast. The forecast does not reflect a target or a goal, only a realistic assumption about the future. If the budget is a forecast and is rid of a goal-orientation, Gjønnes & Tangenes (2016) argue this role will experience little to no role conflict. When separated from planning and targets, there is little left to criticise. The budget cannot be linked to incentive targets, as there is no sense linking performance to a prediction of the future. There should be no games in generating the forecast, as its only goal is to be as realistic as possible. Consequently, the relevance of the actual figure should also be higher as there should be no budgetary reach or slack incorporated.

2.4.1.11 Summary budgeting roles

As we can see there are vast amounts of reasons to budget, and they to a large degree overlap each other. As already alluded to, prevalent work in the budgeting literature have also struggled to define unitary measures of budgeting roles (Hansen & Van der Stede, 2004, p. 419). Many of the roles have conflicting aspects and when used in combination with each other this can cause potential issues. Gjønnes & Tangenes (2016) suggest forecasting as the only viable purpose, separating this from target and planning purposes to have little to no role-conflict. This is not to say that they do not believe in use of other purposes, however with a goal-oriented budgeting purpose, most roles will most likely have impactful conflicts of interest. Other researchers also see role-conflicts, however, regard them as inevitable. Barret & Fraser (1977) think it is important to reflect on budgeting systems, discover possible role-conflicts and try to reduce them.

2.5 Hypothesis development

In this segment I will develop and argue for hypothesis regarding my research question based on the latter review of existing literature. Some initial stipulations regarding the theory will be discussed before a brief presentation of the overall model proposed as well as hypothesis and sub-hypothesis of relationships in the model.

2.5.1. Initial stipulations

As a general theme in the hypothesis development, more flexible budgeting, or beyond budgeting philosophy have been associated with perceived positive outcomes. This does not necessarily depict a logic deducted from theory, as there is not much known about potential outcomes of more radical budgeting practices. However, the basis is that more radical practices have "fixed" the issues of traditional budgeting, thus should be related to more positive outcomes. The model proposed denotes three groups of budgeting practice: 1) Traditional Budgets 2) Improved or Flexible Budgets 3) Budget Abandonment/Non-Budgeting. Budgeting roles are an important feature in my research question. However, there are no clear-cut definitions of budgeting roles and those presented in the latter section are relatively fluid. Subsequently, for my research question I have condensed Gjønnes & Tangenes´s (2016) 10 roles to six. The definitions have been deducted with other budgeting purpose frameworks in mind as well. The 6 roles and their definitions:

Control – *Control cost, expenditures and performance. For example, budgets are used to set roof on expenditures and goals for performance to make sure different divisions of the business are controlled.*

Planning – *Budgetary targets are used as plans for the future. We will know what to do because we have a budget to follow.*

Forecasting – *The budget is used as a prediction of the future. The numbers are not explicit goals to work towards, but rather an indication of the future.*

Strategy – *The budgets help to convey the strategy and aligns cross-department communication and coordination.*

Motivation/Compensation – *Achieving budgetary goals are used as motivation, for example, there are rewards systems linked up with budgetary achievement.*

Evaluation – *Budgets are used to evaluate both individual and business performance, achievement of budgetary goals in a post budget period are usually evaluated.*

2.5.2. Overall Model

The model states antecedent as predictors of Budget Format, as well as Budget Format as a predictor of roles, and budgeting outcomes. Relationships between the outcome variables, are also stated, albeit without a specific direction of the relationships interdependence.

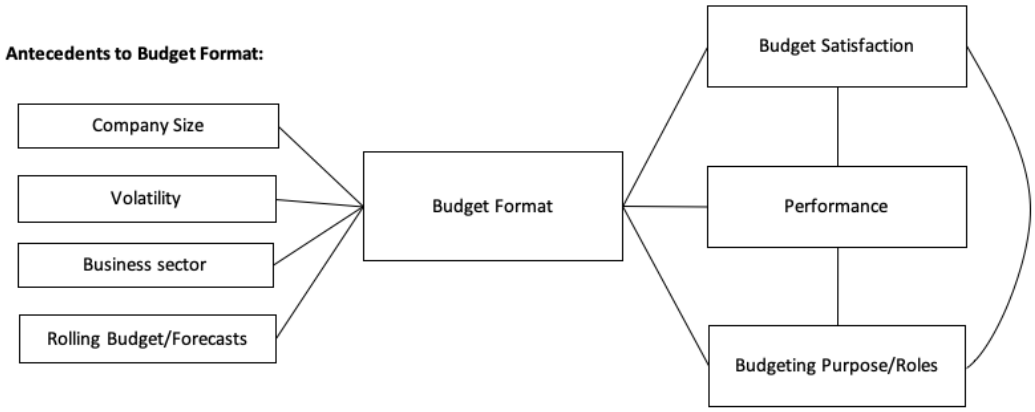

Figure 2: Hypothesised Model

2.5.3. Hypothesis

HI: Budgeting Antecedents have an association with Budget Format

These variables are in a sense control variables, however they can be hypothesised to have an effect on choice of budgeting format.

H1.1: Company size has a significant association with budgeting formats - As it is not clear how company size would affect budgeting format, this is somewhat guesswork. A speculation is that either/both larger and smaller businesses could be associated with flexible/non-budget formats. The thought process being smaller businesses perhaps being more experimental as they are younger companies with less restraints, and larger companies do perhaps have more resources and larger departments for development/operation of management systems, thus are likely to evaluate newer methodologies.

H1.2: Volatility has a positive association with flexible/non-budget format – This hypothesis is grounded in the assumption that more flexible or non-budgeting is a method mitigate relevance issues, making the business more adaptable. Traditional budgeting systems are often criticised for being too rigid. Bogsnes (2016) and the BB – philosophy stress business agility as an important factor. Thus, more volatility should result in more flexible/non budgeting systems.

H1.3: Business Sector has a significant association with budgeting formats – This is also a more speculative hypothesis. However, Hansen & Van der Stede (2004), found some relationships between business characteristics and certain budgeting roles. E.g., a relationship between production businesses and operational planning. Consequently, the presumption is that more industrial sectors could be linked to more traditional budgeting, while businesses in sectors providing more intangible products/services would perhaps be more prone to flexible-non budgeting.

H1.4: Rolling budgets has a positive association with flexible/non-budget formats – Rolling budget are in the literature typically associated with flexible budgeting and rolling forecasts with BB-philosophy. Conversely, the assumption is that use of rolling budgets are associated with flexible/non-budgeting.

H2: Budget Format has an association with Budgeting Roles

Based on the descriptions of the budgeting roles, they are presumed to be associated with certain budgeting formats.

H2.1: Traditional Budgeting has a positive association with Planning, Control, Motivation and Evaluation – These are typical facets of traditional budgeting, which has been heavily criticised, the assumption is that they are positively associated with this budget format.

H2.2: Flexible Budgeting has a positive association with forecasting, strategy and planning – Some of the roles included in this assumption are to a certain degree contradictory, however flexible budgets are still assumed to have potential role conflicts. Thus, planning is still included, and in addition there is forecasting and strategy. These are thought to be roles associated with taking a step further than traditional budgeting.

H2.3: Non-Budgeting has a positive association with forecasting – From Gjønnes & Tangenes (2016) the only budgeting role without major conflicts is forecasting, and when stripped of criticism it is not all that different from the BB philosophy. Thus, Forecasting should be associated with non-budgeting systems.

H3: Budget Format has an association with Performance

More traditional practices are thought to have negative outcomes, as they are heavily criticised, while more radical practise is assumed to positively associate with performance as they are presented as a solution to the issues of traditional budgeting.

H3.1: Traditional Budgeting has a negative association with performance
H3.2: Flexible Budgeting has a positive association with performance
H3.3: Non-Budgeting has a positive association with performance

H4: Budget Format has an association with Budget Satisfaction
As with the previous hypothesis, traditional formats are assumed to relate with negative outcomes, while more radical systems vice versa.

H4.1: Traditional Budgeting has a negative association with Budget Satisfaction
H4.2: Flexible Budgeting has a positive association with Budget Satisfaction
H4.3: Non-budgeting has a positive association with Budget Satisfaction

H5: Budget Satisfaction has a positive association with Performance
With higher levels of satisfaction with current budgeting systems, this could indicate "better" budgeting systems, and is assumed to translate to higher performance.

H6: Budgeting Roles associate with Performance
H7: Budgeting Roles associate with Satisfaction
For both hypothesis, roles typically associated with traditional budgeting are presumed to have negative outcomes (lower performance/budget satisfaction). These are mainly control, motivation, planning, and to an extent evaluation. In contrast those typically associated with more flexible or radical budgeting systems, are deducted to relate to positive outcomes. This is first and foremost: forecasting and strategy, and to some extent evaluation.

H8: Budgeting Roles associate with one and other
As alluded to the budgeting roles are not entirely homogenous, and in the budgeting literature the definitions are fluid. For these hypotheses, roles associated with a certain budgeting format are thought to correlate positively among each other, while roles crossing their distinctive group, are thought correlate negatively between each other. Based on previous literature, the following relationships are proposed:

H8.1 Planning has a positive relationship with Control.
H8.2 Planning has a positive relationship Motivation.
H8.3 Planning has a positive relationship with Evaluation.
H8.4 Control has a positive relationship with Motivation
H8.5 Forecast has a positive relationship with Evaluation.
H8.6 Forecast has a positive relationship with Strategy.
H8.7 Forecast has Negative relationship with Motivation.
H8.8 Forecast has Negative relationship with Planning.
H8.9 Forecast has Negative relationship with Control.

3. Methodology

This chapter will review in detail how I will answer my research question. The purpose of research is to develop valid and reliable knowledge about reality, and the methodology is the strategy to achieve this (Jacobsen, 2015, p. 15). This section will begin with a recapitulation of my research question, as this is the driving force behind methodology. Thereafter I will assess my own preconceptions and philosophical perspective, to review how biases and innate characteristics could possibly affect the research project. Subsequently a deductive and quantitative strategy and a descriptive, cross-sectional research design will be proposed as the preferred approach to answer my research question. This involves administering a survey to a relevant population. Question designs, constructs, sample and distribution and modes of analysis will be presented in detail. Alongside this presentation, threats to validity and reliability are considered and discussed. Finally, I will consider ethical challenges of this research project.

The purpose of my research was to answer the following research question:

> **"What are the current budgeting practices in Large Norwegian Companies? And how do budgeting characteristics affect budgeting outcomes?"**

3.1 Philosophical considerations and Preconceptions

Jacobsen (2015, p. 21-22) states that methodology and experience of reality are two concepts that are tightly intertwined in that the way you experience reality could shape the methodology as well as the other way around. Ontology and epistemology are two key concepts in defining how one defines reality. They relate to how reality and knowledge is defined (Bell, Bryman & Harley, 2019, p. 25-33). For my study I employ a relatively positivistic view towards these questions. Those who view the world objectively, as a set of scientific natural laws and believe there is there is an objective truth are regarded as positivists, while those who view reality as more subjective, a social construct built from human interaction are viewed as constructivists (Bougie & Sekaran, 2020, p. 23). Positivists attitudes towards ontology and epistemology have are usually linked to quantitative methods, as they seek to find a single reality through numbers and statistics, while qualitative studies are usually towards a more constructivist and subjective view of reality (Savin-Baden & Major, 2013, p. 15-16). I do, however, acknowledge that budgeting is a social construct, and I do not believe that there are natural laws defining it. As there a range of views in-between the two extremities of positivists/constructionists, applying joint aspects (Bougie & Sekaran, 2020, p. 23). I, more or less take on the view of a critical realist, a view in which it is though empirical evidence can say something about a reality, although it cannot define it as true. (Jacobsen, 2015, p. 34). This is fitting for my research project where I am attempting to quantify a social construct, as I believe I can find indications, rather than evidence of natural laws.

An important preconception I had prior to the research project, has already been brough up in the hypothesis development. I have preconceived traditional budgets to be associated with negative outcomes, while more adaptive systems were thought to have positive outcomes. As there is not much empirical evidence, more theoretical evidence, I believe this do be a form of bias. However, by acknowledging this preconception, I hope to answer the research question objectively.

3.2. Research strategy

To answer my research question, I have employed a deductive, quantitative strategy. A brief overview of deductive and quantitative approaches are provided below.

3.2.1 Deductive approach

In my research I have had a deductive approach rather than an inductive approach. A deductive approach draws upon previous theory and knowledge to develop hypothesis and thereafter testing these through data collection (Bell et al., 2019, p. 20-24). My research questions were constructed on the basis of an extensive literature search on the subject of budgeting. The knowledge I had previous to the project as well as the knowledge acquired in the early faces lead to the research questions and hypothesis proposed. By all accounts, my methodology has a deductive approach.

3.2.2. Quantitative methodology

Quantitative methods are often associated with positivistic views and deduction methodology. The general idea is to quantify a phenomenon to acquire more data and use statistics to make results more "objective" (Jacobsen, 2015, p. 26). The objectivity of quantitative methods can of course also be questioned, and this will be questioned in the review of validity and reliability. In my view the research questions lend themselves to a quantitative approach, as statistical methods would be able to say something about the matter. However, I acknowledge that a qualitative approach would also be able to provide results, albeit with a higher degree of interpretation required. This is not to say that my potential results would not need any interpretation only because they are of a quantitative nature, as some assumptions still will have to be made.

3.3. Research design

In this segment I explain why I have opted for a descriptive and cross-sectional research design. These are preferred as they are appropriate means to answer my research question as well as being in line with a deductive quantitative approach. Thereafter, I will in detail present my research proposal, whereas a survey is the main mode of data gathering. Aspects as, design, distribution, construct measurement, sample and population will be described. How the data will be analysed to answer my research question is also displayed.

3.3.1. Descriptive design

Descriptive designs take on the role of describing a certain phenomenon a single point of time, and are often applied to subject where much is already known about a topic. (Jacobsen, 2015, p. 81). Descriptive design frequently study associations between variables as a means to describe phenomena. (Bougie & Sekaran, 2020, p. 57). This study will adopt a descriptive

research design. The general topic of budgeting and strategic management accounting is already studied abundantly, so it is sensible to narrow down from the beginning. Albeit descriptive studies are applicable to study relationships or correlations between variables, they are not appropriate to study causation. For this causal design are appropriate. A characteristic of this design is that it should be measuring the phenomena over multiple timeseries, not only at a single point of time like a descriptive design (Jacobsen, 2015, p. 82). As my project had limited time and resources, a longitude study would not be realistic. Further, as I believe there are no "natural laws" regarding budgeting practice, a descriptive design indication results, may in this case be as appropriate as a more causal design.

3.3.2. Cross-sectional design

There is a wide array of specific research designs that can be applied. When choosing an appropriate research design questions of validity, reliability and relevance should be taken into consideration (Bell et al., 2019, p. 48), the research design should also on some level be practically feasible (Bougie & Sekaran, 2020, p. 104). For my study I choose to implement a cross-sectional design, a design where multiple subjects are observed at a single point of time (McQueen & Knussen, 2002, p. 67). Bell et al. (2019, p. 58) argument that cross-sectional are appropriate when: researching more than one case, at a single point of time, there is quantifiable data, and searching for patterns of association. Thus, this is an appropriate approach for my research project. The internal validity of cross-sectional research is necessarily weaker than design that to a larger extent seeks to uncover causal relationships (Bell et al., 2019, p. 59), however the results can still be valuable. I especially believe the results may be as valuable when quantifying social constructs, as this is no exact science, and some degree of interpretation of results will have to be taken either approach.

3.4. Detailed research proposal

Based on philosophical considerations I decided a deductive and quantitative logic would be an appropriate strategy to address my research questions. I have also argued that for applying a descriptive, cross-sectional research design. A more detailed proposal for my research project is presented below. Firstly, the introduction of measures of research quality: validity, reliability and replicability, and how they will be kept in consciousness to ensure quality of all aspects of research design. The core of the research design was a self-administered questionnaire, and how this is supposed to measure relevant variables. A comprehensive plan

for how the survey will be designed, who will respond, what is being measured, and how results will be interpreted is provided.

3.4.1. Validity, Reliability & Replicability – research quality

Validity, reliability and replicability are the three most prominent criteria for evaluation of methodology (Bell, et al., 2019, p. 46). To constitute rigor in the research process, the researcher has to be scrupulous, careful and exact (Bougie & Sekaran, 2020, p. 17), thus the issues regarding these three factors should be carefully reviewed. While most of the discussion of these issues will take place describing the presentation of methodological choices, an overall assessment will be presented as well.

Validity says something about the integrity of the conclusions generated from research (Bell et al., 2019, p. 46) and has multiple facets. Internal validity pertains to the question: does the methodology we practise and conclusions we draw represent reality (Jacobsen, 2015, p. 228)? Or simpler put, are we measuring what we are supposed to measure? One aspect that could be said to be underpinned internal validity, which I will highlight is construct validity. This is a measure of how well results obtained from the use of a constructs/measures fit the theories for which the test is designed (Bougie & Sekaran, 2020, p. 210). This is a reoccurring challenge in my research, as there are no clear, unambiguous set of budgeting characteristics. This was also brought up in the theory section and will be brought up more than once throughout the preceding part. External validity is also an important concept which says something about to what extent the results obtained from a research project can be generalised to beyond the particular research context (Bell et al., 2019, p.47). One of the key challenges in this aspect is to select an appropriate sample, such as the results can be generalised to a larger population.

Reliability concerns to what extent the research is reliable, and stable (Bell et al., 2019, p. 46). Questions of how the researcher, or the respondents, or the means of gathering data can potentially influence the results should be asked (Jacobsen, 2015, p. 241). If any situation specific traits of a research project influence results, thus making replication of the project unavailable or the fact that a replications results would differ, this would lead to decrease in reliability. Another concept that will be assessed is the replicability. This concept is closely related to reliability and pertains to the degree that the study can be replicated of others (Bell et al., 2019, p. 46). With a rigorous and exhaustive research proposal, I hope to enhance both reliability and replicability.

3.4.2. Questionnaire

To answer my research question, I decided to administer a self-completion questionnaire. The final survey which was sent out to the respondent can be found in Appendix B. Bell et al. (2019, p. 232-235) point to some distinct advantages of self-completion surveys. Firstly, they greatly decrease cost and time of administering and distributing interviews. They are also convenient to the respondent as they normally can complete them at their leisure. These feats make it possible to reach out to many respondents and potentially increase the sample size. As my research method was of a quantitative nature, a survey would be an appropriate mean to gather as much data as possible, given the time and resources available.

From a more strictly methodological standpoint, Bell et al. (2019, p. 232-235) also point to pros and cons of the self-completion survey. This form of interview normally ensures that all respondents will receive the exact same line of questioning, which helps comparability of respondents. The researcher is also not present to intervene during the interview, which can be seen as a positive as this also helps the results comparability. However, this is also seen as a weakness of the self-completion questionnaire. As the researcher is not there, he cannot discover and aid in mistakes or misinterpretation. This could lead to wrongful data, decreasing the internal validity. This was an important consideration as the budgeting terminology could differ, and question consequently misunderstood. Another consideration for this type of survey, is the possibility of respondents becoming tired of questions, feeling of questions missing relevance or other factors influencing the respondent to not complete the survey. Another weakness of this form of survey is the inability to follow up on interesting leads, which could aid in gathering additional data or inspire further research. However, this is perhaps a more useful facet in a study of a more exploratory nature than the present research.

Two key challenges with the proposed survey were identified. Response rates and a clear and concise presentation to ensure generalisability and validity, respectively. Below are some augmentations made to the self-completion questionnaire to combat its weaknesses.

3.4.2.1. Response rates

A priority was to keep the survey short. By designing the survey to take 5 minutes or less, it would be likely to increase both the number of completed surveys and the total response rate

in the sample. Secondly, the invitation to partake in the survey will be sent out to a select group (executive management of large Norwegian companies, the selection process and reasoning will be discussed later on), emphasizing the short length and giving some background information about my project and education. Hopefully the synopsis of the research would spark some interest in the topic and increase responses. Furthermore, many of the potential respondents would probably have completed similar projects throughout their education. A mention of this could perhaps help encourage some responses. The invitation letter can be found in Appendix C. Reminders of the invitations to partake where also sent to remind those who had not yet responded and enhance response rates. Designing a brief survey and attempting to appeal to interest in the invitation would hopefully increase responses. The survey was designed in Qualtrics an online survey tool preferred and recommended by my university. This tool allowed a safe anonymous link from a trusted site for the respondents as well as a clean and user-friendly interface making it easy for respondents to complete the survey.

3.4.2.2. Clear, concise and precise presentation

To present the questions in a clear, concise and precise manner is not only important to potentially enhance response rates, it is also integral for the validity of the results. The variation (or non-variation) in the results should not come from errors like poorly worded questions, misunderstandings, questions perceived significantly different among sample, etc. (Bell et al., 2019, p. 209). As discussed in the theory proportion of this paper, the budgeting terminology can differ from business to business, and even within the same business. There is also a potential gap between academics and practitioners, which could be challenging as I mostly draw upon theory from budgeting literature. To face this challenge, I have used lines of questioning mostly from peer-reviewed research, and the other questions have been designed through multiple rounds of assessments and adjustments with the help from my thesis supervisor. The survey was also screened, although only of two potential respondents, to try out relevance and understandability of the survey. This screening was predominantly to confirm that the questions were understandable and the length of the survey reasonable. If I was to change lines of questioning or other fundamental factors, it would require a larger screening sample. This could have been done, however, due to limited time and resources a meticulous screening process was not an option. Even if this was the case, there is no guarantee respondents would interpret questions homogenously, nor very likely due to individual differences. The challenge of finding a common terminology among the entire

sample, which made it possible for respondents to interpret the questions as intended was seen as one of the key challenges for internal validity. This is unfortunately, one of the weaknesses of a self-administered survey, the researcher cannot be present to resolve any potential misunderstandings, and the respondents are left on their own to interpret questions.

3.4.3. Constructs/variable definition and measurement

The constructs defined in the hypothesis development are in this segment operationalised to be measurable variates. To enhance construct validity, and in turn the internal validity of the research project the process of how all constructs will be quantified are thoroughly discussed. The bulk of the measurements are based on tried and tested lines of questioning from peer-reviewed research. The variables that are not exact replications of previous work, are still loosely based on established measures. The questions referenced in the following section can be found in Appendix B.

3.4.3.1. Budget format

Originally this variable was to be split in three categories in accordance with Johanson & Madsen´s (2013) framework: Traditional budgeting, flexible-budgeting, and non-budgeting. Whereas traditional budgeting would reflect rigid systems would little to no flexibility, flexible budgeters would be the middle ground of improved budget, as non-budgeting those who have chosen to abandon the budget. However, when data was gathered, an issue of small samples was discovered. From the results my sample only contained 30 flexible budgeters and 14 in the non-budgeting category. Both groups are such small samples that it can be hard to employ statistical tests. Thus, I decided to make a modification. The groups would be split into Conservative/Radical, whereas the "Radical group" includes both flexible budgeters and those who do not budget. They are assumed to have some similarities in the way they have found traditional budget to be so out of touch that they have opted for change. The Conservative/Radical framework was based on Ekholm & Wallin (2000) where they employ this framework.

The original line of questioning was also based on Ekholm & Wallin (2000). They used a five-point scale to distinguish different types of budgeting. I made some slight alterations to nuance the flexible budgeting group, however the questions are very similar. Thus, the reversal from the 3-group classification to the 2-group, should still measure on more or less the same aspects. Originally those who answered 1-2 was considered to be relatively

traditional budgeters, 3-4 flexible budgeters, and 5 non-budgeters. With the conservative/radical groups: 1-2 are conservative budgeters, whilst 3-5 are radical budgeters. The reason for distinguishing beyond the categories, are so respondent would find it easier to classify themselves. For example, if I was to ask: do you consider your budgeting practice to be conservative or radical? Many respondents would perhaps not recognise within the categories and choose not to respond or feel forced to choose options they feel are wrong.

3.4.3.2. Budgeting Roles

As extensively covered in the theory-portion of this paper there are a lot of different roles or

Budgeting Format		
Traditional-Budgeting	Flexible-Budgeting	Non-Budgeting
Conservative Budgeting	Radical Budgeting	

Figure 3: Budgeting Practices

purposes the budget can (or are supposed to) fulfil. Gjønnes and Tangenes (2016) describe ten budgeting roles in their work. As budgeting roles are not heterogenous and rather fluid, some can be merged. In my iteration I have condensed these down to six. Other prominent papers use even fewer (i.e. Barret & Fraser,1977; Churchill, 1984; Ekholm & Walllin, 2000; Hansen & Van der Stede, 2004). These studies have also been taken into considerations when creating descriptions for the six reasons to budget, that I propose (appendix B).

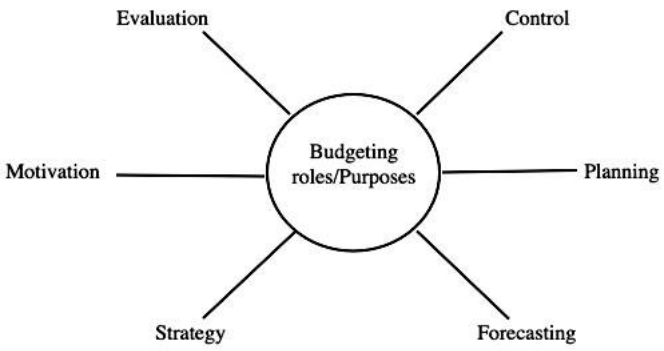

Figure 4: 6 Roles of Budgeting

The respondent will simply be asked which roles they emphasize in their budgeting system. Multiple choices will be available, and it is possible to write inn your own answer if none of these correspond to their practice. A description of each role was also provided to counteract conceptual overlap. The descriptions are based on the theory proportion of this paper. There was also a follow-up question for the reasons that are marked by the respondent. A 7-point Likert-scale will ask how satisfied they are with the particular budgeting reason/purpose.

3.4.3.3. Budget satisfaction

This variable is an attempt to capture the overall satisfaction with the budgeting or non-budgeting system. To establish a measure of satisfaction with the current budgeting or non-budgeting system employed in the company I have used the same questions that Hansen & Van der Stede (2003, p. 425) used in their research of antecedents of budgeting. Their questions were in turn grounded in Swenson´s (1995) line of questioning determining the satisfaction with another management tool; activity-based costing. The items review how the managing unit views the budget as an aid, and how well it supports both short-term operational and long-term strategic decisions. Responses from the three questions will be aggregated to form an overall budget satisfaction score. Producing an aggregate score from more than one item, all evaluating some different aspect of budget satisfaction could help averaging out the extremities in the response. Thus, this is a preferable solution compared to simply asking how satisfied one is, overall with the budgeting system. On slight alteration I have made to Hansen & Van der Stede´s items, is the expansion to a 7-point Likert scale, rather than a 5-point (The use of Likert-scale items, is discussed in a separate segment). This adjustment is mostly to stay consistent throughout the survey, as the 7-point scale is used for other items. A benefit of additional alternatives is that it may be easier for respondents to reply, as they do not fall between two groups.

3.4.3.4. Financial Performance

Financial performance is a difficult variable to measure and define, as it encompasses a vast array of delineations. Financial performance could be numeric values as revenue, net income, EBITA, growth rates, market shares etc. However, as we have learned from the relevance lost debate performance could be measured in other ways than strictly numeric from financial statements (Johnson & Kaplan, 1987). And as Kaplan and Norton (1992) have made a strong case for with their famous “Balanced Scorecard” performance could include for example,

customer satisfaction, internal capabilities, employee satisfaction and so on. The takeaway from this iteration of the relevance lost debate is that there are many underlying factors behind the numbers in financial statements. Although these are "objective" and easily comparable measures, they may not give any more than an indication. Grounding a performance measure entirely on something like EBITA or other values from financial statements could be problematic to generalise for a cross-section of Norwegian Companies, as they have fundamentally different prerequisites for performance. A company in growth could have a negative net income, however the potential and other results achieved could still imply ample performance. Consequently, strictly financial measures, are challenging to compare without making other considerations. Of course, more complicated models accounting for underlying factor could be crafted. However, this would most likely still not ensure total comparability, and it would be both resource and time consuming, as much more data would have to be gathered.

If collecting specific company data, I would also have to relate this data to the corresponding responses, resulting in identification of companies and respondents. If I was to offer the respondents complete anonymity, collecting financial information and relating them to specific information was not an option. I wanted to strive for complete anonymity, so respondents would feel safe that their information would not be misused.

Hence, I opted to collect self-reported data of financial performance. For this purpose, I have used Hansen & Van der Stede´s (2003, p. 425) items for measuring organizational unit performance. Three of the four items were used (appendix B). The items are of a more relative nature, and they include both internal and external aspects of performance. An aggregate score across the three items will be calculated to form the measure of performance. Self-reported measures are of course not without issues as they are likely to be more prone to biases than objective measures. The Dunning-Krueger effect (Dunning, 2011) is a known bias in which those who underperform could tend to overestimate their performance, and vice versa. Social desirability bias (Fisher & Katz, 2000, p. 105-107) is another relevant theory, where respondents self-reporting tends to answer in ways that are socially desirable. I.e., biases and their affects could be at play, shifting the results in certain directions. What makes this measure more desirable is its simplicity and comparability. Except for considering for certain biases, the aggregate of internal and external measures items is easily comparable, as a higher score corresponds to "higher performance" without having to make exceptions for

business sectors, company size, organizational structure etc. Employing this strategy also allowed me to offer complete anonymity, as I was not required to collect specific company data and relate to responses.

3.4.3.5. Antecedents of budgeting choice

In my model I have reasoned for certain control factors for budgeting choice. With this approach these control factor could also be seen as certain antecedents of budgeting practice choice. The four control factors/antecedents in my model are: volatility, company size, business sector, and use of rolling forecasts. All antecedents are predicted to have an association with budgeting choice. This is not an exhaustive model of antecedent for budgeting choices, as this is not the scope of the research.

Volatility

All businesses probably feel some degree of volatility, and the last year has probably been more unpredictive than usual. However, this is variable from business to business, and a range of factors could affect how volatile of an environment a business is operating in. For the volatility measure I have gathered the respondent's subjective judgement on how volatile their business environment is compared to their competitors. The item applies a 7-point Likert type scale (appendix B). Experience of volatility is within itself a subjective measure, thus a subjective item was deemed appropriate. Use of a singular item is more prone to the biases of Likert-scale subjective measures and should be taken into consideration.

Business size

The size of the business is also thought to have an effect on budgeting format choices. In this context size is defined as size of revenue. For a more detailed discussion of what constitutes company size, see the methodology in sampling the population for this survey, as this in one of the key definitions. The respondents will select from 5 intervals of revenue size (appendix B). All answers are in NOK. Those who answer 1 will be defined as "small" companies. This is roughly within the European commission´s (2020) definition of Small to medium sized enterprises, which is defined as businesses with revenue streams within 50 million EUR. For the purposes of this survey. Further, responses 2-3 will be defined for the purposes of this survey medium companies, while responses 4-5 are defined as larger companies.

1	500m (smaller companies)
2	500m – 1 000m (medium companies)
3	1 000m – 2 000m (medium companies)
4	2 000m – 5 000m (larger companies)
5	5 000m + (larger companies)

Table 1: Size Classification

Rolling budget/forecast

Rolling Budgets are seen as one of the tools to help deal with the rigidity of the annual traditional budget. The general idea is that the budget horizon is decided by necessity rather than on an arbitrary annual basis (Gjønnes & Tangenes, 2016, p. 189). Forecasting could both be seen as a purpose and as an effect of budgeting (Hansen, 2011, p. 289), and they aren't necessarily homogenous. Gjønnes & Tangenes (2016) argue, however, that the budget can be seen as a forecast only if the budget is rid of roles it is not suitable to maintain. The distinction between rolling budgets and forecasts can be difficult, as the terms can be used somewhat indiscriminately. Consequently, there is a chance that the two terms are used indiscriminately in practice as well. Even though there potentially is an important distinction between the two terms, for the purposes of this measure it is of less importance. The measure is first and foremost to give an indication of whether budgets, forecasts or both are updated continuously, identifying those who apply less rigid systems. The item used to measure this variable was a simple yes/no scale in whether or not rolling budgets/forecasts are applied.

As many regards rolling budgets/forecast as closely related to beyond budgeting philosophy (Gjønnes & Tangenes, 2016, p. 289), raises the question of why this item should be included as well as the variable distinguishing budgeting practices? Firstly, use of rolling budgets/forecast do not equal adopting a Beyond Budgeting philosophy. It is still possible to be heavily relying on the principles of traditional budgeting while updating the budget more often than annually. Secondly, only using this as a measure for budget practice would not be sufficient, as extensively discussed, budgeting practices has a larger span than only traditional budgeting or beyond budgeting. Additionally, this variable is devised as a control variable to budgeting formats, rather than to report on budgeting format within itself. An interesting question however, is whether the use of rolling budgets/forecasts affect budgeting format or if the relationship is the other way around.

Business Sector

The Last antecedent to budgeting format included in this survey was business sector. The survey asks which business sector the respondent classify themselves within. The alternatives used are from the European Commission´s (2008) NACE statistical classification of economic activities in the European community. One slight alteration made to this classification, is that I highlighted extraction of oil and gas as a separate alternative (separating from mining and quarrying) as this business sector is especially prevalent in the Norwegian economy.

3.4.4. Population and sampling methodology

Initially the population was thought to be the entire population of Norwegian businesses. However, as neither this group nor the budgeting terminology are homogenous, it made sense to attempt narrowing down to a group which was more likely to have a more homogenous conception of budgeting practices. In an effort to hit common ground I have focused on business professionals who would be likely to be close to budgeting decisions. Two main criteria were set to establish contact with relevant respondents: company size and the position of the respondents in the companies. In theory this would limit the population to Norwegian businesses of a certain size. The theory of this reasoning is that larger companies, with veteran executives, would be more likely to have a mutual perception of budgeting systems than if we were to include all businesses. By excluding smaller businesses, the population for my study became medium – large sized businesses, with management of a certain experience. A discussion of what constitutes business size is presented below.

3.4.4.1. Company size

Company size is an important variable for determining the population for the survey. I wanted the businesses for the population to be of a significant size for more than one reason; Firstly, the amounts budgeted would be substantial. With cashflows of a certain complexity, businesses would be more likely to emphasise certain management tools, for example the budget. Secondly, it would be more likely that the people behind the budgeting process are comprised of budgeting professionals. As companies reach a certain size it is likely that the people in charge of the final budgeting decisions either have long tenure and experience with economics, business and the budgeting process, or they are likely to have a relevant education where the budgeting process has been elucidated thoroughly. In many instances, both are likely to be true. Thirdly, a fair assumption of companies of a certain size, would be that they

are more likely than smaller businesses to have a long-term plan, or at least it could possibly be more comprehensive. Whether the budget is treated as a plan or not, it has some form of a forward-looking aspect. It is likely that businesses of a certain size employ some kind of management tool or technique to deal with future contingencies.

There are many facets that can determine the size of a company. For example, when determining definitions for small to medium sized enterprises, the European commission (2020) use the head count of employees, total revenues, and total balance sheet value. Another obvious indication of size could be the market value of a company. However, market value could be much more complicated to calculate, especially for companies that are not publicly traded. In determining the population for my survey, I have mainly focused on revenue as a size-factor. To begin with I set a minimum cap of 1 billion NOK in revenue streams as a determinator of an acceptable business size. This would ensure that the companies in question would have a significant stream of values, increasing the likelihood of budgetary emphasis. However, I also made an exception to this minimum cap. I have included companies publicly traded on the Norwegian marketplaces Oslo Børs, Euronext Expand Oslo and Euronext growth Oslo, who do not meet the minimum revenue stream. Of course, many of the companies listed on these stock exchanges already exceed 1 billion NOK in revenue streams. I wanted to include these businesses even though they do not exceed the minimum cap as the cap is a rather "arbitrary" cap merely to ensure that the businesses have substantial values allocated in budgeting processes. The companies listed on these exchanges has other qualities to ensure that they would be appropriate for my survey. To be listed on the Norwegian stock exchanges there are a set of requirements that has to be fulfilled to be, albeit Euronext Expand and Euronext Growth exchange has significant alleviations compared to Oslo Børs. However, they still need to meet some general requirements in regard to financial reporting, management, liquidity, business practice, etc. (Oslo Børs, 2020). These requirements and the addition of transparency make these companies relevant for the survey.

To begin with, I used Proff.no (2021[a]) to perform a search of companies listed in Norway with total revenue exceeding 1 Billion NOK. Proff.no receives all their information from Brønnøysundregistrene, a Norwegian public registry for Norwegian companies (Proff, 2021[b]). The search only included financial statements for 2019 as most companies had not released financial statements for 2020 at the time of the search. This initial search produced 829 results. As many of these were non-profit organisations, and many other were subsidiaries of

other larger companies, I wanted to narrow it down. Using Kapital´s list of the 500 biggest Norwegian companies (Næss, 2020) I cross-referenced the two list and removed non-profits and most of the direct subsidiaries. This left me with a list of 613 companies. From the Norwegian stock exchanges Oslo Børs, Euronext Expand and Euronext Growth I found another 156 companies that I wanted to include even though they did not meet the initial 1 billion NOK revenue cap. In total I had a list of 769 potential companies for my survey.

A fallacy of restricting the population to a certain revenue value, is including businesses that has high turnovers relative to other size factors, while consequently excluding businesses that have low turnover relative to other size indicators. Some of these businesses are of course included through opening for smaller businesses listen on the Norwegian stock exchange. However, the most important aspect of this selection process is to receive a big enough sample. Businesses with slightly bloated revenue streams compared to other size characteristics, still handle substantial cash flows. A more detailed review of the samples generalisability is presented in the end of this segment.

3.4.4.2. The Respondents

As stated, I wanted the respondent to be budgeting professionals. With this I expect the respondents to have first-hand experience with the budgeting process, before, during and after. In cases where businesses do not use budgeting as management tools, presumably the management still has relevant knowledge about budget processes. The importance of having respondents with extensive knowledge about budgeting is reasoned in considerable differences in budgeting practice. I will be more likely to bridge the gap and achieve a common budgeting terminology in my survey if the respondent also has extensive knowledge about the budgeting literature or practice. The 769 potential companies have all the company criteria in place, the next phase was to elect who to survey from these companies. I chose to focus on the executive management. The organizational structures do, of course, differ amongst the population. However, I have selected to focus on Chief Executive Officers (CEO), Chief Financial Officers (CFO), Chief Operational Officers (COO), production managers, and other managers with strong ties to either finance, management, operation or production. CEOs and other high-level management are assumed to make final budgeting decisions, and thus will ordinarily have to engage in the budgeting process. CFOs and other financial management are assumed to have some of the same responsibilities. In many cases they could be integral in developing and maintaining budgeting systems. Managers in charge

of operations or productions are thought to have one foot in both camps, as they could be part of the development but also have a part in achieving budgeting results. The key takeaway from this is that the respondents in the population should have: a) A role in development of budgeting systems, and b) A real opportunity to affect the budgeting outcome. A difference from middle management and other subordinates, is that they are not likely to take part in development of the budgeting system. They could participate in part, by for example suggestions or budget discussions with superiors, however, they are not likely to have the same direct effect. They could of course also impact budgeting outcomes, however they do not have the same opportunity to redirect operations or finances as executive management. Thus, executive management were the focus respondents for the survey.

3.4.4.3. Sample

My entire population was 769 companies, and if we assume they each have 3-5 relevant executive managers each the total population was about 2 000 – 3 000 managers of companies either with a sizable 1 billon NOK revenue stream or listed on a public stock exchange. To obtain a relevant sample of a population there are multiple schools of thought. Bell et al., (2019, p. 195-197) generally suggest that the sample becomes more precise the larger sample one obtains. Hair, Black, Babin and Anderson (2019, p. 278) argue that a sample can become overly sensitive also if becomes too large, small samples however, run the risk of lacking any statistical power (Hair et al., 2019, p. 30). For Samples to be "too large" it would be in the thousands, which is not realistic with my population or approach. Conversely, the goal was to achieve as large sample as possible. Samples do generally achieve more generalisability with more observations (Bell et al., 2019, p 196), with a sample of 100-300 of a population of 2000-3000, this would entail respondence of around 10 %. Although these can be seen as an adequate sample size, concerns of its representativeness should always be raised.

There was a couple of challenges with achieving this threshold for sample size. Firstly, there were some issues with the sampling methodology. Secondly, issues with non-response. A prevalent method for sampling is simple random sampling, where each member of the population has an equal chance of getting picked at random (Bell et al., 2019, p. 191). This would be appropriate methodology. However, as I did not have the contact information for the entire population, I could not select entirely random. The contact information for the executives was retrieved from companies' websites. Far from every company display direct contact information for executive management. In other words, it was not possible to retrieve

the observations completely at random. The other challenge is that of non-response, it is not very likely that all of those who was selected for the sample would respond (Bell & Harley, 2019, p. 197). I would not be able to select 300 respondents and receive complete responses. Online surveys have notoriously low response rates, Bell et al. (2019, p. 240-244), argue that online surveys can except as low rates as 10-20 %. To achieve a result of about 100 - 200 observations, I would most likely have to sample somewhere about 1 000 executive managers to achieve a usable sample.

As mentioned, it was not possible to pick the sample completely at random. The result was a quasi-random selection. I reviewed all 769 of the company's websites to obtain direct contact information to executive management. This resulted in only 724 E-Mail addresses, a little shy of my 1 000-sample target. The Survey was sent to all addresses available, and I received the results depicted in table 2.

Theorised Population	2000-3000
Total Sample	724
Responses	173
Response rate	24 %
Completed responses	159
Real Response rate	22 %

Table 2: Response Rate Overview

3.4.4.4. Sampling errors

It is quite rare or near impossible to end up with perfect representativeness within in a sample (Bell et al., 2019, p. 202). My study is of course not any exception. There is no guarantee that the 22 % response rate from executive managers are representative for the entire population of larger, structured, Norwegian businesses. Firstly, as alluded to before, there is probably a higher degree of heterogeneity in the group, as budgeting practices may differ among businesses. With more heterogeneity in a group, the sample size should be larger (Bell et al., 2019, p. 197). As my sample size is in the lower end, this could affect the representativeness of the sample. Secondly, another factor affecting the generalisability of the survey, are sampling-method and non-response. The sample did not follow a completely random selection method, as contact information was not available for the entire population. A trend I saw when retrieving contact information, was larger companies did not have contact

information. It is also possible that it was more common practice in some business sectors to have direct contact information available. If patterns like these or other exist in the sample, it could distort the representativeness. Other non-visible patters of who participates could also be at play and should be taken into consideration. When viewing the results from the univariate analysis (More on this is chapter 4), the sample actually displays a fairly even distribution for the control variables, a positive sign for representativeness. However, it is not without its flaws, and whether or not the sample can be generalised to the entire sample of "large Norwegian Companies" can still be inquired.

3.4.5. Statistical Conceptions

Following the data collection, the data will be analysed through statistical software to test the proposed hypothesis. The data will be analysed through univariate, bivariate and multivariate analysis, and especially for the latter certain characteristics are important and, in some cases, assumed for the analysis to be performed. Thus, this part will describe important characteristics for the variates, as well as reasoning for the statistical tools used to test hypothesis.

3.4.5.1. Ordinal, nominal and interval measures.

My model contains only of nominal and ordinal measures. Nominal measures are those who are categorical, the options do not have any observable intrinsic value (Bougie & Sekaran, 2020, p. 199). For ordinal measures we are interested in the intensity of a factor, in these cases we can rank the options meaningfully (Jacobsen, 2015, p. 258). There is also another level of measure: interval or metric. In this scale, the options are natural numbers (Jacobsen, 2015, p. 263), thus the difference between options is accurately observable. The measures in my model have the following characteristics:

Variate	Measure
Size	Ordinal
Volatility	Ordinal
Sector	Nominal
Rolling Budget/Forecast	Nominal
Budget Format	Nominal
Budget Role/Purpose	Nominal
Role/Purpose Satisfaction	Ordinal
Performance	Ordinal
Budget satisfaction	Ordinal

Table 3: Classification of Variates

3.4.5.2. Likert-scale, a metric scale?

An ongoing discussion, which has been a topic for many years, is whether the Likert scale is an ordinal (non-metric) scale or an interval (metric) scale (Carifio & Perla, 2008). The Likert scale is a way of quantifying social constructs, whereas responses are given numbers to represent their meaning (Bougie & Sekaran, 2020, p. 198). However, we do not know the exact value and the distance between them. This leads to the question, is the Likert scale an ordinal or an interval scale, hence the debate, between those of an ordinalist view and those of an intervalist view (Carifio & Perla, 2008). Proprietors of the ordinalist view also believe that because of its non-metric nature, these scales are not appropriate for use in parametric (multivariate) statistics (Jamiseon, 2004). For this project, the Likert-scale is used in an intervalist manner, as the measures are used in statistical method assuming metric varieties. The potential error of this method is also acknowledged.

3.4.5.3. Ordinal scales for multivariate techniques

One of the central grievances of ordinal measure (i.e., Likert scales) is that because of its non-parametric nature, it will not meet the assumptions needed for use of multivariate techniques (Wu & Leung, 2017). Data used in multivariate statistical techniques underly certain assumptions which ensures validity of results, the most fundamental being the assumption that the data is normally distributed (Hair et al., 2019, p. 93-94). However, ordinal scales will typically not be able to fulfil the assumption of a normal distribution because of the more "categorical" nature. This is also the case for Likert-type scales, where the distribution will typically be skewed, or have other symptoms of non-normality (Jamieson, 2004). An example

of this, are biases in which arise when self-reporting performance, possible skewing data one or the other way (Dunning, 2011; Fisher & Katz, 2000, p. 105-107). Some researchers suggest increasing the options in a Likert scale as this has been showed to some degree improve the normal distribution (Wu & Leung, 2017). So, the question remains can Likert-scales (ordinal) be used for multivariate techniques? As they a) are not entirely metric measure, and b) will typically not meet the assumptions for data used in parametric tests. This is still debated, and some will say yes and some no. However, as Norman (2010) point, relevant results have been found on this basis of non-parametric data in multivariate techniques, and it's still possible to find relevant results. Although, results should always be carefully examined, and the methodology well documented, to ensure validity and reliability of the results.

3.4.5.4. Dummy variables

My research inherently has some measures that are more qualitative of nature, in terms of nominal and ordinal measures. However, most statistical methods are based on an assumption of metric measures. A solution is to code categorical values into "dummy-variables", whereas the particular is category is given the value 1 if the condition is true/yes, and 0 if the condition is not true/no (Sahay, 2016, p. 149-150; Hair et al., 2019, p. 112-113).

3.4.5.5. Statistical Tools

This segment will comprise of a brief introduction of the statistical tools utilised. Firstly I discuss why I will apply an $\alpha = 0.05$ for all statistical test performed. Thereafter, I will briefly present relevant statistical tools: In defining variates existing of multiple items an exploratory factor analysis was applied and for examining relationships between variates Chi-Square, Pearson´s correlation coefficient, ANOVA and regression strategies, are tool which was employed. All statistical tests are performed in the statistical software, SPSS.

3.4.5.6. Alpha level

As alluded to, I have utilised an $\alpha = 0.05$. The rather arbitrary use of the 0.05 level in social sciences has been a subject of discussion (Skipper, Guenther & Nass, 1967; Kim & Choi, 2021). Depending on the α level chosen a researcher could invite type 1 errors, whereas the null hypothesis is rejected when it should be confirmed, or type 2 errors when the risk is confirming the null-hypothesis when it should in fact be rejected (Bell et al., 2019, p. 329). With higher levels of significance (which is 0.05 seeing as researchers rarely go beyond this

level) there is a greater chance of type 1 errors, where the null is falsely rejected, and the alternate is accepted without being true. I.e., as 0.05 is in the higher range, there is potentially a higher risk of deeming relationships statistically significant, when they are not. This should be kept in mind when analysing results.

3.4.5.7. Exploratory Factor analysis (EFA)

EFA is a tool which is typically used to define underlying structure among variables in an analysis (Hair et al., 2019, p. 124). Although often used as a means to render large amounts of unidentified variables or items into common factors, it can also be used to analyse fewer items theorised to load on a common factor. In this setting it will be used to analyse the aggregate scores proposed, to explore whether they actually measure a common factor. The items will be tried through a principal component analysis extracting all variance to identify any potential factors and the particular item factor loadings (Hair et al., (2019, p. 139-151).

3.4.5.8. Chi-Square

A common test for two categorical variables is the Chi-Square. The test compares actual observations with that what would be expected would chance alone be responsible for the events (McQueen & Knussen, 2002, p. 151). The test can also report whether there is a significant difference form expected and observed counts. The null-hypothesis is that there is no significant difference, and this is rejected if the Chi-Square test has a significance level < α. It is commonly reported with a contingency table (Bell et al., 2019, p. 325), whereas it is possible to visually analyse where differentiation occurs. The Chi-square does not in itself say anything about the sign or direction of the association, it is merely a test of whether or not association between two variables exist. Because of this Phi (ϕ) or Cramer´s V is often reported subsequently. Phi is computed for two dichotomous variables, and is score between -1 and +1, informing how the variates correlate. Cramer´s V is used for categorical variates with more than two categories, the results is a coefficient which takes on a value between 0-1. As this cannot take on a negative value, Cramer´s V can only report the strength of a relationship, and not the direction (Bell et al., 2019, p. 325). An important assumption for Chi-square test, and thus Phi and Cramer´s V, is the assumption that value of the expected cell should be 5 for at least 80% of the cells, and all cells should have a minimum value of 3 (McHugh, 2012). Other assumptions like independent observations, and independent categories are also emphasised.

3.4.5.9 Pearson´s r

Pearson´s correlation coefficient (r) is a method of examining relationships between interval/ratio variables (Bell et al., 2019, p. 323), otherwise referenced as metric variables. In other words, this method assumes normal distribution. Referencing the above discussion of use of non-metric data in, metric statistical methods, I will utilise ordinal (i.e., Likert-scale items) in metric methods, like the Pearson correlation. The method computes a correlation coefficient with the values of -1 to +1, where a perfect positive correlation (+1) implicates that if one variable increases in value, the other will increase by the same value. The same goes for a perfect negative value, except for a decrease of the same value instead, and a zero value implicates that there is no relationship whatsoever (Bell et al., 2019, p. 323). As a correlation is merely a measure of association between two variables, dependence and interdependence cannot be confirmed.

3.4.5.10. Regression strategies

Regression analysis is a statistical technique to analysis the relationship between a single dependent variable and either one independent variable (simple regression) or several independent variables (Multiple regression) (Hair et al., 2019, p. 265-267). Regression analysis is appropriate when utilising interval (metric) scales, both as the dependent and as the independent (McQueen & Knussen, 2002, p. 169). Regression analysis tries to predict the best straight line following the formula y = a + bx. y = the dependent variable, a = is the constant, bx = the coefficient of independent variable x its value. I.e., a regression predicts the how much of an independent variable that is explained by the dependent. This is a differentiation from the other statistical test discusses, as they only can be used to identify a correlation not a dependent-independent relationship. A regression analysis is usually reported with ANOVA (analysis of variance), as well as the coefficient of determination (R^2). This is a measure that allows us to state the proportion of variation in one variable which can be predicted by another (McQueen & Knussen, 2002, p. 165). These tests say something about how much other non-identified factor explains the variation of the particular variate.

3.6 Ethical Considerations

All research including human “objects” will require the researcher to give attention to ethical considerations and to conduct the study with special care and sensitivity (Yin, 2018, p. 88).

As my research would entail gathering potentially sensitive data about companies from individuals through a survey, it was necessary to consider how to conduct this while still retaining the best interest of all parties. To make sure of sensible interaction with individuals and companies I have mainly followed Diener and Grandall´s (1978) four principles for social and behavioural research. These ask the questions whether there is harm to participants, lack of informed consent, invasion of privacy and if there is deception involved. The Chartered Association of Business Schools (COBS, 2015) guideline for ethics in Business research have also been considered.

Reviewing the ethical considerations in light of my survey I had four main challenges: anonymity of individuals, anonymity of businesses, informed consent about data usage and data management. The anonymity of individuals and companies relates to harm, informed consent and privacy issues. For example, In the questionnaire a question is asked to managers how they rate their businesses performance, although not necessarily sensitive information, there could be potential repercussions if both the business and individual could be identified. Hence, full anonymity was important. To achieve this, the questions also had to be designed so it would not be possible to identify specific companies in the data set. This ensured that not even I, as the only one with access to the data set could identify either companies or individuals. Another challenge is that of informed consent about data usage. The participants would receive a short summary of how I would use the data in my research and would not know exactly how I would manage this data. They would not be able to review how the data was used before publishing either. The respondents would to some degree have to rely in my integrity and honesty to manage the data safely. The last concern was data management. The perhaps biggest challenge was that I had accumulated a long list of contact information to executive management of many Norwegian companies. A list of this sort could potentially enhance the replicability and reliability of this study, as it would be very easy to replicate the methodology. However, attaching this contact information would be a huge breach of privacy, and thus the diminution in replicability is necessary to uphold ethical standards. The contact list was deleted following the completion of data gathering.

In addition to making sure respondents are treated fairly, the field of study and potential readers should also be given respect by referencing correctly to others work as well as declaring any affiliations which might impact the scope of the research (COBS, 2015). To get a fair perception of my possible preconceptions affecting the scope of the research, it is

important to note that my counsellor for this project is one the key contributors of Norwegian Budgeting literature. As the budgeting literature has a couple of different "schools of thought", my affiliation with a key contributor could impact my perceptions on the subject matter, thus the scope of the research.

3.7 Validity and reliability issues.

Preceding this part, I have presented my research plan in detail. Here I will analyse some overall issues of research quality. Issues of validity, reliability and replicability will be brought up.

3.7.1. Internal validity

The biggest threat towards internal validity concerns whether or not what is intended is being measured. Which can be said to be a challenge with both diverse practices, as well an ambiguous definition in the literature. Previous research suggests mixed budgeting methods in practice, as well as academics have different definitions of constructs. Consequently, the challenge is to produce constructs/measures which respondents and researcher reach a mutual understanding, and thus measuring what is intended. To best combat this issue, I have attempted to rigorously report reasoning for constructs and their hypothesised relationships, to enhance construct validity and internal validity. Another issue was the change of budgeting practice classification. However, as the classification was still in line with Ekholm & Wallin´s (2000) framework in which it was originally built on, I assume this is a relevant measure. The main difference is not nuancing between flexible and non-budgeting. However, these two groups are assumed to have many of the same characteristics regarding budgeting. A plan for how to utilise statistical tools to analyse the data was also presented. However, I will apply Likert-scale (ordinal) scales in parametric tools, which can be questionable. I have, however, argued for how this can still be relevant, even though the Likert-scale items will not meet the typical assumptions for interval (metric data). An Alpha level of 0.05 was also applied, which can lead to a higher chance of accepting an alternate hypothesis, although it is not true. These are some important factors to take into consideration when viewing the results of this research.

3.7.2. External validity

Regarding the external validity, there are two main remarks. Firstly, the sample and its representativeness, can this sample be generalised to the whole population of larger

Norwegian companies? Or all Norwegian companies? Or perhaps even on an international level? The short answer is probably no. Some aspects could perhaps be assessed in different settings, however as this is a cross-sectional study of a specific situation at a single point of time. No causation is found, only indications of relationships. Thus, the results will not be directly transferable to other situations. Although, I do believe, some of the findings can be applied, with a critical outlook, at least towards Norwegian organisations. The second remark concerning external validity is to what extent the model is complete. As discussed, there will be a lot of different characteristics of individuals, companies, markets, legislations etc. which also affect the relationships proposed, not included in the model. In other settings, and at other points of time, these not-included variables could potentially be responsible for smaller or larger proportions of the suggested relationships. Conversely, the lack of all factors in modelling should be taken into consideration when applying the results of this research to other cases. This also alludes to a final remark concerning validity. Rarely there is perfect validity, and issues of validity should always be kept in mind when interpreting results.

In regard to reliability issues the most significant source of error, is how the survey is performed, and whether I affect the respondents with the line of questioning or other situational factors. To contest with these sources of error I have discussed the questions thoroughly, additionally most questions are based on established methodology e.g., Likert-scale items and other lines of questioning adopted from peer-reviewed work. I have also attempted to establish my preconceptions for this subject, as well my philosophical perspective, in an attempt to minimise certain biases. In the case of replicability, my research plan and design has been rigorously documented, so that in theory it would be possible to replicate my work to a large extent. However, there are some deviations from this principle. I decided to delete the contact list for the respondents due to ethical considerations. This infers that it would be difficult to replicate and receive the exact sample, however the sample selection process has in turn been documented and is possible to replicate to some degree.

4.0 Results

To begin with I discuss some characteristics with the results of the total sample. Thereafter I have taken a look at some preliminary descriptive statistics from the different variables in the

sample, also called the univariate analysis (Jacobsen, 2015, p. 316). Researchers should always examine the data before any application of multivariate techniques (Hair et al., 2019, p. 49). This is to ensure both a conceptual understanding of the data and their underpinnings. An assumption for many statistical tests is normality. Recalling the discussion in the methodology section, I will apply ordinal measures to statistical tests without the data meeting the assumption of normality. Thus, I will report characteristics like means, standard deviations, skewness and kurtosis, mostly to illustrate the distributions, not to test for the normality assumption. Following this, Bivariate and multivariate techniques are applied to test proposed hypothesis.

4.1. Considerations regarding total sample

From the survey distributed to executive management in Norwegian companies I received 173 responses. As I distributed the questionnaire to 724 managers this resulted in a response rate of almost 24 %. However, 14 respondents in the total sample did not complete their questionnaires. The respondents who did not complete the survey all dropped off somewhere between $^1/_3$ too $^2/_3$ off the way. In some cases of missing data, the cases in question could be salvaged, by looking at the randomness of the missing data (Hair et al., 2019, p. 63). Although, in those cases it is important to examine how much of the data is affected, and if any crucial variables are affected. In this case, the first questions concern antecedents/characteristics and are not the prominent variables for my research project. The important dependent variables are later on in the questionnaire, where the particular respondents already fallen off. If many responses regarding dependent variables are missing, this could artificially increase relationships with independent variables (Hair et al., 2019, p. 62). Since so much was missing in the particular cases and such crucial component, I decided the best option was to delete incomplete responses. This left my sample with 159 respondents, lowering the real response rate to about 22 %.

Another consideration when reviewing a data set are outliers. Outlier or anomalies can be defined as observations with a unique combination of characteristics identifiable as distinctly from what is normal (Hair et al., 2019, p. 85). This consideration is perhaps more important in data sets with even more respondents, and more diverse types of data. However, a type of outlier that are prominent in all types of surveys, are cases where respondents have chosen the same option throughout the survey, perhaps only to complete the survey. I only performed an observational test, as these particular kinds of outliers could easily be identified by observing

the data set. I could not identify any anomalies of this kind. It should also be mentioned that removing outliers from the sample could impact the representativeness (Hair et al., 2019, p. 86). E.g., a respondent only answering the first option on all items could potentially be a representative observation in the sample.

The decrease in response rate does perhaps not appear to be overly upsetting, however it is a significant reduction. The number of total respondents is important as the standard error decreases with larger samples, although less when reaching higher sample sizes (Jacobsen, 2015, p. 300). In other words, for my relatively low total sample, every decrease will be more influential on the standard error, and thus the generalisability. As mentioned in the research design plan, 300-400 respondents appeared to be a good estimate of the numbers I would need to get satisfactory generalisability. However, I knew this would not be probable, only being able to obtain the contact information for about 700 managers. The real sample of 159 is large enough to make statistical assumptions, however it is important to comprehend the vulnerability of lower samples, and how they affect generalisation.

A final question regarding the total sample and real response rate, is that of whether non-response is random? In online surveys, especially those sent through relatively un-personalised e-mail, the response rates are notoriously low (Bell et al., 2019, p. 203). There are many rules of thumb regarding what level of response rate should be obtained to achieve satisfactory levels, however there is also a general consensus that the final sample number is more important than how many has been asked (Bell er al., 2019, p. 237; Jacobsen, 2015, p. 311). Jacobsen emphasises that questions of randomness for the non-response group should be asked. As the survey was anonymous, it is challenging to review this, as I do not know which respondents in the sample has completed the questionnaire. However, as my survey also included item characterising the businesses, these could be uses as a proxy for identifying who has actually responded. As we will see from the results of antecedent/characteristics the distribution between the options is fairly equal. Although this is no definitive evidence of representativeness, merely an indication, it is reasonable to think that the non-response is of a more random character than systematic.

4.2. Univariate analysis

A univariate analysis includes a) exploring distributions for the items, b) analysing means, and variation for the items (Jacobsen, 2015, p. 316). Examining the data before delving into

the analysis is important to reveal what is not apparent when viewing a fresh data set (Hair et al., 2019, p. 45). The assumption for data to be used in statistical techniques will also be review. For the variates comprised of multiple items, factor analysis has been performed to explore if these load on a common factor and can be aggregated. All calculations of the univariate analysis ca be found in Appendix D

4.2.1. Size

"Size" is a variate that in the model is thought as a potential antecedent to Budgeting Format. The variate is also interesting to observe as it includes characteristics of the companies that have responded to the survey. The responses have a fairly even distribution across all alternatives, except a slight anomaly in the group of 500-1000m. Recall the construct definition segment, whereas alternatives 1-2 were dubbed relatively small companies, whilst 3-4 medium-large and 5 as large companies. With this definition we also have a relatively even spread among all sizes of companies. This bodes well for the representativeness of the sample, although not conclusive within itself. The "Size" variate is an ordinal measure, even though it to some degree could be deemed categorical. However, as results can be ranked in a higher/lower fashion, it is defined as an ordinal measure. Test of normality was applied only to illustrate the range of results. The Kurtosis has a high negative value, -1.304, which results in a flat normality curve (Hair et al., 2019, p. 94). The normality curve is slightly shifted to the right with a skewness of - 0.260. This implies that there is a relatively even spread among the option, with a slight tilt towards larger businesses.

		Frequency	Percent
Valid	0-500m	35	22.0
	500-1000m	16	10.1
	1000-2000m	33	20.8
	2000-5000m	35	22.0
	5000m+	40	25.2
	Total	159	100.0

Figure 5: Size Distribution

4.2.2. Business sector

The "Business sector" measure is a strictly nominal, or categorical, variate. There is no logical manner of ranking the responses. Hence, there is no point in interpreting means,

normality, etc. This variate was meant to be an antecedent for format, however because of the low response rate, and the categorical partition, the number of observations will perhaps be too low to make any assumptions about statistical associations. No sector surpasses 30 observations, which is likely too small samples to make significant indices. However, as with "size", the business sector could say something about the representativeness of the sample. 8 of the 16 NACE (European commission, 2008) +1 (extraction of oil gas was added as an independent sector) sectors are represented with 10 or more observations. The survey was intended for larger for-profit companies, so it to be expected that we see less observations for education, health services, and other business sector that typically are operated by government in Norway. Furthermore, when cross-referencing statistics for business sectors that contribute more to BNP (SSB, 2020), larger sectors roughly correspond to sectors with more observations. In other words, it is not entirely coincidental that some sectors are overrepresented in my sample, as my population was companies listed on the Norwegian stock exchange or of a certain size. However, the Oil/Gas sector does not have particularly many observations, despite its prevalence in Norway. The sample is not perfectly represented, but as with size, this prefigures some level of representativeness. In retrospect the entire sample, should perhaps been categorized in the contact list, to make it possible to investigate if any business sectors are particularly over/under-represented.

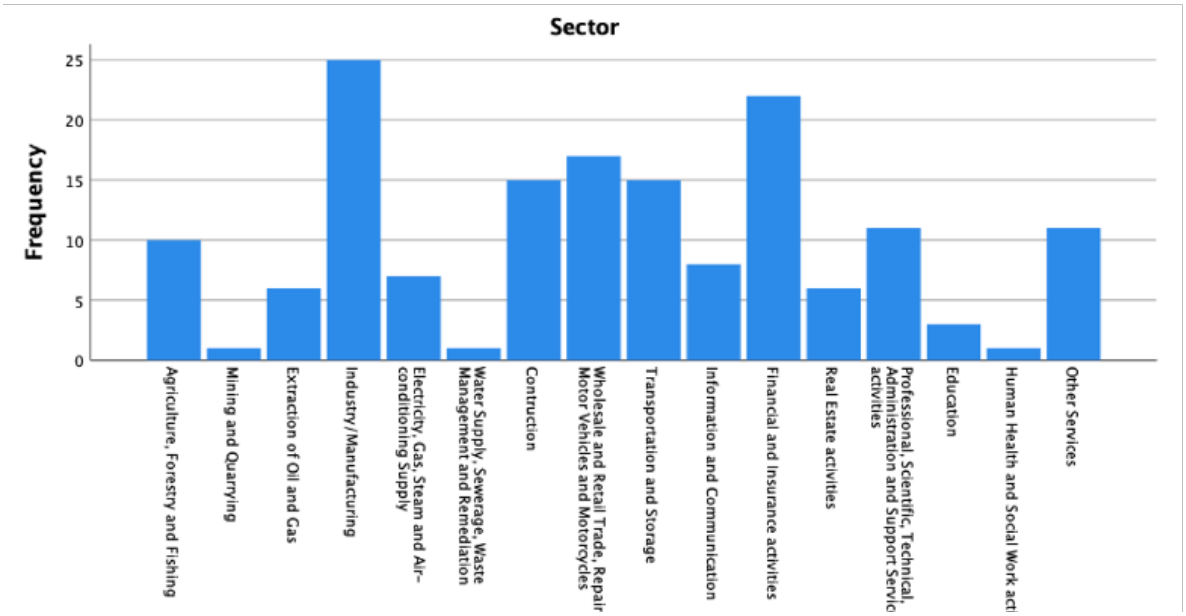

Figure 6: Business Sector, Bar chart

4.2.3. Volatility

The "volatility" variate item follows a Likert-type scale and is thereby at the ordinal level. Respondents were asked how volatile they would rate their business environment compared to the average in Norway. Values closer to 7 indicate more volatility, while values closer to 1 indicate a less volatile environment. For this variate M = 4.62, SD = 1.675. As we can see of Figure 8, the responses lean slightly towards the left, indicating that the sample believe they compete in slightly more volatile environment on average. The skewness and kurtosis of the variate are .245 and -1.160 respectively, indicating a flat normality curve with a slight tilt. The flat curve can also be detected in the relatively high standard deviation.

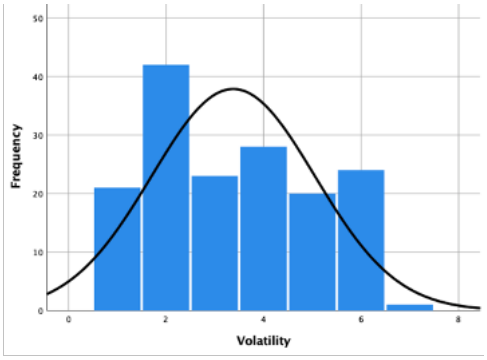

Figure 8: Volatility, Histogram

Volatility		
N	Valid	159
	Missing	0
Std. Error of Mean		.133
Std. Deviation		1.675
Variance		2.806
Skewness		.245
Std. Error of Skewness		.192
Kurtosis		-1.160
Std. Error of Kurtosis		.383

Figure 7: Volatility, Descriptive Statistics

4.2.4. Rolling Budgets

This potential antecedent to Budgeting Format is a dichotomous categorical measure. The options were yes or no. The only Univariate analysis sensible for this type of measure is observing frequencies. Approximately 58 % answered that they apply rolling budgets/forecast, while 42 % answered that they do not

Rolling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	92	57.9	57.9	57.9
	no	67	42.1	42.1	100.0
	Total	159	100.0	100.0	

Figure 9: Use of Rolling Budget, Distribution

4.2.5. Budgeting Roles

The measure for Budgeting Roles is of a nominal nature. In this item respondents were allowed to choose multiple options. For further use in statistical test all categories were computed into dichotomous "dummy-variables", whereas the observations categorised either yes or no (1 or 0) for the particular budgeting purpose. The total frequency statistics are interesting as they give an indication of which budgeting purposes are more popular. Control, Planning and Forecasting are the most common purposes chosen, with around 60% of the managers proclaiming this as their main reasons. The other purposes also have a significant portion of managers selecting them. There were 10 observations where respondents choose "other purposes". The respondents choosing "other" had an option to write and describe what other purpose they budget for. "Capital allocation", or something along these lines, was the only purpose to be requested recurrently, however only by four mentions (Appendix F) . Since relatively few has stated other reasons, and the unsystematic nature of these, I assumed that my initial definitions of budgeting roles has covered most of the range.

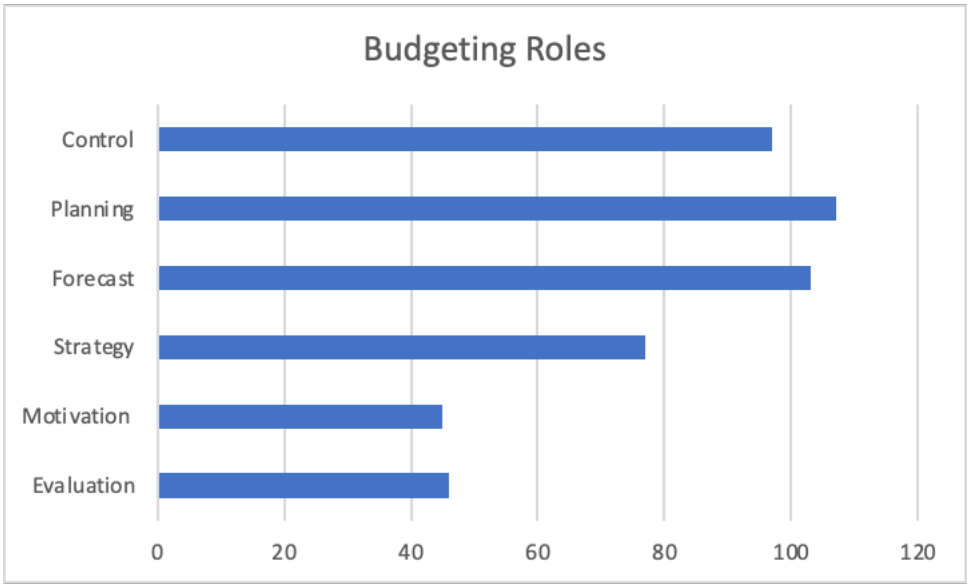

Figure 10: Budgeting Roles, Distribution

4.2.6. Budgeting Roles Satisfaction

All those who picked the particular purposes was asked how satisfied they are with the specific budgeting purpose on a 7-point Likert scale. Those who did not pick the particular reasons were not asked, as it did not appear as a relevant answer if they do not emphasise the purpose. Thus, less popular purposes had less observations. All purposes have distributions

skewed towards the left which infers that in general those who emphasise the particular roles, are mostly satisfied. The Mode of all purposes are 6, denoting a heavy skew against higher satisfaction.

4.2.7. Budget Format

The Budget Format variable was based on an item consisting of five statements supposed to categorise respondents into budgeting format groups. The distribution of the five statements and the distribution of the suggested categories showed that traditional budgeting practices are generally preferred in my sample.

Practice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Traditional Budgeting	42	26.4	26.4	26.4
	Traditional budeting with a little flexibility	73	45.9	45.9	72.3
	Flexible Budgeting	28	17.6	17.6	89.9
	Considering or in process of abandoning Budget	2	1.3	1.3	91.2
	Have abandoned the Budget	14	8.8	8.8	100.0
	Total	159	100.0	100.0	

Figure 11: Practice Item Distribution

FormatCategorised

		Frequency	Percent
Valid	Traditional Budgeting	115	72.3
	Flexible Budgeting	30	18.9
	Beyond Budgeting	14	8.8
	Total	159	100.0

Figure 12: Practice 3 Groups Distribution

In the categorised table, answers 1-2 are considered traditional budgeters, 3-4 flexible budgeters and 5 as those who employ some form of beyond budgeting philosophy. The preference towards traditional budgeting is to be expected as this is consistent with the works of Ekholm & Wallin (2000), Libby & Lindsay (2010). Libby and Lindsay find that about 70-80 percent of their sample answer that they employ traditional budgeting and do not have any plans of abandoning their budgeting systems. The statements in the Format variate were based on Ekholm & Wallins items. The results are corresponding to their results, as there are most observations on the second option, some on the first, and marginal on the other options. Johanson & Madsen (2013), find slightly different results as they find most observations of flexible budgeting, however in their model, flexible budgeting is the whole range of flexibility, whereas I opted to include lower levels of flexibility to traditional practices. Thus, the results for Budgeting Format are comparable to other findings in the budgeting literature.

Although the results were similar to those of other similar studies, there is an issue of the number of observations. With 30 and 14 observations for flexible budgeting and beyond budgeting respectively, these are small samples. If such small samples are used in statistic inquiry, they are vulnerable to validity issues (Hair et al., 2019, p. 30). Seeing that the sample

sizes were so small, I opted to make an alteration to my model. As an alternative to the three categories I decided on a two-way split between those who stick to conservative practices, and those who employ more "radical" budgeting practices. Those who answer 1-2 would be considered "conservative", whereas those who answer 3-5 would be considered "radical". This is in line with Ekholm & Wallin´s (2000) paper where they employ the same classification. The "conservative" group would be the same as originally intended, however the "radical" group would merge two groups. The logic behind merging these groups is that they would be expected to have certain similarities which makes it possible to depict them as a distinct group. They would both be critical of traditional budgeting, which is why they have distanced themselves from traditional practice. In their management systems it´s probable that both groups emphasise flexibility and are critical of rigid systems. To a certain extent beyond budgeting can be said to be a form of flexible budgeting and vice versa. The new "radical" group will not be an entirely homogenous group, however, nor will the "conservative". They do however have certain fundamental similarities which makes it possible to defend this classification. Using this classification allowed for the "radical" sample to be significantly bigger, then if they were to be two separate groups. With the change implemented the sample consisted of 115 "conservative" budgeters and 44 radical budgeters.

FormatConRad

		Frequency	Percent
Valid	Conservative Budgeters	115	72.3
	Radical Budgeters	44	27.7
	Total	159	100.0

Figure 13: Practice 2 Groups Distribution

4.2.8. Budget Satisfaction

The Budget Satisfaction variate exist of three items. These are 7-point Likert scaled satisfied-dissatisfied, designed to measure different aspects of budget satisfaction. The three items were then combined to make an aggregate score. By combining multiple items measuring aspects of the same variable should in theory help reduce extremities and give a more accurate measure of the variable (Hair et al., 2019, p. 160). However, for this to be the case there should be an underlying structure among these items. To examine and to identify this underlying structure an EFA (Appendix E) can be employed (Hair et al., 2019, p. 124). By performing a principal component analysis in SPSS, I found that the three items in question

only have one common factor among them. This is a good sign, as the items appears to only measure on one common component. The next question is how much the items correlate with this component. Correlations/loadings of 0.7 <, are considered to be indicative of well-defined structure (Hair et al., 2019, p. 151). All of the items load 0.7 or higher, towards the common component. Consequently, the items are summated into a single variate.

Univariately examining the Budget Satisfaction measure: M = 5.262, SD = 0.082. With a skewness of - 0.934 the data is skewed towards the left, a kurtosis of 1.078 indicates a peaked distribution. In general, the respondents are satisfied with their budgeting systems. Standard deviation is 1.033 displaying some variance in the sample. These results are to a degree counterintuitive to the reasoning of budget criticism. As most of the sample are traditional budgeters, in theory you might expect the sample to be less satisfied, grounded in the many challenges of traditional budgeting. However, these results are also in line with previous research. For example, Libby & Lindsay (2010) and Hansen & Van der Stede (2004), found that more often than not practitioners are reasonably satisfied with their budgeting systems despite their debated deficits.

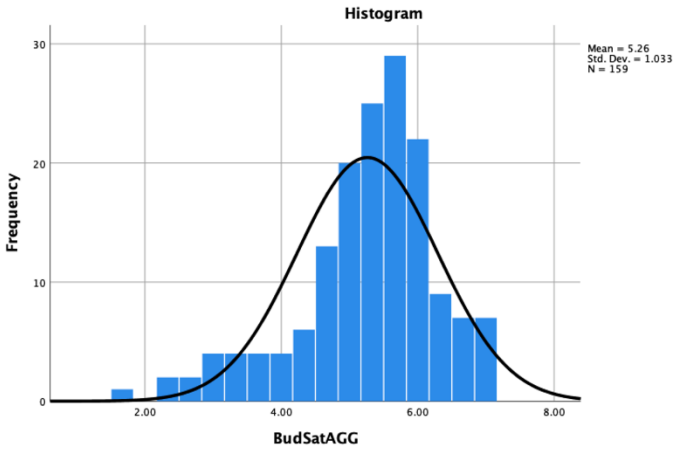

Figure 14: Aggregated Budget Satisfaction, Histogram

4.2.9. Performance

The performance variate consists of three items designed to measure both internal and external aspects of financial performance. An EFA (Appendix E) was used to assess if the items could be aggerated to one factor pertaining overall financial performance. Principal components analysis revealed that the three items only produce one common factor. The component loadings for item 1 and three is above .80 whilst item 2 has a loading of .64.

Recall, loadings of .70 <, are regarded as strongly defined structures. Loadings of .50 < are still considered to be practically significant (Hair et al., 2019, p. 151). As all the loadings are relatively high, I proceeded to summate the items into an aggregate score of financial performance.

When combined into a singular measure the performance measure has a M = 3.677, SD = 0.723. The mean is closer to the items average, and the standard deviation denotes some variance in the sample. The distribution is closer to achieving normality as this is less skewed than most variables is my sample, with a skewness of .571 and a kurtosis of .408. The results indicate that on average the respondents subjectively perceive their performance to be on the positive side. Hansen & Van der Stede (2004), which the measures were based on, recorded similar results, although they averaged even more "positive" observations. Logically, all businesses cannot outperform all other businesses, so a value closer to average could indicate a less biased response. In theory, the mean should be near the middle of the scale if considering all companies. However, the sample is not every business, the sample has certain criteria, and their performance is not known prior to sampling. Thus, a skew towards an "above average" performance is possible.

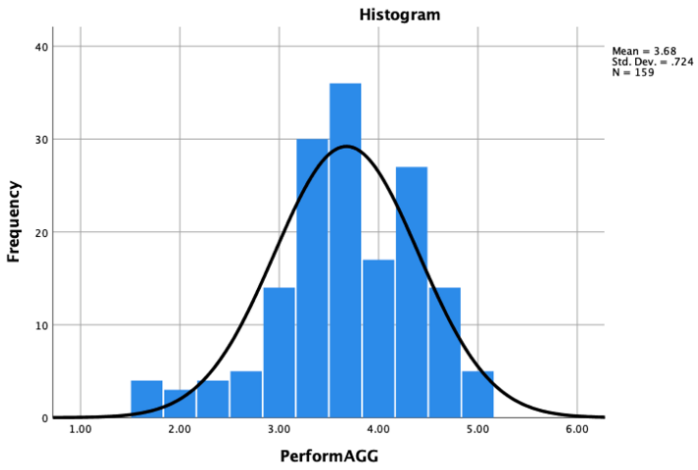

Figure 15: Aggregated Performance, Histogram

As a caveat to the EFA performed to the variables "Budget Satisfaction" and "Performance", EFA is a multivariate technique, assuming certain data characteristics that ordinal data does not implicate. As discussed in the beginning of this chapter, the data is based on ordinal-Likert Scales, and could thus not be appropriate for multivariate techniques. However, to

combine the three measures and receiving one common factor, with relatively high factor loadings suggest that there should be some underlying structure among these items.

4.3. Bivariate and Multivariate Analysis – Hypothesis testing

In this segment I will test the initial hypothesis with the results from my survey. The hypothesis will be analysed by both bivariate and multivariate means. Techniques and tools are used according to the definition of the variates and their assumed relationship with other variates. As a result of altering the "Budget Format" variate following its univariate analysis, the hypothesis will be slightly different from those initially proposed. For instance, in H3 where associations between "Budget Format" and "Performance" are examined, only the sub hypothesis will be changed. Relationships for Conservative/Radical will be tested in lieu of Traditional-Budgeting/Flexible-Budgeting/Beyond-Budgeting. All calculations of Bivariate and Multivariate associations performed, can be found in Appendix G.

4.3.1. HI: Budgeting antecedents have an association with Budget Format

For this hypothesis there are numeral sub hypothesis, testing for relationships between the identified antecedents of budgeting; Size, Volatility, Business Sector and Use of Rolling Budgets, and the two Budgeting formats; Conservative and Radical. Chi-square tests and Pearson´s r are calculated where appropriate to investigate bivariate associations. An important discrepancy from this approach and certain other methodologies, is that these tests are not fit to test any form of causality, it will only reveal whether or not there is a significant relationship or association between two variables. For all the test the null hypothesis (h_0) is that there is no significant association between the two variates in question, while the alternate hypothesis (h_a) is that there is a significant association. For all test I will use a significance level of $\alpha < 0{,}05$. Following the analysis of the antecedents individually, a multiple regression is attempted to integrate all antecedent to the proposed model.

H1.1 Company size has a significant association with Budgeting Format

The Chi-square test performed in SPSS gives the following results: $x^2(4) = 4.416$, $p = 0.353$. The test is not significant at the $\alpha = 0.05$ level, conversely no significant association between company size and budgeting format can be concluded. For visual effect the contingency table can be viewed (Appendix G) and one can see that expected count are virtually equivalent to the observed count. The size measure is considered to me even more categorical than Likert-type scales, conversely less appropriate for use in advanced statistical techniques. Regardless,

a Pearson correlation was also attempted for this relationship (r = 0.143, p = 0.072). This test is also unable to find a significant relationship between the variables.

H.1.2 *Volatility has a positive association with Radical Budgeting*

As the volatility measure is a Likert-type scale and can be argued to be slightly more metric than other ordinal measures, Pearson´s r is also calculated: r = - 0.173, p = 0.029, this indicates a weak negative relationship, albeit significant at the $\alpha < 0{,}05$ level.

Correlations

		Conservative Dummy	Volatility
ConservativeDummy	Pearson Correlation	1	-.173*
	Sig. (2-tailed)		.029
	N	159	159
Volatility	Pearson Correlation	-.173*	1
	Sig. (2-tailed)	.029	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 16: Format (conservative-dummy) Correlation with Volatility

H1.3: Business Sector has a significant association with Budgeting Format

A challenge for this test of associations is the vast number of business sector categories. The Chi-Square test require a certain percentage of the expected counts to be at least 5. For this particular test it is problematic as 62,5 % of the categories have less than 5 expected observations. Conversely, we have to reject the test. However, as some sectors are overrepresented in my sample, I performed the same test for the five sectors that had 15 or more observations from my sample. This would not be definitive evidence of association between Business Sector and Budgeting Format, rather an indication. The results show $x^2(4) = 4.218$, p = 0,377, N = 94. With the alteration, there is still more than 20 % categories with expected counts of less than 5. No inference of an association between sector and format can be concluded. As a sidenote, the contingency table illustrate visually that the expected and observed values are roughly equivalent.

H1.4: Rolling budgets has a positive association with Radical Budgeting

Chi-Square test are appropriate as this is a test of relationship between two dichotomous variates. Chi-Square test resulted in x^2 (1) = 14.32, p = 0,00. This result indicates that there is a significant relationship between use of Rolling Budgets and Budget Format. Thus, H_0 is rejected and H_a, there is a significant relationship between the variates, is accepted. As a result

of accepting the alternate hypothesis, we also want to establish how strong of an association there is. As this is a 2x2 table existing of only dichotomous variables the Phi coefficient (ϕ) is used. ϕ = -0.300, p = 0,00. This indicates a moderate relationship between the two variates. The Phi coefficient is a symmetrical measure and does consequently not specify interdependence.

ConservativeDummy * Rolling Crosstabulation

			Rolling		
			yes	no	Total
ConservativeDummy	0	Count	36	8	44
		Expected Count	25.5	18.5	44.0
	Conservative	Count	56	59	115
		Expected Count	66.5	48.5	115.0
Total		Count	92	67	159
		Expected Count	92.0	67.0	159.0

Figure 17: Format (conservative-dummy)/Use of Rolling Budget Crosstabulation

Relation of antecedent to Budgeting and Budgeting Format

Use of rolling budgets and volatility are the only antecedents to have significant associations with Budgeting Format, although relatively weak relationships. The residual variates are excluded from the overall model as no significant relationships can be concluded. In a regression model with Format as dependent and Volatility and Rolling Budgets as independent variables: β(volatility) = -0.042, p = 0.04, β(volatility) = -0.264, p = 0.00. The models adjusted R^2 = 0.103. The model does explain some of the variation in budgeting format, but there are other factors explaining the other 90 %.

	Budget Format								
Antecedents	**Chi-square (x^2)**	**p**	**p (α) < 0.05**	**Pearson´s r**	**p**	**p (α) < 0.05**	**Phi (ϕ)**	**Cramér´s V**	**Strength of relationship**
Business Size	4.416 (4)	0.353	no	0.143	0.072	no	-	-	-
Business Sector	17.548 (15)	0.287	no	-	-	-	-	-	-
Business Sector Reduced	4.218 (4)	0.377	no	-	-	-	-	-	-
Volatility	-	-	-	(-) 0.173	0.029	yes	-	-	Weak
Rolling Budgets	14.320 (1)	0.000	yes	-	-	-	(-) 0.300	-	Moderate

Table 4: Budget Format associations with Antecedents of Budgeting

4.3.2. H2: Budget Format has an association with Budgeting Roles

For this hypothesis there is a sub-hypothesis for every identified Budgeting Role and its association with the two Budgeting Formats. For Budget Format a dummy-variable depicting "conservative" practice was utilised. These are both nominal dichotomous variates, conversely Chi-Square test have been performed to test for association. Phi coefficient (ϕ)

were calculated to identify the strength of the potential relationships. H_0 for all sub-hypotheses are: there is no significant association between the variables, and is rejected if there is evidence of a relationship. If this is the case H_a is accepted: There is a significant association between the two variates. The results of the test are in table 5.

	Budget Format					
Roles	**Chi-Square (x^2)**	**Significance (p)**	**Significant, α > 0.05**	**H0**	**Phi (ϕ)**	**Strength of relationship**
Control	3.098 (1)	0.078	-	Accepted	-	-
Planning	4.494 (1)	0.034	yes	Rejected	0.168	Weak
Forecast	5.813 (1)	0.016	yes	Rejected	(-) 0.191	Weak
Strategy	0.215 (1)	0.643	-	Accepted	-	-
Motivation	0.932 (1)	0.334	-	Accepted	-	-
Evaluation	5.017 (1)	0.025	yes	Rejected	0.178	Weak

Table 5: Budget Format assosiation with Budgeting Roles.

Control ($x^2 = 3.098(1)$, p=0.078), Strategy ($x^2 = 0.215(1)$, p = 0.643) and Evaluation ($x^2 = 0.932$, p=0.334) all have significance levels above the alpha limit of 0,05, consequently H_0 is kept as there are no significant relationship between the variables. Planning ($x^2 = 4.484(1)$, p = 0.034), Forecast ($x^2 = 5.813(1)$, p = 0.016) and Evaluation ($x^2 = 5.017(1)$, p = 0.025) do all have significant assassinations with Budget Format, thus H_0 are rejected for these, and H_a is accepted instead. Phi coefficients were calculated for Planning ($\phi = 0.168$), Forecast ($\phi = -0.191$), and evaluation ($\phi = 0.178$). The low scores are all classified as relatively weak relationships.

4.3.3. H3: Budget format has an association with Performance

H3.1: Conservative Budgeting has a negative association with performance.
H3.2: Radical Budgeting has a positive association with performance has a positive association with performance.

A test of association was first performed, calculating Person´s r between the Format ("conservative" dummy-variable) and the aggregated performance variate: r = 0.191, p = 0.019. There is a significant correlation between choice of budgeting format and performance, conservative practices correlate positively with performance. The one-way ANOVA also reports a significant difference F(2,157) = 5.935, p = 0.016. A simple regression was performed to test the proposed relationship, of format as a dependent variable of performance: Constant = 3.455, β = 0.308), p = 0.016 . The overall model fit (adjusted) $R^2 = 0.03$. The adjusted R^2 tells us how much the independent variable(s) affects the variation of the

dependent variable. With a measure of 0.03 the budget format does not explain particularly much of the variation in the performance measure. As the measure is dichotomous, the radical measure will have a opposite effect in a simple regression (Constant=3.763, β= -0.308). Thus, both sub-hypotheses will have to be rejected as conservative budgeting has a positive relationship, whilst radical budgeting has a negative relationship with the performance measure. The overall hypothesis can, however, be confirmed, as there is a significant association between Budget Format and Performance.

Correlations

		Conservative Dummy	PerformAGG
ConservativeDummy	Pearson Correlation	1	.191*
	Sig. (2-tailed)		.016
	N	159	159
PerformAGG	Pearson Correlation	.191*	1
	Sig. (2-tailed)	.016	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 18: Budget Format(conservative-dummy) Correlation with Performance

4.4.4. H4: Budget format has an association with Budget Satisfaction

H4.1: Conservative Budgeting has a negative association with Budget Satisfaction.

H4.2: Radical Budgeting has a positive association with Budget Satisfaction.

Similar test as the previous hypothesis where used, as the variates have similar characteristics. The test for correlation revealed: $r = -0.211, p = 0.008$. An ANOVA was performed to test the association between the two variates, resulting in: $F(1,157) = 7.232$, $p = 0.008$. Consequently, with a $p < 0.05$ we can conclude that there is a significant relationship between the two variables. Simple regression with Format (independent) and Budget Satisfaction (Dependent) gave the following results: Constant = 5.614, $\beta = -0.486$, $p = 0.008$. The model fit reports a R^2(adjusted) = 0.038. For the opposite version of the model, with Radical Budgeting as the independent variable: Constant = 5.128, $\beta = 0.486$. With these results both sub-hypotheses are accepted, conservative budgeting has a negative relationship with Performance and Radical Budgeting has a positive relationship with Performance.

Correlations

		Conservative Dummy	BudSatAGG
ConservativeDummy	Pearson Correlation	1	-.211**
	Sig. (2-tailed)		.008
	N	159	159
BudSatAGG	Pearson Correlation	-.211**	1
	Sig. (2-tailed)	.008	
	N	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 19: Budget Format(conservative-dummy) Correlation with Budget Satisfaction

4.4.5. H5: Budget satisfaction has a positive association with Performance

Budget Satisfaction and Performance are both metric-like measures, conversely, they are appropriate for calculating Pearson´s r and for use in regression. The Pearson correlation coefficient was calculated: $r(157) = 0.049$, $p = 0.540$. The significance level is above $\alpha < 0.05$ level, thus there is no statistically significant relationship between the two variates. The null hypothesis of no association is kept. Consequently, there would be no point in performing a regression analysis in an attempt to establish strength and direction of the relationship. The hypothesis that Budget Satisfaction has a positive relationship with performance is rejected.

4.4.6. H6: Budgeting Roles associate with Performance.

All Budgeting Roles were coded into dummy-variables where 1 defines emphasis on the particular role, while 0 depicts no emphasis on the role. Performance is the dependent variable, and metric in nature. As all the roles are independent of each other they can be analysed simultaneously. The Pearson correlation coefficients were calculated for all purposes. The only Purpose to have a significant relationship with Performance was Forecast $r(158) = -0.208$, $p = 0.008$. When entering the Roles in a multiple regression with performance as the dependent variable, with a enter (all independent variables included) approach, this resulted in: $\beta(\text{constant}) = 3.771$, $\beta(\text{Control}) = 0.198$, $p = 0.109$, $\beta(\text{Planning}) = -0.109$, $p = 0.385$, $\beta(\text{Forecast}) = -0.314$, $p = 0.011$*, $\beta(\text{Strategy}) = 0.097$, $p = 0.407$, $\beta(\text{Motivation}) = 0.121$, $p = 0.376$, $\beta(\text{Evaluation}) = -0.065$, $p = 0.635$. The only significant coefficient is that of Forecast. This model reports $R^2 = 0.037$. From an ANOVA ($F(6,152) = 2.016$, $p = 0.067$) the model is not significant at the $\alpha < 0.05$ level. The model was also tried according to a stepwise approach (excluding non-significant variables), which resulted in only

Forecasting being kept: β(constant) = 3.881, β(Forecast) = -0.315, p = 0.008. This model also reports a R^2 = 0.037, however the model is significant according to the ANOVA F(1,157) = 7.121, p = 0.008. Thus, the conclusion is that the only role found to be significantly associated with performance is that of Forecasting.

	Performance		
Roles	Pearson´s r	Sig (2-tailed)	Significant, α > 0.05
Control	0.119	0.136	no
Planning	(-)0.039	0.622	no
Forecast	(-) 0.208	0.008	yes
Strategy	0.056	0.486	no
Motivation	0.094	0.238	no
Evaluation	(-) 0.022	0.782	no

Table 6: Budgeting Roles Correlation with Performance

4.4.7. H7: Budgeting Roles associate with satisfaction

The same logic was applied towards this hypothesis as the previous. A Pearson´s correlation coefficient was calculated for all purposes relationship with budgeting satisfaction. Forecasting and Strategy are the two variates that have significant association with Budget Satisfaction with r = 0.175, p = 0.028 and r = 0.230, p = 0.004, respectively. When computed in a multiple regression model the following values were retrieved: β(constant) = 4.829, β(Control) = 0.102, p = 0.557, β(Planning) = -0.027, p = 0.878, β(Forecast) = 0.400, p = 0.020*, β(Strategy) = 0.515, p = 0.002*. β(Motivation) = -0.147, p = 0.443, β(Evaluation) = -0.270, p = 0.162. Forecasting and strategy purposes are the only significant independent variables at the α < 0.05 level. The ANOVA for this model: F(6,152) = 2.789, p = 0.013, and R^2 (adjusted) = 0.064. Performing the same regression with a stepwise approach, results in excluding all values except for β(Constant) = 4.815, β(Strategy) = 0.455, p = 0.005, β(Forecast) = 0.350, p = 0.036. ANOVA of this model results in F(2, 156) = 6.706, p = 0.002. The adjusted R^2 = 0.067, slightly higher than the original model.

	Budget satisfaction		
Roles	**Pearson´s r**	**Sig (2-tailed)**	**Significant, α > 0.05**
Control	0.024	0.764	no
Planning	0.043	0.592	no
Forecast	0.175	0.028	yes
Strategy	0.230	0.004	yes
Motivation	(-)0.042	0.596	no
Evaluation	(-)0.050	0.531	no

Table 7: Budgeting Roles Correlation with Budget Satisfaction

4.4.8. H8: Budgeting roles associate with one and other

Underlying this hypothesis there are several sub-hypotheses represented in table 8. All variates are dichotomous measures consisting of the coding 1 (yes), 0 (no), conversely Chi-square test were performed. Phi (ϕ) coefficients were, calculated, which in the case if dichotomous dummy variables are equal to Pearson's r. The test was also applied to relationships not hypothesised, to identify potential other significant relationships. Only three of the hypothesised relationships had significant associations: Planning/Control (ϕ/r = 0.211, p = 0.007), Control/Motivation (ϕ/r = 0.245, p = 0.002), and Forecast/evaluation (ϕ/r = 0.209, p = 0.008). All have relatively weak positive relationships, albeit significant. Consequently, the particular sub-hypotheses are accepted. For the other hypotheses, the null of no significant association is kept, and thus we have to reject all propositions of theorised relationships. Examining other relationships, the following significant relationships were found: Control/Evaluation (ϕ/r = 0.197, p = 0.013), Motivation/Evaluation (ϕ/r = 0.307, p = 0.000), Strategy/Motivation (ϕ/r = 0.173, p = 0.029), and Strategy/Evaluation (ϕ/r = 0.159, p = 0.045).

	Factor 1	Factor 2	Predicted Sign	Chi-Square	Phi or Pearson´s R	Significant α < 0.05	Hypothesis
	H8 Sub-Hypotheses:						
H8.1.	Planning	Control	+	x^2(1) = 7.165, p = 0.007 (*)	ϕ/r = 0.211, p = 0.007 (*)	yes	Accepted
H8.2.	Planning	Motivation	+	x^2(1) = 1.946, p = 0.163	ϕ/r = 0.111, p = 0.163	no	Rejected
H8.3.	Planning	Evaluation	+	x^2(1) = 0.127, p = 0.722	ϕ/r = -0.028, p = 0.722	no	Rejected
H8.4.	Control	Motivation	+	x^2(1) = 9.518, p = 0.002 (*)	ϕ/r = 0.245, p = 0.002 (*)	yes	Accepted
H8.5.	Forecast	Evaluation	+	x^2(1) = 6.953, p = 0.008 (*)	ϕ/r = 0.209, p = 0.008 (*)	yes	Accepted
H8.6.	Forecast	Strategy	+	x^2(1) = 0.496, p = 0.481	ϕ/r = 0.056, p = 0.481	no	Rejected
H8.7.	Forecast	Motivation	-	x^2(1) = 0.098, p = 0.754	ϕ/r = 0.025, p = 0.754	no	Rejected
H8.8.	Forecast	Planning	-	x^2(1) = 0.903, p = 0.342	ϕ/r = 0.074, p = 0.342	no	Rejected
H8.9.	Forecast	Control	-	x^2(1) = 0.542, p = 0.461	ϕ/r = 0.058, p = 0.461	no	Rejected
	Other Significant results:						
	Control	Evaluation	none	x^2(1) = 6.188, p = 0.013 (*)	ϕ/r = 0.197, p = 0.013 (*)	yes	
	Motivation	Evaluation	none	x^2(1) = 15.017, p = 0.000 (*)	ϕ/r = 0.307, p = 0.000 (*)	yes	
	Strategy	Motivation	none	x^2(1) = 4.782, p = 0.029 (*)	ϕ/r = 0.173, p = 0.029 (*)	yes	
	Strategy	Evaluation	none	x^2(1) = 4.012, p = 0.045 (*)	ϕ/r = 0.159, p = 0.045 (*)	yes	

Table 8: Overview Hypothesis 8: Budgeting Roles Associate With Each Other

5.0 Discussion

In this part the results are compared to initial proposed relationships and theory. Disparities from proposed relationships will be commented and discussed. The discussion will include

possible explanations, based on theory and methodology. In the analysis I will deviate slightly from the overall model. Rather than strictly following the list of proposed hypotheses, the key variates, in terms of the research question, are highlighted. Firstly, the antecedent/control variables and their relationship with Budgeting format will be analysed, thereafter the crucial variates of Budgeting Roles and Budgeting Format will be discussed in turn. An overview of the results from hypothesis testing is provided in table 7 below:

Hypthesis:	Primary Results	Sub-Results	Significant Findings
HI: Budgeting Antecedents has an association with Budget Format	Partly Accepted		
H1.1: Company size has a significant association with budgeting formats	-	Rejected	-
H1.2: Volatility has a positive association with Radical Budgeting	-	Accepted	0.173*
H1.3: Business Sector has a significant association with budgeting formats	-	Rejected	-
H1.4: Rolling budgets has a positive association with Radical Format	-	Accepted	0.3**
H2: Budget Format has an association with Budgeting Roles	Partly Accepted		
H2.1: Conservative Budgeting has a postive association with Control	-	Rejected	-
H2.2: Conservative Budgeting has a postive association with Planning	-	Accepted	0.168*
H2.3: Conservative Budgeting has a postive association with Motivation	-	Rejected	-
H2.4: Conservative Budgeting has a postive association with Evaluation	-	Accepted	0.178*
H2.5: Radical Budgeting has a positive association with Strategy	-	Rejected	-
H2.6: Radical Budgeting has a positive association with Forecasting	-	Accepted	0.191*
H3: Budget Format has an association with Performance	Partly Accepted	-	
H3.1: Conservative Budgeting has a negative association with performance	-	Rejected	0.191*
H3.2: Radical Budgeting has a positive association with performance	-	Rejected	(-)0.191*
H4: Budget Format has an association with Budget Satisfaction	Accepted	-	
H4.1: Conservative Budgeting has a negative association with Budget Satisfaction	-	Accepted	(-)0.211**
H4.2: Radical Budgeting has a positive association with Budget Satisfaction	-	Accepted	0.211**
H5: Budget Satisfaction has a positive association with Performance	Rejected		
H6: Budgeting Roles associate with Performance	Partly Accepted		
H6.1: Control has a negative association with Performance		Rejected	-
H6.2: Planning has a negative association with Performance		Rejected	-
H6.3: Motivationl has a negative association with Performance		Rejected	-
H6.4: Evaluation has a negative association with Performance		Rejected	-
H6.5: Forecasting has a positive association with Performance		Rejected	(-)0.208**
H6.6: Strategy has a positive association with Performance		Rejected	-
H7: Budgeting Roles associate with Satisfaction	Partly Accepted		
H7.1: Control has a negative association with Satisfaction		Rejected	-
H7.2: Planning has a negative association with Satisfaction		Rejected	-
H7.3: Motivation has a negative association with Satisfaction		Rejected	-
H7.4: Evaluation has a negative association with Satisfaction		Rejected	-
H7.5: Forecasting has a positive association with Satisfaction		Accepted	0.175*
H7.6: Strategy has a positive association with Satisfaction		Accepted	0.230**
H8: Budgeting Roles associate with one and other	Partly Accepted		
H8.1 Planning has a positive relationship with Control.		Accepted	0.211**
H8.2 Planning has a positive relationship Motivation.		Rejected	-
H8.3 Planning has a positive relationship with Evaluation.		Rejected	-
H8.4 Control has a positive relationship with Motivation		Accepted	0.245**
H8.5 Forecast has a positive relationship with Evaluation.		Accepted	0.209**
H8.6 Forecast has a positive relationship with Strategy.		Rejected	-
H8.7 Forecast has Negative relationship with Motivation.		Rejected	-
H8.8 Forecast has Negative relationship with Planning.		Rejected	-
H8.9 Forecast has Negative relationship with Control.		Rejected	-

Table 9: Summary of Hypothesis Testing

5.1 Antecedents of Budgeting Format

Use of rolling budgets and volatility are the only antecedents found to have relationships with budgeting format. In both cases a negative relationship with conservative practices were found. I.e., less volatile environment, and refraining from use of rolling budget are associated with conservative practice. The relationships found were significant, however both of a relatively weak character. When implementing the two significant variates into a regression modelling the R^2 implicated that the two variables explain as little as 10 % of the variation of

budgeting format. Which implies that there are factors which explain far more than these particular factors.

The association with rolling budgets was as theorised, although a stronger relationship perhaps was expected. As alluded to more radical practices are typically associated with continuous budgeting in the literature, as well as the hallmark of traditional budgeting is its low flexibility. Thus, it is actually surprising to find that so many in the conservative group report that they employ rolling budgets. In examining the crosstabulation closer (appendix D), the most conservative group does utilise rolling budgets less, while those with a slight degree of flexibility actually report that about 2/3 utilise rolling budgets. In this sense, the merger of this group may have suffered from some conceptual overlap. However, if the groups were to be more accurately defined, this would still evidence for rolling budgets being associated with more flexible or radical practices. Another perspective on this relationship is the direction of dependence. Some of these findings have raised the suspicion that use of rolling budgets perhaps is a product of budgeting practice choices, rather than the other way around. If a regression analysis is performed with Rolling Budget as the dependent variable: β(Constant) = 0.487, $p = 0.000$, β(Radical) = 0.331, $p = 0.000$ depicting a picture of another plausible modelling. This was not further explored only presented as a plausible explanation. It does of course, appear to be a fair assumption that use of rolling budgets, could be a product of budget format choice.

Companies with more radical practices were assumed to experience more volatility, as more flexibility would be a possible solution for this. One of the main criticisms of conservative budgeting is its rigid format, and its low flexibility. Critics, and especially BB proprietors believe this results in low adaptability and is not appropriate in volatile environments (Hope & Fraser, 1997, 2003[a], 2003[b], Bogsnes, 2016). The results confirmed this hypothesis, albeit with a relatively weak relationship. As this is not a causal study, and the relationship is of such a weak character this finding cannot be said to explain to much. Nevertheless, it can be viewed as an indication of a relationship. A possible explanation for such a weak relationship could be that many businesses opt for less radical budgeting systems, even in more volatile times, as this could be viewed as the safe option. Especially if they already are satisfied with the budgeting systems. This some of the general findings in budgeting literature (e.g., Libby & Lindsay, 2010) businesses are generally satisfied with budgeting systems, despite its

criticism. Status quo could be a preferred option, especially for those who experience less volatile environments.

For the Size relationship, it was to some extent a more exploratory approach, as there was no theoretical logic implying that any particular company sizes should be more disposed to adopting radical practices. The guess was however that the smallest (as they are potentially more experimental), as well as the largest (more resources to explore) could lean more often that others toward radical practices. No evidence of any significant associations where found, as the format was more or less evenly spread across all size brackets.

There were no significant associations found between Budgeting Format and any business sector, even when we reduced the sample, to only those with 15 or more observation. This proposition was also of an exploratory nature, as no theorised hypothesis was developed. However, a guess of businesses associated with intangible a more intangible value chain (e.g., information, communication), and those with more tangible value chain (e.g., traditional industry, production), would emphasise radical and conservative practices, respectively. Nevertheless, this would most likely differ greatly within sectors as many "traditional" industries these days also comprise of intangible assets. As a concluding remark in this regard, visually inspecting the contingency table (Appendix D) does display some slight differences, although not of a significant level. This slight difference, points to traditional industry favouring conservative practice, like Hansen & Van der Stede (2004), also find. However, the sample of specific sectors are marginal, and this is not generalisable. It would be interesting to see if a larger sample would be able to produce any evidence of certain business sector leaning more towards budgeting practices.

There are a number of antecedents of budgeting practices that could have been tried, as well as some variables could be improved by adding multiple items, to depict the respondents more rightfully. However, these variables were first and foremost a type of control variables to examine representativeness in my sample. It was interesting to see however how potential antecedents could determine budgeting practice. The significant relationship found indicates potential predictors of budgeting format. A relatively small sample size, and the potential conceptual overlap could have been hurtful towards my findings. Conceptual overlap will be a recurring issue for the analysis, which will be discussed further towards the end. It would

have been interesting to see a refined study with a large sample targeting antecedents to budget formats.

5.2 Budgeting Roles

5.2.1. Relation to Format

Analysing for association between budget format and budgeting roles, there was three significant relationships found. Forecasting was found to have a weak, significant relationship with radical practices, while planning and evaluation were found to have weak, significant relationships with conservative practices. These findings were as predicted, however, motivation, strategy and control not associating with any particular budgeting practice was not expected. Grounded in the literature control and motivation were anticipated to relate to conservative practice, however no significant evidence of these relationships was found.

Control is one of the more emphasised roles, with 97 observations, almost 2/3 of the respondents. As there is no significant association with one or another practice, the results point to this being important for both. In the survey the control purpose was defined to control expenditure and to directly control subdivisions and subordinates' actions. A budgeting role of this sort would more than likely be labelled conservative in the eyes of budgeting critics. Both for its rigidness, and its top-down control notion. More radical budgeting systems like BB typically distance themselves from strict control systems, because they believe in a more autonomy emphasised approach (Bogsnes, 2016). Thus, radical systems were though to not emphasise this control function as much. However, in the end of the day budgeting systems are management systems, which usually are in place to assert some form of control. Consequently, a form of conceptual overlap may have occurred, as a more general sense of control could have been pooled into this option. It is also plausible, that those who do not strictly employ BB, apply some traditional roles in their budgeting systems.

Motivation on the other hand, is the least prevalent role in the survey. The motivation role is typically thought of as being a trait of conservative practices, and Beyond Budgeting proprietors like Bjarte Bogsnes (2016), Hope & Fraser (2003) are particularly sceptical to motivational aspects of budgeting. However, no result of relation to one or the other practice was found. The results may point to that relatively few actually apply budgeting targets as motivations means, as the proportion of those who emphasise the motivational aspect are

equally low among both groups. It could also be a results of traditional budgeting adapting, whereas some of the problematic roles are less emphasised, while the budgeting systems is still characterised by other traditional standards, this would be in line with Jensen (2001), arguing that budgeting still has its place, however without linking budgetary targets to incentive systems. Viewing the crosstabulation of motivation/format (Appendix D) it is peculiar that a proportion (about 25 %) of the radical group actually answered emphasis on motivation, given its counterintuitive nature. The emphasis could perhaps be on relative performance measures, whereas other considerations are made as possible fix for this role. However, the definition explicitly states that the role infers linking reward system to budgetary goals. In my view this contradictory finding further evidences a degree of conceptual overlap.

Strategy was thought to have an association with more radical practices, conceived to be the results of more "complete" budgeting systems. However, there was no significant findings that can support this. The strategy emphasis was approximately equal in both groups, relative to group size, with a roughly 50/50 split. A possible explanation is that moving from conservative practice to radical, does not have to include a change in how to communicate strategy. The reasons for change could be more towards other criticism of traditional budgeting, and the strategy aspect is a secondary concern. Also, both formats have ties with strategy, only different notions of strategy. Bogsnes (2016) classifies traditional budgeting as top-down, while he considers BB to have a more bottom-up strategy. Bhimani et al. (2008) describe a strategy role with a focus of expressing management's goals and plans to employees (top-down). In other words, an emphasis on strategy is a viable emphasis for both groups. Strategy could be communicated through other means than the budgeting system, thus the emphasis on strategy and communication through budgets could equal despite different budgeting practices.

Planning and evaluation were as theorised associated with traditional practices. These results further validify the constructs of planning and evaluation. Interestingly there are a substantial proportion of radical budgeters who empathises these roles as well. Again, I will cite conceptual overlap as a possible explanation. The definitions of Planning and evaluation were based on Gjønnes & Tangenes (2016, p. 219), portrayal of relationships between goals, plans and budgets. Systems where Goal = Budget → plans (plans are evaluated to meet goals), and Goal → Budget = Plan. Both are typically associated with more traditional budgets. However,

they emphasise that the same roles can be applied without role conflict however as forecasts = Goal → Plan →Budget. The reason for bringing up this discussion is that both planning, and evaluation can be applied without the role conflicts of traditional budgeting. However, in the definition they were especially meant to replicate these conflicts. Thus, conceptual overlap is a possible explanation for why many radical budgeters still report emphasis on planning, even though it is defined as equalling the budget, and evaluation even though it is defined as evaluating to meet the budgetary (goal).

Forecasts have a significant positive relationship with radical budgeting practices. This is a natural finding, as one of the concepts of moving from traditional to more radical practices are to treat budgets more as forecasts rather than plans. Interestingly, a fair proportion of the conservative group also report forecasting as an important role. This fact could have contributed to the relatively weak strength of the relationship. In the literature more traditional practices would not typically be associated with using the budget for forecasting purposes, as many of the traditional characteristics would be counterintuitive in combination with forecasting (Gjønnes & Tangenes, 2016, p. 244). A possible explanation is that many use forecasts without as strict assumptions as Gjønnes & Tangenes propose. It is possible that the budget is being used as plan, while employing separate forecasting. This, however, would be counterintuitive to the theory and definitions, as the budget cannot fulfil the role of a plan and a forecast simultaneously. Consequently, there is likely to be some conceptual overlap in regard to this measure as well.

5.2.2. Roles and Performance

Overall, there was only one significant finding regarding this relationship, and this is somewhat contradictory to what was theorized. Forecasting was found to have a significant negative relationship with performance, albeit relatively weak ($r = -0.202$, $p = 0.011$). If we were to follow the logic of the criticism literature, forecasting (being more associated with radical practice) should result in increased performance, as it has dealt with some of the problems with rigid budgets, gaming tendencies, and time-consuming features. Following this logic, typically criticised roles like control, planning and motivation should have a negative correlation with performance.

There are several potential explanations why this is not the case for my results. Firstly, the measures used. The measures of performance were of a subjective nature. With subjective

measures describing performance, it is possible that other factors than those examined have played a role, diminishing the relationships wanted to examine. As seen from the Univariate analysis, even though the performance measure included three items quantifying more than one aspect of performance, the observation was still heavily skewed towards a higher degree of performance. Referencing the aforementioned discussion of subjective measures, this a skew against higher positive outcomes was a likely outcome. Logically, all companies cannot outperform all other companies. Another consideration is that measures of financial performance is perhaps not suitable to rate the success of budgeting systems. This pertains to some of the same logic, whereas financial performance is an aggregate product of many factors. Budgeting may play a marginal role. I.e., it is possible to achieve financial performance while having a budgeting system performing, and vice versa. Conclusively, even though the budgeting system may play a role, it is likely it only can explain a small proportion of the variation. The regression results support this claim, with relatively low R^2 values, suggesting that the roles play a small part in the total variance of the performance measure.

The reoccurring issue of conceptual overlap may also have played a role. If there was a mutual understanding of all budgeting concepts, it would perhaps be easier to assert the roles to performance outcomes. However as seen from the previous section, there is an extent of overlap as relationships that according to theory are contradictory, are emphasised.

Forecasting emphasis was the only purpose to have a significant relationship with performance. With a Pearson's r of – 0.202 this suggests a weak relationship between the variates. I will be carful to say that this signifies that forecasting leads to lower financial performance for a couple of reasons. Firstly, this is not a causal study as it is at a single point of time, thus results are more an indication rather than truth. Secondly, the relationship is relatively weak, and some might even consider it relishable, thirdly the other reasons disused above may have also played a role in this regard as well. This is not to say that budgeting roles are not important for performance measures, however, within themselves they are not found to explain all that much. There are most likely many underlying factors to budgeting purposes, and maybe these are more important in examining the relationship with performance. Hansen & Van der Stede (2004) in their study, find differences in reasons to budget and performance, however they identify a set of underlying factors which influence these variables. To identify any significant relationships, both measures of roles and performance would need to be enhanced, to better understand their potential correlations.

5.2.3. Budgeting Roles and Budgeting Satisfaction

In examining the relationship between roles and overall Budget satisfaction, two of the purposes were found to have significant positive relationship. Correlation coefficients for Forecasting and Strategy: $r = 0.175$, $p = 0.028$ and $r = 0.230$, $p = 0.004$, respectively. These are considered to be relatively weak relationships. Theorised according to budgeting literature, I proposed that roles associated with radical practices would be positively correlated, while more conservative roles would correlate negatively. Thus, the finding of strategy and forecasting relationship with radical businesses strengthen this proposition. However, none of the conservative roles are found to have a negative relationship with satisfaction. A possible explanation is that businesses are generally satisfied with their budgeting systems and emphasise. As studies have shown time and again the last 20 years (Ekholm & Wallin, 2000; Libby and Lindsay, 2010; Johanson & Madsen, 2013) practitioners overwhelmingly emphasise conservative practices, despite its criticism. If practitioners were so dissatisfied, they would be sure to substitute their budgeting systems. This is also found in a general sense, in the univariate analysis of Budget Satisfaction, the distribution was heavily skewed against the satisfied end, with a mean of 5.262 (of 7). I.e., there is a general sense of satisfaction with budgeting systems, no matter what purposes are emphasised. Those who emphasised the particular roles where also asked how satisfied they were with that budgeting role, these results also indicate a high degree of satisfaction without any role standing out (Appendix D).

It is perhaps contradictory that the forecasting role has a negative relation with performance, and a positive relation with satisfaction. However, this perhaps strengthens the alternative theory, that budgeting role emphasis do not predict financial performance very vell. This could be an indication that the roles play a minor role, and that satisfaction with a budgeting role does not equal higher performance.

5.2.4. Budgeting Roles correlations with each other

A test of how the different roles associate with one another was also performed, with certain roles proposed to have various relationships. Control was predicted to have positive association with planning, evaluation and motivation, which there was found evidence of significant, albeit weak relationships. Motivation was also found to correlate with Evaluation. These are what has been defined as typical traditional emphasise, which was why they were

proposed to correlate. However, not all proposed traditional relationships had significant findings. Planning was thought to relate to both motivation and evaluation, while no evidence was found to support this claim. A potential reason could be ambiguous definitions and perception of roles, rendering roles not entirely independent. It is also possible that the roles are not used entirely in the manner that is criticised, consequently not conforming to the logic of traditional budgeting criticism.

Forecasting was thought to correlate positively with evaluation and strategy. Evaluation is perhaps a more conservative purpose within itself, however it would be vital to make certain evaluations of forecast ex post, to examine the accuracy. Both strategy and forecast are often considered to be of more "radical" conceptualisation, thus suggested to correlate. Conversely, the typical traditional roles, were predicted to have negative correlation with Forecasting. The only significant finding was that a positive association between forecasting and evaluation. The same explanations as above, of conceptual overlap and radical/conservative practice not being black and white, are potential reasons for these findings.

There were also two significant relationships found, that were not predicted: Strategy/Motivation and Strategy/evaluation. These could be due to these three categories having the lowest number of observations, consequently making them more prone to finding significant relationship on the basis of a lower sample. The conceptual overlap could also play a role. I believe this is more likely to be true, as it is hard to decipher how these results can be explained through the current budgeting literature.

Evaluation, as it turns out, has a significant relationship with almost all roles. This is interesting as this can be translated to that evaluation is rarely selected on its own. A potential implication of this, is that the evaluation is dependent on other budgeting roles and could potentially differ according to what other budgeting roles that are emphasised. As a caveat, it should be kept in mind that evaluation is one of the purposes with the least amount of observations. With less observations, significant findings can more easily be generated.

5.3. Performance

5.3.1. Format/Performance

A positive relationship between radical practices and performance, and vice versa for conservative practices, was hypothesises. However, the results were contradictory to the

initial hypothesis. Conservative practices were found to have a significant relationship with performance. Although, not what was expected, this is in line with previous findings, whereas forecasting was found associated with both lower performance and radical budgeting practice. Drawing from theory, both those who attempt to improve budgeting and BB proponents argue that "fixing" the budgeting problems will lead to more a more effective and relevant operation (Hope & Fraser, 1997, 2003[a], 2003[b]; Bogsnes, 2016; Jensen, 2001), and although not necessarily stated explicitly this should positively effect performance in some way or another. This effect does not necessarily reflect theory, as there is little literature researching the relationship between performance and radical budgeting practice, my hypothesis was based on a general notion that "fixing" the budgets should result in positive outcomes. I will review a couple of possible explanations why this might not be the case.

Firstly, an explanation which already has been covered is that of ill-defined measures. The performance measure is aggregated of many factors, and budgeting format may not explain much of overall performance. Conceptual overlap of budgeting terminology may also factor in. Although, it is still curious how the sample could find significant differences among the two groups.

The significant relationship indicates that it is not random that radical companies underperform when compared to conservative. However, this could also be attributed to other characteristics of companies. For example, radical companies are in the sample found to experience more volatile environments. More volatile environment could theoretically have a negative effect on performance. Thus, performance is perhaps more affected by volatile environment, while format is also a reaction to volatile environments, as its it typically seen as more adaptable. I.e., negative performance could be the predictor of Budgeting Format, as this forces companies to change. Other characteristics for businesses external influences on performance could also be at play, however these were not identified for the survey.

There are also certain characteristics with radical practice which could distort potential positive outcomes. For example, Østgren & Stensaker (2011), recognise that there are potential difficulties with implementation of BB, Sandalgaard & Bukh (2013) also conclude with possible complications of implementation, as well as indicating that BB is not for everyone. As conveyed by Bogsnes (2016), it is more a philosophy than a strict management recipe. Consequently, difficulties with implementing more radical practices can occur, and

offset performance if not properly executed. In the other side of the scale, we have the question of how broken the budget actually is? As research has shown, practitioners utilise traditional budgeting or attempt to improve the traditional budgeting system despite criticism (Ekholm & Wallin, 2000; Libby & Lindsay, 2010, Johanson & Madsen, 2013). As many respond in these studies either slight flexibility or wanting to improve on budgeting system, this could imply that certain steps have been taken toward neutralising the more problematic aspects of beyond budgeting. As Gjønnes & Tangenes (2016, p. 243) pronounces "the tradition budget, when asserted roles it should not have, is an easy target". Yes, if a budget were to follow the exact lineation of a traditional budget, there are definitely issues. However, it is likely that over the years traditional budgeting has evolved to hybrid-systems whereas traditional methods reflected, although with some of the worst threats mitigated by improvement and/or consideration of these. Thus, a plausible explanation for traditional budgeting not being negatively correlated with performance.

5.3.2. Format/Budget Satisfaction

For this relationship I initially proposed a positive relationship between Budget Format and Budget Satisfaction. The results indicate a slight, but significant, positive relationship between these two variables. Those who employ more radical practices, are in general more pleased with their budgeting systems, however as we saw from the latter segment, they generally report lower performance. From the examination of association between performance and satisfaction, results show no significant relation. In combination these results both underpin a proposition that satisfaction with budgeting systems cannot predict performance, or the other way around. Another way of putting this, is that a budget can add value, without leading to higher financial performance. This does build on previous arguments that the financial performance measure is too aggregated, and budgeting system plays a small role in prediction. Following this logic: the radical budgeters are perhaps more satisfied with their budgeting systems, reasoned in a more complete system considering the issues of traditional budgeting. This, however, does not translate directly to higher performance, as other underlying factors also account for this.

In the other end we have conservative practice with a slight negative relationship. A possible reason for this could lie in a status quo. Ekholm & Wallin (2000) and Libby & Lindsay (2010) Both find a general satisfaction with budgeting, although criticisms are acknowledged. Thus,

the negative relationship is perhaps not stronger as it is “business as usual”, a general sense that it works sufficiently despite its issues, could enhance satisfaction.

5.4. Discussion summary

A reoccurring theme of the discussion is the presence of conceptual overlap. For example, findings of theoretically counterintuitive role emphasis strengthen this suspicion. The inability to measure the constructs properly results in variable results. The findings do importantly show that the suggested groups of radical/conservative are significantly different. Further on the results do perhaps not indicate any strong evidence of performance outcomes for different budgeting practices or role emphasise. However, the small differences found have led me to believe a) budgeting characteristics may not predict financial performance b) radical practice is not necessarily associated with positive outcomes. This could be a result of and reinforcing a concept that budgeting practice is not necessarily broken c) More traditional or marginally radicalised practices are still ample, despite negative connotations.

6.0. Conclusion

Conclusively I will reiterate what I believe to be the key findings in my research to examine Norwegian budget practice and potential outcomes of budgeting choices. Thereafter, I will discuss some potential limitations of my work, as well as options for further research.

6.1. Implications

Firstly, the distinction between radical and conservative appears to be a relevant taxonomy. The two groups have significant, distinct patterns in satisfaction, performance and emphasis on budgeting roles. Thus, the two groups have a degree of heterogeneity and look to be an appropriate distinction. Secondly, radical practice was not found be associated with higher performance, however with higher satisfaction. The conjecture being that a budgeting system can add value without translating directly to financial performance. Difficulties of delineation of a BB system, conversely challenges in implementation could potentially also contribute to lower performance. However, the system could still improve on certain issues with conservative budgets, subsequently add value (increase satisfaction). Thirdly, on the other

hand we have the conservative budgeting practice "overperforming" in the context of theorised relationships. Is it possible that the notorious traditional budget has an undeserved bad rumour? The criticism is mostly assigned to a certain "worst practice", whereas flaws are easily identified. Research has shown that not much has changed the past 20 years, as the majority of companies still report more conservative practice, combined with general satisfaction with budgeting systems. I.e., Traditional systems are utilised and deemed satisfactory. However, if the majority were applying "worst practice" this should result in more dire consequences? Explanations may include, budgeting adapting slightly from "worst practice" and improving on the most controversial role conflicts. "Business as usual" does perhaps not require changes in budgeting systems and the business will still be able to compete despite employing "sub-optimal" budgeting systems. A final remark pertains to the conceptual overlap. The counterintuitive findings of role emphasis strengthen the evidence of a potential gap in literature and practice, complicating research on the matter.

6.2. Limitations

This project is not without its limitations. First and foremost, the research had a cross-sectional and descriptive strategy, conversely results should not be viewed as causal relationships, merely indications. More in regard to external validity the sample may not have been representative for large Norwegian companies. As contact information for the entire sample was not available, the sample was perhaps not retrieved at entirely random. Hence, the sample may not be generalisable for the population, although the distributions of control variables show promising signs.

The most protruding issue with this study is, however, those of internal validity. There is likely to be a disparity in practice and academia (Berg, 2013). There are also variances in practice, as well as an array of definitions in the budgeting literature, making it difficult to produce and stable, unitary measures (Hansen & Van der Stede, 2004). Thus, the survey may not have bridged the gap and conceptual overlap is anticipated to be present, lessening the internal validity. The measure of performance does also have some validity issues, as well as the proposed links to budgeting characteristics. The performance measure is subjective of nature and may not capture actual financial performance. The links found between budgeting characteristics and performance are weak, suggesting budgets systems may not predict performance outcomes very well. Both these issues of internal validity can also be traced to

the challenging process of quantifying a social construct into mathematical terms. This conversion is a known problem of quantitative social sciences.

Alternate models have not to any extent been tested, barely mentioned in some of the test of association. Some potential explanations for deviations from the expected relationships have also been discussed, however these are only speculations and not statistical tests. As time and resources, and to a certain extent, methodology did not allow for additional data gathering, only some alternate models have been discussed and not tested.

6.3. Further research

As the study has produced some noteworthy indications. However there are some unconfirmed assumptions, here there are aspects in which could be researched further. Firstly, as the problem of conceptual overlap is a protruding issue, more refined variables could be an option. A less quantitative approach examining cases of different budgeting practices and their potential outcomes could also be an interesting avenue for further exploration. A methodology like this could perhaps decrease construct confusion and enhance internal validity. Some of the concluding assumptions could also be researched further. Both conjectures that radical practice can add value without translating to higher performance, and that conservative practice can be reasonable for some companies, can both be expanded on.

6.4. Concluding Remarks

In conclusion: the two groups (Conservative/Radical) are significantly different, however they cannot strongly be linked to any performance outcomes, as a result of performance outcomes being dependent on other external and internal factors as well. Conceptual overlap in the entire subject of budgeting has a strong influence and makes research challenging. However, this is a potential avenue of research and studies with refined variables or other methodologies could produce interesting results.

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List of Figures

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Appendix A: literature overview/literature matrix

Theme/Topic	Year	Author(s)	Title
Budget Outcome	1989	Merhcant & Manzino	The Achievability of Budget Targets in Profit Centers
Budget Outcome	2011	Dunk	Product innovation, budgetary control, and the financial performance of firms
Budget Outcome	2011	Østgren og stensaker	Management Control without Budgets: A Field Study of 'Beyond Budgeting' in Practice
Budget Outcome	2013	Sandalgaard & bukh	Beyond Budgeting and change: a case study
Budget Outcome	2018	Nguyen, Weigel & Hiebl	Beyond budgeting: Review and research agenda
Budgeting Practice	1992	Scmidt	Is it time to replace traditional budgeting
Budgeting Practice	1995	Loeb	Jack Welch lets fly on budgets, bonuses, and buddy boards
Budgeting Practice	1997	Hope & Fraser	Beyond budgeting
Budgeting Practice	1999	Wallandre	Budgeting — an unnecessary evil
Budgeting Practice	2000	Ekholm & Wallin	Is the annual budget really dead?
Budgeting Practice	2000	Marcino	Obliberate Traditional budgeting
Budgeting Practice	2003	Hansen, Otley & Van der Stede	Practice developments in budgeting: an overview and research perspective.
Budgeting Practice	2003	Hope & Fraser	who needs budgets?
Budgeting Practice	2003	Hope & Fraser	Time and money. (From Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap)
Budgeting Practice	2003	Libby & Lindsay	Budgeting -- an unnecessary evil, part two: How the BBRT envisions a world without traditional budgeting
Budgeting Practice	2003	Neely, Bourne, Adams	better budgeting or beyond budgetting?
Budgeting Practice	2010	Libby & Lindsay	Beyond budgeting or budgeting reconsidered? A survey of North-American budgeting practice
Budgeting Practice	2016	Bogsnes	Implementing Beyond Budgeting: Unlocking the Performance Potential
Budgeting Practice	2018	Bogsnes	Hitting the Target but Missing the Point.
Budgeting Reasons	1977	Barret & Fraser	Conflicting Roles in Budgeting for Operations
Budgeting Reasons	1984	Churchill	Budget Choice: Planning vs. Control
Budgeting Reasons	2004	Hansen, van der stede	Multiple Facets of Budgeting: An Exploratory Analysis
Budgeting Reasons	2008	Bhimani, Horngren, Datar &	Management and cost accounting
MA Textbook	2009	Sivabalan, Booth, Malmi &	An exploratory study of operational reasons to budget
MA Textbook	2014	Gjønnes og Tangenes	Økonomi- og virksomhetsstyring : Strategistøtte ved prestasjonsstyring, ressursstyring og beslutningsstøtte
MA Textbook	2015	Horngren, Datar & Rajan	Cost accounting, a managerial emphasis
MA Textbook	2016	Gjønnes og Tangenes	Økonomisk styring 2.0.
MA Textbook	2019	Sending & Tangenes	Økonomistyring
Management Control Systems	1994	Otley	Management Control in contemporary organisations: Towards a wider framework
Management Control Systems	1995	Bunce, Fraser & Woodcock	Advanced Budgeting: a journey to advanced management systems

Management Control Systems	1999	Otley	Performance management: a framework for management control systems research
Management Control Systems	2010	Bjørnerak	Økonomistyringens tapte relevans, del 1 og 2
Management Control Systems	2013	Bjørnerak	Styringssystemer og lønnsomhet
Management Control Systems	2013	Johanson & Madsen	Økonomisk styring i Norge
Management Control Systems	2017	Merchant & Van der stede	Management control systems : Performance measurement, evaluation, and incentives
Relevance lost	1987	Johnson & Kaplan	Relevance Lost: The Rise and Fall of Management Accounting
Relevance lost	1992	Kaplan & Norton	The balanced scorecard--measures that drive performance
Relevance lost	1996	Kaplan & Norton	Linking the Balanced Scorecard to Strategy
Relevance lost	2000	Nørreklit	The balance on the balanced scorecard- a critical analysis of some of its Assumptions
Relevance lost	2003	Itner & Larcker	Coming Up Short on Nonfmancial Performance Measurement.
Relevance lost	2003	Nørreklit	The Balanced Scorecard: What is the score? A rhetorical analysis of the Balanced Scorecard
Rolling budgets	2010	Frow, Margnson & Ogden	"Continuous" budgeting: Reconciling budget flexibility with budgetary control
Rolling budgets	2010	Morlidge & Player	Future ready : How to master business forecasting
Rolling budgets	2011	Hansen	A Theoretical Analysis of the Impact of Adopting Rolling Budgets, Activity-Based Budgeting and Beyond Budgeting
Rolling budgets	2012	Gjønnes og Tangenes	Målbærende plan eller plankritisk prognose? - Om budsjettets plass i målstyring
Textbook Review	2013	Berg	Lærebøkene i Budsjettering – Hvor går veien videre?
Textbook Review	2018	Bhimani, Sivabalan & Soonawalla	A study of the linkages between rolling budget forms, uncertainty and strategy

Appendix B: Questionnaire/Survey

Question 1:

In terms of revenue (NOK), which range is your business within?

1. 0 – 500m
2. 500 – 1 000m
3. 1 000 – 2 000m
4. 2 000 – 5 000m
5. 5 000m +

Question 2:

In what business sector would you place your business within?

1. Agriculture, Forestry and fishing
2. Mining and Quarrying
3. Extraction of Oil and Gas
4. Industry/Manufacturing
5. Electricity, Gas, Steam and Air-conditioning Supply
6. Water Supply, Sewerage, Waste Management and Remediation
7. Construction
8. Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles
9. Transportation and Storage
10. Accommodation and Food Service activities
11. Information and Communication
12. Financial and Insurance activities
13. Real Estate activities
14. Professional, Scientific, Technical, Administration and Support Service activities
15. Public Administration and Defence
16. Education
17. Human Health and Social Work activities
18. Other Services

Question 3:

How do you agree with this statement:

"My business is competing in a more volatile environment than the average in Norway"

1. Strongly agree
2. Agree
3. Somewhat agree
4. Neither agree nor disagree
5. Somewhat disagree
6. Disagree
7. Strongly disagree

Question 4:

Do you use rolling budgets/forecasts? (Updating budgets periodically or continuously, rather than on a yearly basis)

1. Yes
2. No

Question 5:

Which of these statements fit your business?

1. We budget yearly, budgets are prepared for the beginning of the year and is followed throughout the fiscal year (traditional budgeting).
2. We have yearly budgets as above, however, we make changes and improvement if it is deemed necessary throughout the year.
3. We use budgets flexible and review and revise our budgets periodically throughout the year.
4. We are in the process of getting rid of budgets.
5. We do not use budgets in a traditional sense, we employ some form of beyond budgeting philosophy.

Block 1:

Question 6:

What are your main purposes for budgeting? (You can choose multiple)

Further description of the different purposes are below

1. Control
2. Planning
3. Forecasting
4. Strategy
5. Motivation/Compensation
6. Evaluation
7. Other (please enter your other purpose below)
8. Do not budget

Description of budgeting purposes:

Control – Control cost, expenditures and performance. For example, budgets are used to set roof on expenditures and goals for performance to make sure different divisions of the business are controlled.

Planning – Budgetary targets are used as plans for the future. We will know what to do

because we have a budget to follow.

Forecasting – The budget is used as a prediction of the future. The numbers are not explicit goals to work towards, but rather an indication of the future.

Strategy – The budgets help to convey the strategy and aligns cross-department communication and coordination.

Motivation/Compensation – Achieving budgetary goals are used as motivation, for example, there are rewards systems linked up with budgetary achievement.

Evaluation – Budgets are used to evaluate both individual and business performance, achievement of budgetary goals in a post budget period are usually evaluated.

Blokk2:

Question 7:

How satisfied are you with "Control" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 8:

How satisfied are you with "Planning" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 9:

How satisfied are you with "Forecasting" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied

7. Highly dissatisfied

Question 10:

How satisfied are you with "Strategy" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 11:

How satisfied are you with "Motivation" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 12:

How satisfied are you with "Evaluation" as a budgeting purpose?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Block 3:

Question 13:

To what extent are you satisfied with your current budgeting system (or non budgeting system) as an aid to the managing unit?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 14:

To what extent are you satisfied with your current budgeting system (or non-budgeting system) as an aid to make short-term operational decisions?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 15:

To what extent are you satisfied with your current budgeting system (or non-budgeting systemas) an aid to make long-term strategic decisions?

1. Highly satisfied
2. Moderately satisfied
3. Slightly satisfied
4. Neither satisfied nor dissatisfied
5. Slightly dissatisfied
6. Moderately dissatisfied
7. Highly dissatisfied

Question 16:

Which of the following best describe your unit's economic performance?

1. Less Profitable than my competitor
2. Slightly less profitable than my competitors
3. Comparable to my competitor
4. Slightly more profitable than my competitors
5. More profitable than my competitors

Question 18:

Consider ideal performance as 100%. What percentage value would you assign to your business unit actual performance the past year?

1. 0 – 20%
2. 20 – 40%
3. 40 – 60%
4. 60 – 80%
5. 80 – 100%

Question 19:

Rate how well your unit is performing in term of its market performance (e.g. sales growth, market share growth etc.)

1. Well below average relative to competitors
2. Below average relative to competitors

3. Average relative to competitors
4. Above average relative to competitors
5. Well above average relative to competitors

Appendix C: Invitation letter

Dear Sir/Madam

I am a master's degree student at the University of South-Eastern Norway. A part of my dissertation, I am collecting data about budgeting systems and routines. This e-mail is sent to executive managers of selected Norwegian companies. To collect data on the matter, I have prepared a survey, which will take less than 5 minutes to answer and is reached by this link:

https://usn.eu.qualtrics.com/jfe/form/SV_5ckvWIv5HAVjit0

I do appreciate your participation, and in return you will, on request, receive my finished report by the end of June this year.

The survey is anonymous. No collected data can be traced to the responder.

The survey's goal is to collect data on budgeting formats used and roles assigned to the budget in practice. The academic field of performance management comprises both proponents and opponents of traditional budgeting. The former group is represented by most textbook authors, while the latter constitute the academic branch of "Beyond Budgeting" and "Relevance Lost" literature. In my master´s dissertation, I am exploring reasons for budgeting, and how different budgeting practices and roles affect performance.

If you would like to know more about my work, I have attached my preliminary dissertation work to this email.

Thank you so much for your time and your responses!

Kind regards,
Håvard Moholt Berge,
Master student at USN

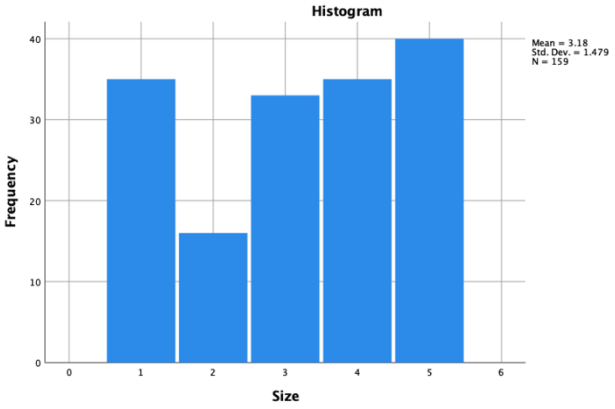
Appendix D: Univariate analysis – Results from univariate analysis of variables

Size:

Statistics

Size

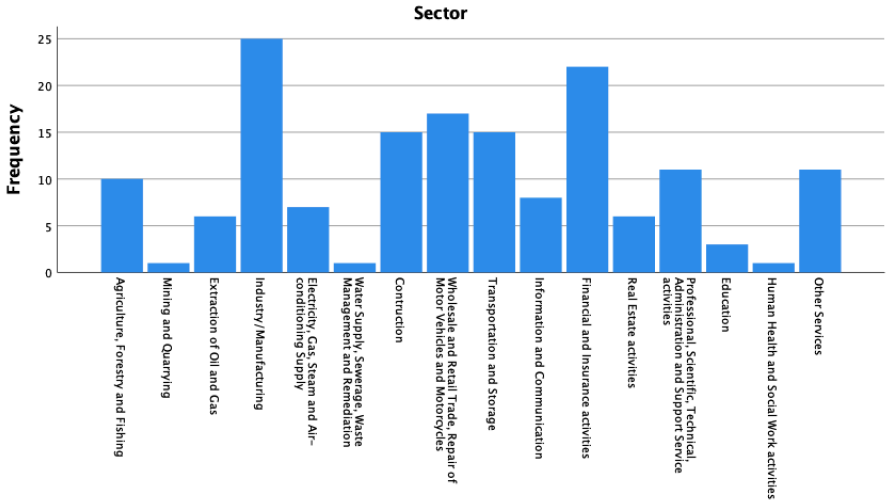
N	Valid	159
	Missing	0
Mean		3.18
Std. Deviation		1.479
Skewness		-.260
Std. Error of Skewness		.192
Kurtosis		-1.304
Std. Error of Kurtosis		.383



Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-500m	35	22.0	22.0	22.0
	500-1000m	16	10.1	10.1	32.1
	1000-2000m	33	20.8	20.8	52.8
	2000-5000m	35	22.0	22.0	74.8
	5000m+	40	25.2	25.2	100.0
	Total	159	100.0	100.0	

Business sector:



		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agriculture, Forestry and Fishing	10	6.3	6.3	6.3
	Mining and Quarrying	1	.6	.6	6.9
	Extraction of Oil and Gas	6	3.8	3.8	10.7
	Industry/Manufacturing	25	15.7	15.7	26.4
	Electricity, Gas, Steam and Air-conditioning Supply	7	4.4	4.4	30.8
	Water Supply, Sewerage, Waste Management and Remediation	1	.6	.6	31.4
	Contruction	15	9.4	9.4	40.9
	Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	17	10.7	10.7	51.6
	Transportation and Storage	15	9.4	9.4	61.0
	Information and Communication	8	5.0	5.0	66.0
	Financial and Insurance activities	22	13.8	13.8	79.9
	Real Estate activities	6	3.8	3.8	83.6
	Professional, Scientific, Technical, Administration and Support Service activities	11	6.9	6.9	90.6
	Education	3	1.9	1.9	92.5
	Human Health and Social Work activities	1	.6	.6	93.1
	Other Services	11	6.9	6.9	100.0
	Total	159	100.0	100.0	

Volatility:

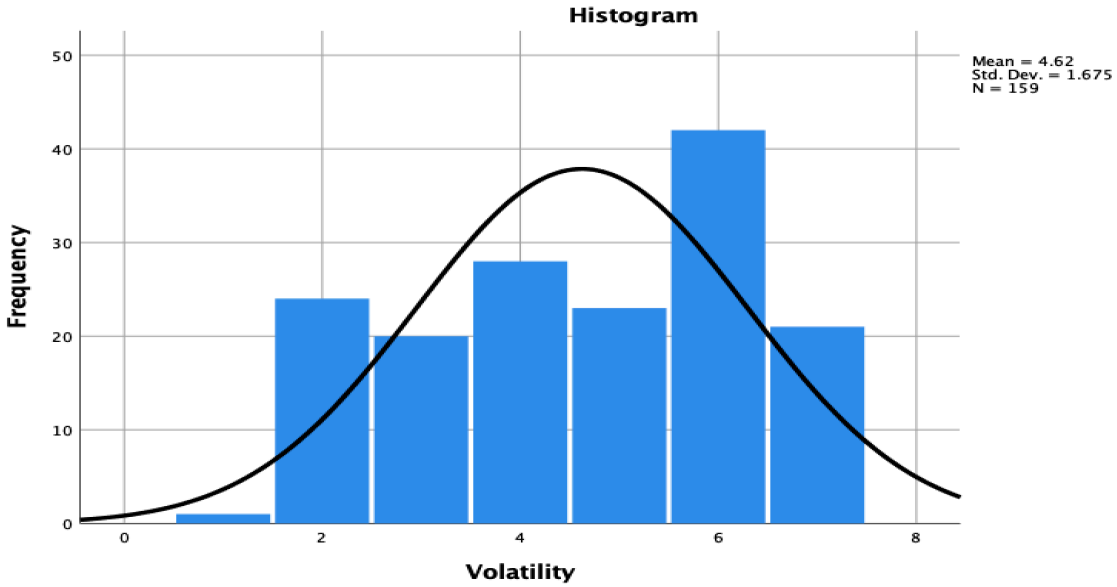
Statistics

Volatility

N	Valid	159
	Missing	0
Mean		4.62
Std. Deviation		1.675
Skewness		-.245
Std. Error of Skewness		.192
Kurtosis		-1.160
Std. Error of Kurtosis		.383

Volatility

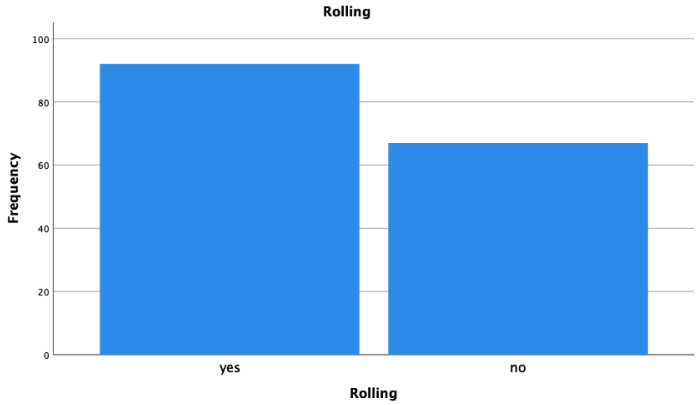
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	.6	.6	.6
	2	24	15.1	15.1	15.7
	3	20	12.6	12.6	28.3
	4	28	17.6	17.6	45.9
	5	23	14.5	14.5	60.4
	6	42	26.4	26.4	86.8
	7	21	13.2	13.2	100.0
	Total	159	100.0	100.0	



Rolling Budgets:

Rolling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	92	57.9	57.9	57.9
	no	67	42.1	42.1	100.0
	Total	159	100.0	100.0	



Budget Roles

PurpControl

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	62	39.0	39.0	39.0
	yes	97	61.0	61.0	100.0
	Total	159	100.0	100.0	

PurpPlanning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	52	32.7	32.7	32.7
	yes	107	67.3	67.3	100.0
	Total	159	100.0	100.0	

PurpStrategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	82	51.6	51.6	51.6
	yes	77	48.4	48.4	100.0
	Total	159	100.0	100.0	

PurpForecast

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	56	35.2	35.2	35.2
	yes	103	64.8	64.8	100.0
	Total	159	100.0	100.0	

PurpOther

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	149	93.7	93.7	93.7
	yes	10	6.3	6.3	100.0
	Total	159	100.0	100.0	

PurpMotivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	114	71.7	71.7	71.7
	yes	45	28.3	28.3	100.0
	Total	159	100.0	100.0	

PurpEvaluation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	113	71.1	71.1	71.1
	yes	46	28.9	28.9	100.0
	Total	159	100.0	100.0	

Role Satisfaction

Statistics

		SatControl	SatPlanning	SatForecast	SatStrategy	SatMotivation	SatEvaluation
N	Valid	97	107	103	77	45	46
	Missing	62	52	56	82	114	113
Mean		5.75	5.82	5.94	5.88	5.42	5.67
Std. Deviation		1.100	1.053	1.027	.903	1.138	1.012
Skewness		-1.699	-2.005	-1.984	-1.196	-1.107	-.499
Std. Error of Skewness		.245	.234	.238	.274	.354	.350
Kurtosis		4.284	6.038	6.391	1.838	1.233	-.212
Std. Error of Kurtosis		.485	.463	.472	.541	.695	.688

Budget format:

Practice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Traditional Budgeting	42	26.4	26.4	26.4
	Traditional budeting with a little felxibility	73	45.9	45.9	72.3
	Flexible Budgeting	28	17.6	17.6	89.9
	Considering or in process of abandoning Budget	2	1.3	1.3	91.2
	Have abandoned the Budget	14	8.8	8.8	100.0
	Total	159	100.0	100.0	

Practice3Split

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Traditional Budgeting	115	72.3	72.3	72.3
	Flexible Budgeting	30	18.9	18.9	91.2
	Beyond Budgeting	14	8.8	8.8	100.0
	Total	159	100.0	100.0	

PracticeConRad

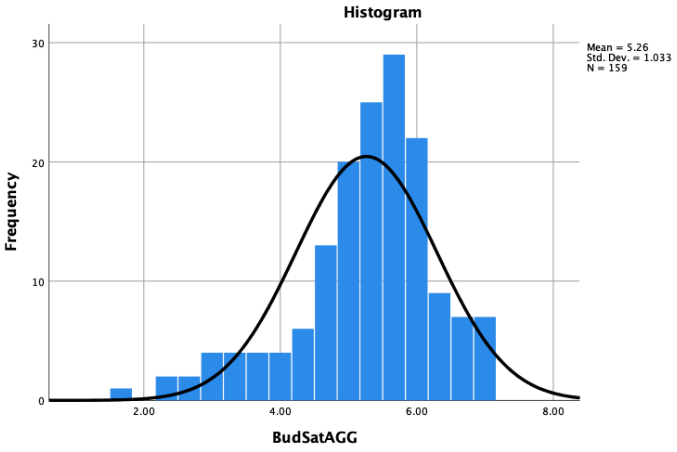
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Conservative Budgeters	115	72.3	72.3	72.3
	Radical Budgeters	44	27.7	27.7	100.0
	Total	159	100.0	100.0	

Budget Satisfaction:

Statistics

BudSatAGG

N	Valid	159
	Missing	0
Mean		5.2621
Std. Deviation		1.03345
Skewness		-.934
Std. Error of Skewness		.192
Kurtosis		1.078
Std. Error of Kurtosis		.383

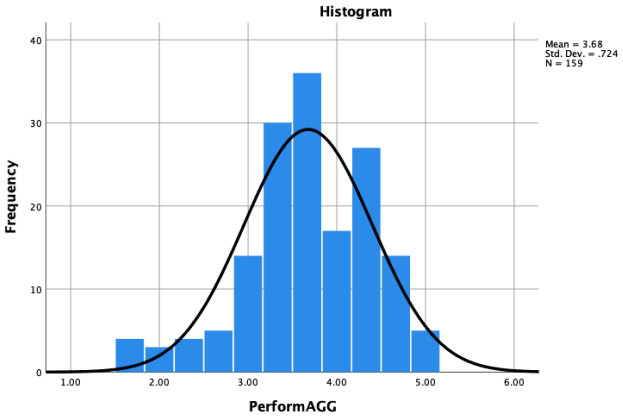


Financial performance:

Statistics

PerformAGG

N	Valid	159
	Missing	0
Mean		3.6771
Std. Deviation		.72374
Skewness		-.571
Std. Error of Skewness		.192
Kurtosis		.408
Std. Error of Kurtosis		.383



Appendix E: Exploratory factor analysis (EFA)

Budget satisfaction:

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
BudSat1	5.51	1.185	159
BudSat2	5.06	1.500	159
BudSat3	5.21	1.290	159

Correlation Matrix

		BudSat1	BudSat2	BudSat3
Correlation	BudSat1	1.000	.481	.388
	BudSat2	.481	1.000	.363
	BudSat3	.388	.363	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.823	60.773	60.773	1.823	60.773	60.773
2	.659	21.969	82.743			
3	.518	17.257	100.000			

Extraction Method: Principal Component Analysis.

Financial Performance:

Component Matrix[a]

	Component 1
BudSat1	.809
BudSat2	.795
BudSat3	.732

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Component Matrix[a]

	Component 1
Perform1	.821
Perform2	.657
Perform3	.802

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BudSat1	10.28	5.315	.530	.528
BudSat2	10.72	4.252	.503	.558
BudSat3	10.57	5.360	.434	.637

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Perform1	3.38	1.035	159
Perform2	4.12	.950	159
Perform3	3.53	.863	159

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.748	58.252	58.252	1.748	58.252	58.252
2	.757	25.236	83.489			
3	.495	16.511	100.000			

Extraction Method: Principal Component Analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
.671	3

Correlation Matrix

		Perform1	Perform2	Perform3
Correlation	Perform1	1.000	.321	.503
	Perform2	.321	1.000	.284
	Perform3	.503	.284	1.000

Reliability Statistics

Cronbach's Alpha	N of Items
.635	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Perform1	7.65	2.114	.508	.441
Perform2	6.91	2.714	.350	.662
Perform3	7.50	2.606	.490	.484

Appendix F: Other purposes

«Other» Purposes of Budgeting

This is a list of other purposes expressed by the respondents in the survey. Includes respondent who did not complete the survey.

1. Capital allocation
2. Forecast used as updates to actual performance to readjust plans, implement gap closure after approx. 6 months into year.
3. Resource allocation
4. Do not use budgeting
5. Funding
6. Outlining key strategic goals to investors
7. Capital planning and forecasting
8. Provide dynamic (relevant and forward looking) steering information to reflect actual developments, assumed developments and actions (investments etc) and related effects - short term and long term
9. Yearly status of cost and income
10. Following up KPI targets, capital structure targets, cap. ex. and dividend capacity.
11. We do not budget. We only operate with forecasts.

Appendix G: Bivariate and multivariate analysis

Hypothesis 1:
Size/Format:

ConservativeDummy * Size Crosstabulation

			Size					
			0-500m	500-1000m	1000-2000m	2000-5000m	5000m+	Total
ConservativeDummy	0	Count	12	7	9	8	8	44
		Expected Count	9.7	4.4	9.1	9.7	11.1	44.0
	Conservative	Count	23	9	24	27	32	115
		Expected Count	25.3	11.6	23.9	25.3	28.9	115.0
Total		Count	35	16	33	35	40	159
		Expected Count	35.0	16.0	33.0	35.0	40.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.416[a]	4	.353
Likelihood Ratio	4.301	4	.367
Linear-by-Linear Association	3.242	1	.072
N of Valid Cases	159		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.43.

Correlations

		Size	Conservative Dummy
Size	Pearson Correlation	1	.143
	Sig. (2-tailed)		.072
	N	159	159
ConservativeDummy	Pearson Correlation	.143	1
	Sig. (2-tailed)	.072	
	N	159	159

Volatility/Format:

Correlations

		Conservative Dummy	Volatility
ConservativeDummy	Pearson Correlation	1	-.173*
	Sig. (2-tailed)		.029
	N	159	159
Volatility	Pearson Correlation	-.173*	1
	Sig. (2-tailed)	.029	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

Business Sector/Format:

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.548[a]	15	.287
Likelihood Ratio	18.395	15	.242
Linear-by-Linear Association	3.102	1	.078
N of Valid Cases	159		

a. 20 cells (62.5%) have expected count less than 5. The minimum expected count is .28.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.218[a]	4	.377
Likelihood Ratio	4.093	4	.394
Linear-by-Linear Association	2.652	1	.103
N of Valid Cases	94		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 3.83.

Crosstab

			Sector2					
			Industry & Manufacturing	Construction	Wholesale & Retail Trade	Transportation & Storage	Financial & Insurance Activities	Total
ConservativeDummy	0	Count	4	4	4	3	9	24
		Expected Count	6.4	3.8	4.3	3.8	5.6	24.0
	Conservative	Count	21	11	13	12	13	70
		Expected Count	18.6	11.2	12.7	11.2	16.4	70.0
Total		Count	25	15	17	15	22	94
		Expected Count	25.0	15.0	17.0	15.0	22.0	94.0

Rolling Budget/Format:

ConservativeDummy * Rolling Crosstabulation

			Rolling		
			yes	no	Total
ConservativeDummy	0	Count	36	8	44
		Expected Count	25.5	18.5	44.0
	Conservative	Count	56	59	115
		Expected Count	66.5	48.5	115.0
Total		Count	92	67	159
		Expected Count	92.0	67.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.320[a]	1	.000		
Continuity Correction[b]	12.993	1	.000		
Likelihood Ratio	15.404	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	14.230	1	.000		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.54.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.300	.000
	Cramer's V	.300	.000
	Contingency Coefficient	.287	.000
N of Valid Cases		159	

Antecedents/Format:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338[a]	.114	.103	.425

a. Predictors: (Constant), RollDummy, Volatility

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.641	2	1.821	10.078	.000[b]
	Residual	28.183	156	.181		
	Total	31.824	158			

a. Dependent Variable: ConservativeDummy

b. Predictors: (Constant), RollDummy, Volatility

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.069	.105		10.194	.000
	Volatility	-.042	.020	-.156	-2.071	.040
	RollDummy	-.264	.068	-.291	-3.854	.000

a. Dependent Variable: ConservativeDummy

Correlations

		Conservative Dummy	Volatility	RollDummy
Pearson Correlation	ConservativeDummy	1.000	-.173	-.300
	Volatility	-.173	1.000	.059
	RollDummy	-.300	.059	1.000
Sig. (1-tailed)	ConservativeDummy	.	.014	.000
	Volatility	.014	.	.231
	RollDummy	.000	.231	.
N	ConservativeDummy	159	159	159
	Volatility	159	159	159
	RollDummy	159	159	159

Hypothesis 2:
Control:

Crosstab

			PurpControl no	PurpControl yes	Total
ConservativeDummy	0	Count	22	22	44
		Expected Count	17.2	26.8	44.0
	Conservative	Count	40	75	115
		Expected Count	44.8	70.2	115.0
Total		Count	62	97	159
		Expected Count	62.0	97.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.098[a]	1	.078		
Continuity Correction[b]	2.491	1	.114		
Likelihood Ratio	3.055	1	.080		
Fisher's Exact Test				.102	.058
Linear-by-Linear Association	3.078	1	.079		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.16.

b. Computed only for a 2x2 table

Planning:

Crosstab

			PurpPlanning		
			no	yes	Total
ConservativeDummy	0	Count	20	24	44
		Expected Count	14.4	29.6	44.0
	Conservative	Count	32	83	115
		Expected Count	37.6	77.4	115.0
Total		Count	52	107	159
		Expected Count	52.0	107.0	159.0

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.168	.034
	Cramer's V	.168	.034
	Contingency Coefficient	.166	.034
N of Valid Cases		159	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.494[a]	1	.034		
Continuity Correction[b]	3.728	1	.053		
Likelihood Ratio	4.364	1	.037		
Fisher's Exact Test				.039	.028
Linear-by-Linear Association	4.465	1	.035		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.39.

b. Computed only for a 2x2 table

Forecast:

Crosstab

			PurpForecast		
			no	yes	Total
ConservativeDummy	0	Count	9	35	44
		Expected Count	15.5	28.5	44.0
	Conservative	Count	47	68	115
		Expected Count	40.5	74.5	115.0
Total		Count	56	103	159
		Expected Count	56.0	103.0	159.0

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.191	.016
	Cramer's V	.191	.016
	Contingency Coefficient	.188	.016
N of Valid Cases		159	

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.813[a]	1	.016		
Continuity Correction[b]	4.953	1	.026		
Likelihood Ratio	6.166	1	.013		
Fisher's Exact Test				.017	.012
Linear-by-Linear Association	5.777	1	.016		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.50.

b. Computed only for a 2x2 table

Strategy:

Crosstab

			PurpStrategy		
			no	yes	Total
ConservativeDummy	0	Count	24	20	44
		Expected Count	22.7	21.3	44.0
	Conservative	Count	58	57	115
		Expected Count	59.3	55.7	115.0
Total		Count	82	77	159
		Expected Count	82.0	77.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.215[a]	1	.643		
Continuity Correction[b]	.082	1	.774		
Likelihood Ratio	.216	1	.642		
Fisher's Exact Test				.724	.388
Linear-by-Linear Association	.214	1	.644		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.31.

b. Computed only for a 2x2 table

Motivation:

Crosstab

			PurpMotivation		
			no	yes	Total
ConservativeDummy	0	Count	34	10	44
		Expected Count	31.5	12.5	44.0
	Conservative	Count	80	35	115
		Expected Count	82.5	32.5	115.0
Total		Count	114	45	159
		Expected Count	114.0	45.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.932[a]	1	.334		
Continuity Correction[b]	.591	1	.442		
Likelihood Ratio	.958	1	.328		
Fisher's Exact Test				.432	.223
Linear-by-Linear Association	.926	1	.336		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.45.

b. Computed only for a 2x2 table

Evaluation:

Crosstab

			PurpEvaluation		
			no	yes	Total
ConservativeDummy	0	Count	37	7	44
		Expected Count	31.3	12.7	44.0
	Conservative	Count	76	39	115
		Expected Count	81.7	33.3	115.0
Total		Count	113	46	159
		Expected Count	113.0	46.0	159.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.017[a]	1	.025		
Continuity Correction[b]	4.180	1	.041		
Likelihood Ratio	5.424	1	.020		
Fisher's Exact Test				.031	.018
Linear-by-Linear Association	4.985	1	.026		
N of Valid Cases	159				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.73.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.178	.025
	Cramer's V	.178	.025
	Contingency Coefficient	.175	.025
N of Valid Cases		159	

Hypothesis 3:

Correlations

		Conservative Dummy	PerformAGG
ConservativeDummy	Pearson Correlation	1	.191*
	Sig. (2-tailed)		.016
	N	159	159
PerformAGG	Pearson Correlation	.191*	1
	Sig. (2-tailed)	.016	
	N	159	159

*. Correlation is significant at the 0.05 level (2-tailed).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.191[a]	.036	.030	.71270

a. Predictors: (Constant), ConservativeDummy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.015	1	3.015	5.935	.016[b]
	Residual	79.746	157	.508		
	Total	82.760	158			

a. Dependent Variable: PerformAGG

b. Predictors: (Constant), ConservativeDummy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.455	.107		32.152	.000
	ConservativeDummy	.308	.126	.191	2.436	.016

a. Dependent Variable: PerformAGG

Hypothesis 4:

Correlations

		Conservative Dummy	BudSatAGG
ConservativeDummy	Pearson Correlation	1	-.211**
	Sig. (2-tailed)		.008
	N	159	159
BudSatAGG	Pearson Correlation	-.211**	1
	Sig. (2-tailed)	.008	
	N	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.211[a]	.045	.038	1.01338

a. Predictors: (Constant), ConservativeDummy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.520	1	7.520	7.323	.008[b]
	Residual	161.228	157	1.027		
	Total	168.748	158			

a. Dependent Variable: BudSatAGG

b. Predictors: (Constant), ConservativeDummy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.614	.153		36.745	.000
	ConservativeDummy	-.486	.180	-.211	-2.706	.008

a. Dependent Variable: BudSatAGG

Hypothesis 5:

Correlations

		BudSatAGG	PerformAGG
BudSatAGG	Pearson Correlation	1	.049
	Sig. (2-tailed)		.540
	N	159	159
PerformAGG	Pearson Correlation	.049	1
	Sig. (2-tailed)	.540	
	N	159	159

Hypothesis 6:

Correlations

		PerformAGG	PurpControl	PurpPlanning	PurpForecast	PurpStrategy	PurpMotivation	PurpEvaluation
PerformAGG	Pearson Correlation	1	.119	-.039	-.208**	.056	.094	-.022
	Sig. (2-tailed)		.136	.622	.008	.486	.238	.782
	N	159	159	159	159	159	159	159
PurpControl	Pearson Correlation	.119	1	.212**	.058	.026	.245**	.197*
	Sig. (2-tailed)	.136		.007	.465	.741	.002	.013
	N	159	159	159	159	159	159	159
PurpPlanning	Pearson Correlation	-.039	.212**	1	.075	.139	.111	-.028
	Sig. (2-tailed)	.622	.007		.345	.081	.165	.724
	N	159	159	159	159	159	159	159
PurpForecast	Pearson Correlation	-.208**	.058	.075	1	.056	.025	.209**
	Sig. (2-tailed)	.008	.465	.345		.484	.756	.008
	N	159	159	159	159	159	159	159
PurpStrategy	Pearson Correlation	.056	.026	.139	.056	1	.173*	.159*
	Sig. (2-tailed)	.486	.741	.081	.484		.029	.046
	N	159	159	159	159	159	159	159
PurpMotivation	Pearson Correlation	.094	.245**	.111	.025	.173*	1	.307**
	Sig. (2-tailed)	.238	.002	.165	.756	.029		.000
	N	159	159	159	159	159	159	159
PurpEvaluation	Pearson Correlation	-.022	.197*	-.028	.209**	.159*	.307**	1
	Sig. (2-tailed)	.782	.013	.724	.008	.046	.000	
	N	159	159	159	159	159	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Enter:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.272[a]	.074	.037	.71016

a. Predictors: (Constant), PurpEvaluation, PurpPlanning, PurpStrategy, PurpForecast, PurpControl, PurpMotivation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.102	6	1.017	2.016	.067[b]
	Residual	76.659	152	.504		
	Total	82.760	158			

a. Dependent Variable: PerformAGG

b. Predictors: (Constant), PurpEvaluation, PurpPlanning, PurpStrategy, PurpForecast, PurpControl, PurpMotivation

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.771	.138		27.304	.000
	PurpControl	.198	.123	.134	1.612	.109
	PurpPlanning	-.109	.125	-.071	-.871	.385
	PurpForecast	-.314	.121	-.208	-2.590	.011
	PurpStrategy	.097	.116	.067	.832	.407
	PurpMotivation	.121	.136	.075	.887	.376
	PurpEvaluation	-.065	.136	-.041	-.476	.635

a. Dependent Variable: PerformAGG

Stepwise:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.208[a]	.043	.037	.71012

a. Predictors: (Constant), PurpForecast

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.591	1	3.591	7.121	.008[b]
	Residual	79.170	157	.504		
	Total	82.760	158			

a. Dependent Variable: PerformAGG

b. Predictors: (Constant), PurpForecast

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.881	.095		40.898	.000
	PurpForecast	-.315	.118	-.208	-2.668	.008

a. Dependent Variable: PerformAGG

Hypothesis 7:

Correlations

		PurpControl	PurpPlanning	PurpForecast	PurpStrategy	PurpMotivation	PurpEvaluation	BudSatAGG
PurpControl	Pearson Correlation	1	.212**	.058	.026	.245**	.197*	.024
	Sig. (2-tailed)		.007	.465	.741	.002	.013	.764
	N	159	159	159	159	159	159	159
PurpPlanning	Pearson Correlation	.212**	1	.075	.139	.111	-.028	.043
	Sig. (2-tailed)	.007		.345	.081	.165	.724	.592
	N	159	159	159	159	159	159	159
PurpForecast	Pearson Correlation	.058	.075	1	.056	.025	.209**	.175*
	Sig. (2-tailed)	.465	.345		.484	.756	.008	.028
	N	159	159	159	159	159	159	159
PurpStrategy	Pearson Correlation	.026	.139	.056	1	.173*	.159*	.230**
	Sig. (2-tailed)	.741	.081	.484		.029	.046	.004
	N	159	159	159	159	159	159	159
PurpMotivation	Pearson Correlation	.245**	.111	.025	.173*	1	.307**	-.042
	Sig. (2-tailed)	.002	.165	.756	.029		.000	.596
	N	159	159	159	159	159	159	159
PurpEvaluation	Pearson Correlation	.197*	-.028	.209**	.159*	.307**	1	-.050
	Sig. (2-tailed)	.013	.724	.008	.046	.000		.531
	N	159	159	159	159	159	159	159
BudSatAGG	Pearson Correlation	.024	.043	.175*	.230**	-.042	-.050	1
	Sig. (2-tailed)	.764	.592	.028	.004	.596	.531	
	N	159	159	159	159	159	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Enter:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.315[a]	.099	.064	1.00004

a. Predictors: (Constant), PurpEvaluation, PurpPlanning, PurpStrategy, PurpForecast, PurpControl, PurpMotivation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.736	6	2.789	2.789	.013[b]
	Residual	152.012	152	1.000		
	Total	168.748	158			

a. Dependent Variable: BudSatAGG

b. Predictors: (Constant), PurpEvaluation, PurpPlanning, PurpStrategy, PurpForecast, PurpControl, PurpMotivation

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	4.829	.194		24.831	.000
	PurpControl	.102	.173	.048	.589	.557
	PurpPlanning	-.027	.176	-.012	-.154	.878
	PurpForecast	.400	.171	.185	2.342	.020
	PurpStrategy	.515	.164	.250	3.144	.002
	PurpMotivation	-.147	.191	-.064	-.769	.443
	PurpEvaluation	-.270	.192	-.119	-1.404	.162

a. Dependent Variable: BudSatAGG

Stepwise:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.230[a]	.053	.047	1.00896
2	.281[b]	.079	.067	.99803

a. Predictors: (Constant), PurpStrategy

b. Predictors: (Constant), PurpStrategy, PurpForecast

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.921	1	8.921	8.763	.004[b]
	Residual	159.827	157	1.018		
	Total	168.748	158			
2	Regression	13.360	2	6.680	6.706	.002[c]
	Residual	155.387	156	.996		
	Total	168.748	158			

a. Dependent Variable: BudSatAGG

b. Predictors: (Constant), PurpStrategy

c. Predictors: (Constant), PurpStrategy, PurpForecast

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	5.033	.111		45.167	.000
	PurpStrategy	.474	.160	.230	2.960	.004
2	(Constant)	4.815	.151		31.884	.000
	PurpStrategy	.455	.159	.221	2.870	.005
	PurpForecast	.350	.166	.162	2.111	.036

a. Dependent Variable: BudSatAGG

Hypothesis 8:

Purposes/Roles	Control	Planning	Forecast	Strategy	Motivation	Evaluation
Control	-	$\phi = 0.211, p = 0.007$ (*)	$\phi = 0.058, p = 0.461$	$\phi = 0.026, p = 0.739$	$\varphi = 0.245, p = 0.002$ (*)	$\phi = 0.197, p = 0.013$ (*)
Planning	$\phi = 0.211, p = 0.007$ (*)	-	$\phi = 0.074, p = 0.342$	$\phi = 0.139, p = 0.08$	$\phi = 0.111, p = 0.163$	$\phi = -0.028, p = 0.722$
Forecast	$\phi = 0.058, p = 0.461$	$\phi = 0.074, p = 0.342$	-	$\phi = 0.056, p = 0.481$	$\phi = 0.025, p = 0.754$	$\phi = 0.209, p = 0.008$ (*)
Strategy	$\phi = 0.026, p = 0.739$	$\phi = 0.139, p = 0.08$	$\phi = 0.056, p = 0.481$	-	$\phi = 0.173, p = 0.029$ (*)	$\phi = 0.159, p = 0.045$ (*)
Motivation	$\varphi = 0.245, p = 0.002$ (*)	$\phi = 0.111, p = 0.163$	$\phi = 0.025, p = 0.754$	$\phi = 0.173, p = 0.029$ (*)	-	$\phi = 0.307, p = 0.000$ (*)
Evaluation	$\phi = 0.197, p = 0.013$ (*)	$\phi = -0.028, p = 0.722$	$\phi = 0.209, p = 0.008$ (*)	$\phi = 0.159, p = 0.045$ (*)	$\phi = 0.307, p = 0.000$ (*)	-