Malte Hemsing
Fadi Baker

The Effects of Tight Budgetary Control on Managerial Behaviour in the Swedish Public Sector: Emphasizing Motivation, Commitment, Satisfaction, and Stress

Business Administration
Master’s Thesis
15 ECTS

Term: Spring 2013
Supervisor: Johan Quist
Abstract

This thesis study is about the effects of tight budgetary control on managerial behaviour in the Swedish public sector. Managerial behaviour represents the four variables; motivation, organizational commitment, stress, and satisfaction. As previous research mostly investigated the effects of tight budgetary control on organizational performance in the private sector, this study can be seen as one of the first that focus on managerial behaviour and is based on the public sector. For the data collection process, an online questionnaire was created that has been distributed via email to the different participants. Moreover, the study is based on a sample of 62 managers from different municipalities and universities throughout Sweden.

The result of the thesis research study revealed that the majority of the local managers in the Swedish public sector actually experience tight budgetary control. Furthermore, the statistical test of the created hypotheses showed that the behavioural factors, both, organizational commitment and stress were respectively negatively and positively related with tight budgetary control. However, for the behavioural variables of motivation and satisfaction no significant results have been found.

Keywords: Tight budgetary control, motivation, organization commitment, stress, satisfaction.
# Table of Contents

1. Chapter: Background................................................................................. 6  
   1.1. Introduction......................................................................................... 6  
   1.2. The Central Government and the local Governmental Organizations.... 8  
   1.3. Fiscal Policy and Public Budgeting in Sweden................................. 10  
   1.4. Problem definition: ............................................................................ 11  
   1.5. Research Questions............................................................................. 12  
   1.6. Methods: ............................................................................................ 13  

2. Chapter: Literature Review..................................................................... 14  
   2.1. Budget Definition................................................................................ 14  
   2.2. Budgets as Control Mechanism......................................................... 15  
   2.2.1. Budget Control.............................................................................. 17  
   2.2.2. Tight Budgetary Control................................................................. 18  
   2.3. Managerial behaviour ...................................................................... 19  
   2.4. Motivation........................................................................................... 20  
   2.5. Organizational Commitment.............................................................. 21  
   2.6. Stress.................................................................................................. 23  
   2.7. Job Satisfaction.................................................................................. 24  

3. Chapter: Research Methodology.............................................................. 26  
   3.1. Research Approach............................................................................ 26  
   3.1.1. Quantitative Research Approach.................................................... 26  
   3.2. Data Collection Method..................................................................... 27  
   3.2.1. Sampling......................................................................................... 27  
   3.2.2. Response Rate.............................................................................. 28  
   3.2.3. Questionnaire................................................................................ 29  
   3.3. Research Model and Hypotheses Formulation................................. 30  
   3.3.1. Hypotheses Formulation................................................................. 31  
   3.4. Process of Analysing the Data and Testing the Hypotheses............... 33  
   3.5. Reflection and Limitations of the Data Collection Process.............. 34  

4. Chapter: Results and Analysis................................................................ 35  
   4.1. Reliability Analysis and Index creation............................................ 35  
   4.2. Overview of the Descriptive Statistics............................................. 36  
   4.3. Do the respondents really experience TBC?.................................... 37  
   4.4. MANOVA and Hypotheses Testing with SPSS............................... 40  

5. Chapter: Discussion.................................................................................. 47
6. Chapter: Conclusion ................................................................. 50

7. References: .......................................................................... 52

8. Appendix.............................................................................. 58

  8.1. Survey Questionnaire: ....................................................... 58
  8.2. Detailed description of Index Creation............................... 69
      8.2.1. Tight Budget Control Index ......................................... 69
      8.2.2. Motivation Index .......................................................... 69
      8.2.3. Commitment Index ...................................................... 70
      8.2.4. Satisfaction Index ....................................................... 70
      8.2.5. Stress Index ............................................................... 70
1. Chapter: Background

The background part of the Thesis will first give an overall introduction to the topic and highlight how the current economic situation is highly appropriate to discuss the topic of Tight Budgetary Control. Second, as the Thesis focus on the Swedish public sector, an overview about the Swedish government system, as well as an overview about the historical and current economic situation in Sweden is given and the Swedish budgeting process is discussed. Third, the main problem is defined, the research questions are identified and a first overview of the methods for data and literature collection is stated.

1.1. Introduction

Since many years, budgets are used throughout private and public organizations to set objectives and to control and align managers’ behaviour. Depending on whether the organization is operating in the private or public sector, the budget is established in order to fulfil certain requirements. Considering the performance requirement for the budget, the private sector is profit orientated, whereas the public sectors budget achievements are evaluated based on services provided by the organization. However, as the thesis has its main focus on the public sector, one can emphasis that public organizations recognized major challenges in the way their budgets were affected over the recent years (Nutt 2005).

The Financial Crisis of 2008, as well as the current Euro-crisis heavily impacted the financial and economic situation of most European countries and forced them to rapidly adapt their financial and budgetary policies according to austerity plans and rising deficits. As the new policies required major cuts in public budgets, in order to decrease deficits and governmental debt levels, there has been major needs for effective governance and budgetary control to ensure sound governmental financial management and probity (Oecd.org 2013).

However, these governmental austerity policies not only affect the general public with the burden of decreased public services provided to the population, increased unemployment rates, and more poverty, but also have an effect on budgetary control measures and how freely managers of public organization are able to spend government budgets. Furthermore, this means that managers of public, as well as
private organizations, are probably closer monitored how to spend the budget in times of austerity or economically difficult situations. As the technical term of setting a budget is considered as the budgetary process, accountants view the process of monitoring how the budget is spend as budgetary control (Banks & Giliberti 2008).

Budgetary control represents a widely applied mechanism to assess the performance of managers and to communicate the objectives, strategy, and planning process, how an organization is able to obtain the desired outcome while closely monitoring expenditure. Hence, it is also often used as a tool to form cultivate and supportive behaviour of managers, that is aligned with the organizational objectives. Nevertheless, the level of participation and support depends on the budgeting approach of the organization’s top management (Banks & Giliberti 2008).

Organizations can apply two types of behavioural budgeting. On the one hand, management is able to apply an authoritarian approach, which builds upon a hierarchical structure with many layers of control and supervision to enforce that organizational requirements are implemented according to the desire of top management. This approach to budgeting is widely known as “top-down” approach, where top management decides on budget targets and closely monitors managerial implementation. In the case at hand, this approach can also be considered, taking the previous research of Van der Stede (2001) into account, as a tight budgetary control approach.

On the other hand, the “bottom-up” approach relies on the participation of individuals by taking active participation in the budgeting process. However, this approach is often considered to increase individuals’ motivation and could be related to a loose budgetary control approach, which has been described by Van der Stede (2001).

Nevertheless, during the last 20 years, many researchers in the area of accounting were engaged in intensive empirical investigations into the relationship between participative budget setting and its resulting performance. However, especially in the field of tight budgetary control (TBC) many areas of research remained to be discovered. Van der Stede (2001), who investigated as one of the first the different
measures of tight budgetary control, delivered quite interesting results how to determine whether a firm uses either a tight or loose budgetary control approach.

Based on the findings of Van der Stede (2001) and the current economic situation in Europe, still struggling the remains of the Financial Crisis and Euro Crisis, gives an opportunity for this thesis to investigate how managerial behaviour is influenced by economic difficult times and expected implementation of tight budgetary control mechanism in the public sector.

In the remainder of this thesis, the study will focus on the following topics of interest. The first chapter will discuss the background information, the problem definition as well as the research questions for this thesis. The second chapter will critically review existing literature about the topic and highlight the different variables more specifically. The third chapter about the methodology describes the nature of the research approach, the development of the survey questionnaire, and the hypothesis development process. The fourth chapter will analyse the collected data and statistically test the developed hypotheses. The fifth chapter discuss critically the result of the analysis and makes a comparison to previous research findings. The last chapter will summarize the findings of the thesis in the conclusion and gives recommendation for further research in this area.

1.2. The Central Government and the local Governmental Organizations

In order to better understand the Swedish government system, which is necessary to get a general overview how different public organizations or government institutions are effected by TBC, the thesis will elaborate on the Swedish governmental system.

The Swedish governmental system includes three levels; the national government, the regional government, and the local government. Moreover, as Sweden has become a member of the European Union, there has been an additional European governmental level, which has acquired increasing importance during the last years.
At the national government level, the Swedish population is represented by the Riksdag, which is the Swedish parliament and has legislative power. Moreover, the Riksdag represents the governmental body that acts as the main decision-making body and is elected every four years by the Swedish population. As the main decision-making body the Riksdag makes decisions about the laws that have to be adopted by the government, determines the central government budget, evaluates the work of the public agencies and the government, cooperates with the EU, and creates foreign policies. However, the decisions and policies, which are discussed and declared by the Riksdag, have to be implemented by the government. Furthermore, the different governmental agencies support the government, which are different ministries as for example the Ministry of Education and Science, which is in turn responsible for university sector. Thus, universities underlie national responsibility (Regeringskansliet 2013).

The governance body that follows after the national level is the regional level, it has to be mentioned that Sweden is divided into 21 regional counties. Each of these regions has a regional government that embodies the county councils and the county administrative boards. The responsibility of the regional institution is for example the health care system and the regional hospitals, just to mention one area (Regeringskansliet 2013).

Considering the local government level, Sweden is divided into 290 local municipalities. Each of the municipalities represents an elected council that is in charge for the decisions on a municipal level. The different municipalities play an important role in the Swedish governmental system due to the fact that they are responsible for a wide range of decisions, which affect local services and facilities including infrastructure, water supply, schools, elderly care and children care. Furthermore, the municipalities are authorized to envy income tax on the local residents and are able to charge for local services. Hence, the local municipalities are able to select from a wide spectrum which services to provide. Nevertheless, they are still committed to offer certain basic services (Regeringskansliet 2013).
1.3. Fiscal Policy and Public Budgeting in Sweden

Nowadays, the Swedish economy seems to be one of the strongest in Europe and due to the fact that Sweden does not belong to the Euro currency area, the economy is also not as heavily affected by the current Euro-crisis. However, the following part will give an overview how suddenly the economy can change based on historical facts and the Swedish budgeting process, as well as the current economic situation in Sweden is discussed.

In the late 1980s, Sweden recognized the largest budget surpluses among all OECD countries. But only few years later, in the 1990s, the country experienced the largest deficit from all OECD countries and at the same time government debt almost doubled. However, Sweden managed to balance out the deficit by the end of the 1990s and was recognized from then on as a stable country with significant surpluses until the financial crisis hit the Swedish economy. The result of the financial crisis has been a deficit of around 1 percent of the Gross Domestic Product (GDP), which was turned into a small surplus by 2011 due to subdued economic developments. However, in the course of the Euro-crisis, also the Swedish economy had to suffer, which was reflected in a decrease in net lending and a small deficit for 2012 that is also expected to be reflected in the result of 2013. Nevertheless, forecasts predict the deficit to be recovered by 2014 (Regeringskansliet 2013).

The Swedish budgeting process includes two annual presentations, where the Swedish Finance Minister presents the Fiscal Policy Bill and the Government’s Budget Bill in front of the Riksdag. The two documents differ mainly in content. The Fiscal Policy Bill, which is presented in spring, includes proposed guidelines for budget policy and economic policy for the next couple of years. The Budget Bill, in turn, which is presented in autumn, transfers these suggested guidelines into a central government budget for the coming year. This means that the Budget Bill includes detailed expenditure distributions for the different public areas. However, one of the most important decisions of the Riksdag is regarding the proposed Budget Bill and its revenue and expenditure distribution because after the Riksdag has agreed to the Budget Bill, the Government is able to use the central government budget. Moreover, the Government is supported by around 390 government agencies that help to implement the decisions of the Riksdag. Furthermore, the government
budget is distributed to the public sector, which includes the central government, county councils, and the municipalities. Nevertheless, the central government closely monitors on which part of the public sector the money is spend (Regeringskansliet 2013).

Considering the tax system in Sweden it can be mentioned that the municipalities are not solely dependent on the central government budget due to the fact that the local municipalities are entitled to envy income tax. Hence, it could be that different municipalities recognize slightly different tax rates, which in turn can be used to increase local municipality budgets (Regeringskansliet 2013).

1.4. Problem definition:

As most countries experience the fifth year of economic recession due to the events of the global financial crisis of 2008 and European debt crisis, the overall condition of financial markets have been stabilized. Nevertheless, the international situation is still frightening, as Euro countries recognize weak economic growth and the United States reflects a slowdown in economic health (Regeringskansliet 2013).

These events heavily affect the performance of the Swedish economy by reflecting rising unemployment rates and low economic growth in 2012 (Regeringskansliet 2013). However, as economist expected that the current situation will continue through 2013 and 2014, the central government is expected to cut budgets and to apply a TBC system. The increase in control of public spending is expected to affect local governments throughout Sweden and local politicians and leaders of municipalities are required to adjust budgets for public services. However, local politicians, public department managers, and board members of the local municipalities, will be affected by increased control how public spending is distributed, which in turn, is expected to influence managerial behaviour.

As previous researchers, such as Van der Stede (2001), have highlighted in their findings that management control system should be adopted to changing environmental events, they noticed that times of financial distress and economic
downturns are most likely closely related to the implementation of TBC systems. Furthermore, the implementation of TBC system is expected to have an effect on managerial dysfunctional behaviour and managerial short-term orientation. The cause for the expectation of such negative consequences is that employees, mostly on the managerial level, are only evaluated whether or not they achieve budget targets (Van der Stede 2000).

Considering the current economic situation and the above described effects of governmental intervention, as well as the expected effect on managerial behaviour increases the importance for research in this area. Hence, this Master Thesis will carefully investigate the Effects of Tight Budgetary Control on Managerial Behaviour in the Swedish Public Sector and will pay special intention into the investigation of four behavioural variables. These four behavioural variables are motivation, organizational commitment, stress, and satisfaction.

1.5. Research Questions

In order to answer the problem statement of this thesis and to give some reasonable advise how the relationship between TBC and the four behavioural variables, which are motivation, organizational commitment, stress, and satisfaction, can be described, the study attempts to answer the following main research question and the identified sub-research questions.

Main Research Question:

- What is the effect of using TBC on managerial behaviour?

Sub – Research Questions:

- How does TBC affect managerial motivation?
- What is the impact of using TBC on managerial organizational commitment?
- Does the implantation of TBC increases managerial stress?
What is the effect of TBC on managerial satisfaction?

1.6. Methods:

In order to answer the proposed research questions about the effects of TBC on managerial behaviour in the Swedish public sector, the thesis will make use of primary data and academic literature.

The first part of the thesis, which is based on a theoretical approach will review existing literature about budgetary control and the four behavioural variables; motivation, organizational commitment, stress, and satisfaction. In this part, the study mainly relies on the use of academic literature, which has been collected through the search of academic databases and Internet search engines, such as Google. The collected literature mainly consists of academic journals, academic education literature, and governmental reports about budgeting and forecast for the Swedish economy, which were found on the Swedish government website.

For the second part of the thesis, the study relies on the use of primary source data. The primary data has been collected through the distribution of an online survey, which was sent to politicians, department managers, and leaders in different Swedish municipalities.

However, detailed description of the data collection process and about the development of the survey questionnaire can be found in the methodology section.
2. Chapter: Literature Review

In the following section, the study will review existing literature about budgets, budgets as control mechanism, budgetary control, tight budgetary control, and discuss the four behavioural variables motivation, organizational commitment, stress, and satisfaction.

2.1. Budget Definition

Based on the financial literature, a budget is a financial plan that is used to help coordinate business activities, whereas cash is budgeted most often (Harrison & Horngren 2008).

According to Argyris (1953), budgets represent accounting techniques, which are created in order to control costs through people. These accounting techniques have a large impact on the behaviour of most people within an organization due to the fact that not achieving certain budget objective often involve punishment, where in turn, meeting these budget targets reflect great rewards for employees. Comparing the view on budgets from Argyris (1953) with more recent literature by Drake and Fabozzi (2010), who also emphasize the importance of budgets as “most successful management techniques” to control managers and to align them to organizational objectives, which can have a quite rewarding impact if the budgeting process is well understood, shows that the interpretation has remained quite the same over the last years. However, as budgets are present within each definition process, creation process, or implement process of an organizational policy, they can have a huge direct effect on the behaviour of employees; thus it is highly interesting to further investigate them.

Furthermore, Argyris (1953) mentioned in his research that a negative association of human behaviour towards the implementation of budgets could be explained by keeping the following points in mind.

1) Budgets are evaluation techniques. Because they try to create goals against which to measure employees’ performance, they naturally are complained about.
2) Budgets represent one of the few evaluation methods, which are always in writing and consequently concrete. Hence, supervisors could use them once in a while as “whipping posts”, which means that they use them in a way to complain about certain totally unrelated issues.

3) Budgets can be seen as pressure devises. Hence, they can create the same unfavourable reactions as any other pressure mean could produce.

This means if top management carefully considers the three points mentioned above and formulate budgets in a way that subordinates are able to interpret them in the correct manner, and are not forced to apply dysfunctional behaviour to enforce budget objectives, they are most likely to stimulate the achievement of organizational and behavioural goals. According to Tyales (1998) budgets can have a motivational effect on managers but only if managers think that they are also most likely to achieve the budget objectives. Also Raghunandan et al. (2012) agree with the fact that social and behavioural aspects are an integral part of the budgeting process and that organizations have to carefully consider those effects as budget achievement heavily depend on the commitment of managers and employees.

2.2. Budgets as Control Mechanism

Previous literature has concentrated on different kinds of measurements, which are used to control different kind of issues. Drucker (1964) emphasized a distinction between “controls” and “control” and mentioned that more “controls” do not necessarily leads towards more “control”.

“Controls deal with facts, that is, the events of the past. Control deals with expectations, that is, with the future. Controls are analytical and operational, concerned with what was and what is. Control is normative, concerned with what ought to be, with significance rather than meaning.“ (Drucker 1964; 286).

This means that “Controls” is concerned with measurement and information, whereas “Control” refers to giving directions. However, the expression “control” is
used and described in many different ways. There are authors that describe the expression in a narrowly way that mostly consider the process of measurement and feedback. Other authors, such as Merchant (1985), follow a rather wider definition based on a behavioural sense that embraces everything that ensures that employees in an organization implement strategies as previously determined. Moreover, Ouchi (1979) and Merchant (1998) adopted an approach that identifies control mechanism in three specific categories:

1) Behavioural control
2) Clan and social control
3) Output control

Behavioural control refers to the control of certain behavioural actions of employees. This control approach is only effective if managers are aware of the behaviour that is beneficial and also are able to influence the outcome of the action. This means that managers have to observe individuals while they are working (Merchant 1998).

Clan and social control is the same as personal or cultural control. However, personal control is defined as supporting the employees to execute their task in the right way by forming the individual’s innate natural tendencies to act accordingly and to control themselves. Cultural control is based on the shared values, beliefs, and norms of the employees of an organization, which in turn, affect the action of them. Means, which are used to align those values of individuals in an organization, are for example the Code of Conduct or group incentive systems (Merchant 1998).

Output control can be achieved by implementing performance measures in order to decrease inappropriate behaviour, set performance objectives, evaluate performance, and to either punish or reward goal achievements. This is necessary due to the fact that there could be a conflict of interest between the individuals and the organization; hence to align the interest of both parties, control mechanism are necessary (Macintosh & Quattrone 2010).

Management accounting control systems are the most often applied control forms in organizations. However, there are a variety of explanations why management accounting control systems recognize such a high rate of implementation throughout businesses.
First, as most organizations are involved in a variety of different activities, they have to find a common measure to express the result of all their different operations. Second, the accounting measures produce all relevant liquidity and profitability measures, which are requested by stakeholders of the firm in order to judge the overall financial performance of the organization. Third, financial output control is even recommended in uncertain conditions when other activities are unclear, for example by considering market developments (Macintosh & Quattrone 2010).

Management accounting control systems are divided into two main components. The first one reflects the formal planning process, which in turn includes long-term planning and budgeting in order to set objectives. The second one involves the establishment of the so-called responsibility center, which include centers for revenue, cost, profit, and investments. The above mentioned two components can be used as control mechanism by considering derivations from the pre-set performance objectives, based on which managers’ performance can be evaluated.

### 2.2.1. Budget Control

Budget control can be explained as the process of using budgets as control mechanism to evaluate managers’ performance by considering deviations from budget figures to actual figures. Accordingly, budgetary control is a system that uses budgets as a controlling and planning tool. Furthermore, the Chartered Institute of Management Accountants of England and Welse, defined the process of budgetary control in the following way:

“Budgetary control is the establishment of budgets relating to the responsibilities of executives of a policy and the continuous comparison of the actual with the budgeted results, either to secure by individual action the objective of the policy or to provide a basis for its revision.”

The advantage of using budgetary control is that top management is able to detect derivation from the plan and is able to react accordingly in order to increase efficiency throughout business activities (Venkatasivakumar 2009).
2.2.2. **Tight Budgetary Control**

In this section of the literature review, the study will discuss and highlight existing research about the main topic TBC.

However, the previous research about TBC and the effect on the variables of interest; motivation, organizational commitment, stress, and satisfaction is either really limited or not existing. Some of the existing research of TBC is related to the performance of the organization.

Dahlan et al (2007) investigated the relationship between TBC on firms’ performance and also included the effect of two contingent variables, which were business strategy and the external environment. Utilising regression analysis, Dahlan et al. (2007) experienced a positive relationship between TBC and firm performance by using a prospector strategy. Moreover, the external environment and a defender strategy did not indicate a moderation effect on the relationship between firms’ performance and TBC.

Existing literature have stated many different definitions of budget control systems and researchers have invested considerable time into investigating this topic. However, TBC has been rather less interesting until few years ago.

Anthony and Govindarajan (1998) described TBC based on managers’ performance evaluation of attaining budgetary objectives during an accounting period. This means that TBC emphasize budget attainment. Merchant (1998), in turn, rather relates tight budget control to the impact of decision making, which highlights that tight control has a severe impact on decision making than loose control. Furthermore, he emphasized that TBC is positively related to a high degree of certainty that individuals act in the interest of the organization.

One of the well-known researchers, who achieved extensive contribution for his findings in the field of TBC, is Van der Stede. Van der Stede (2001) investigated, which variables actually are related to TBC. Based on a collection of different variables, which were mentioned within previous research in this area, he found significant results that the following variables determine TBC if top management:

(1) Puts much emphasis on meeting the budget;
(2) Does not easily accept budget revisions during the year;

(3) Has a detailed interest in specific budget line-items;

(4) Does not lightly tolerate deviations from interim budget targets; and,

(5) Is intensively engaged in budget-related communications.

These five measurements, which Van der Stede considered as fundamental determines of TBC, will also be used within this study in order to determine whether a firm is applying loose or TBC.

2.3. Managerial behaviour

Previous literature about managerial behaviour state many different ways how to define managerial behaviour. Managerial behaviour as a term is most often used as a concept in behavioural science. This includes almost all activities and actions of an organism within the concept of behaviour. However, to thoroughly describe managerial behaviour it is necessary to primarily define answers to two distinct questions. First of all, it has to be described who the managers are and secondly which important indicators actually define or impact their behaviour (Das 1982).

A manager is mostly defined as a person that coordinates, organize, plans, and controls, business organizations and the different activities within the organization and its employees. Hence, the expression or term can be interpreted as a multi-meaning concept. Furthermore, managers are mostly considered to have a distinct status in an organization and besides the expression, there are many other terms used interchangeable such as senior officer, executive, superintendent, etc (Das 1982).

In order to define managerial behaviour the interpretation process seems to be more complex, due to the fact that several questions have to be answered. First of all, the personal demands of the managerial job function, the different success factor for managerial performance, and the different managerial tasks have to be understood to better define managerial behaviour (Das 1982).
According to Campell et al. (1970) managerial behaviour is defined based on a multifunctional relationship between motivation, ability, and opportunity. However, most of the former research in this area has considered the effect of leadership on subordinates’ behaviour by considering motivation, commitment, and other related job attitudes. For instance, Singh and Pestonjee (1974) found evidence that supervisory behaviour has significant impact on the subordinates’ job satisfaction.

2.4. Motivation

Motivation is a basic psychological process. It is the process of stimulating people to give everything they can to work and to achieve an organization goal. Luthan (1998) defines motivation as “a process that starts with a physiological deficiency or need that activates behaviour or a drive that is aimed at a goal incentive”. Work motivation, in turn, describes “a person’s desire to work hard and work well – to the arousal, direction, and persistence of effort in work settings” (Rainey, 1997, p. 201).

There are many ways of stimulating people, who work for an organization and to make them more satisfied, as well as to increase their commitment to work for the organization. However, monetary compensation is not the only motivator even though if it is the most commonly used one. There are also other incentives, which represent non-monetary rewards that can also serve as motivators. For instance, benefits such as promotions, safety environments and a good relationship with managers or owners (Tremblay et al. 2009). Naka (1992) investigated the relationship between motivation and the level of difficulty that managers face to achieve budget goals. In his findings, he states evidence that there is a negative relationship between managerial motivation and the difficulty to achieve the organizational budgets.

Luthan (1998) states that motivation should not be thought of as the only psychological component that has an impact on behaviour. Former articles stated that behaviour is the reflection of motivation; hence a widespread thought has been as if one increases employee motivation, it immediately is reflected in good employee behaviour (Roberts 2006).
Furthermore, other researchers’ findings suggest that public service employees are more greatly influenced by non-monetary rewards than monetary rewards such as salary. Wright (2007) explains, “the importance employees place on contributing to the public sector mission of their organizations may provide intrinsic rewards that compensate for the low levels of extrinsic rewards commonly associated with public sector work” (Wright 2007; p. 54).

Buelens and Broeck (2007) conducted an analysis of the differences in work motivation between public and private sector organizations. In the study they surveyed 3,314 private sector and 409 public sector employees in Belgium. They found that public sector employees were more strongly motivated by their commitment to work in a supporting sustainable working environment than their private sector counterparts.

Further research investigated whether preventive and detective controls have different effects on employee performance and motivation, the results disclose that detective controls with immediate response are equally as effective in improving employees’ performance on the controlled dimension, and preventive controls reduce self-motivation for the task relative to all other conditions (Margaret et al. 2012).

2.5. Organizational Commitment

Organizational commitment can refer to identification, involvement and loyalty (Buchanan 1974). According to this, identification refers to the adoption of organizational goals and values by a person who is working for an organization. Involvement refers to a person’s participation in the companies’ activities and to act as a decision maker or to be directly involved in the company’s strategy formulation process and their objectives. Loyalty refers to the concern and commitment toward his or her organization (Buchanan 1974).

Organizational commitment has interested and attracted many researchers to examine whether employee’s commitment has a positive or negative effect on performance (Mowday et al. 1979). For many years, organizational commitment has
been an often used case study, as it was considered to positively influence performance (Larson & Fukami, 1984; Van Maanen 1975). Therefore it is believed that employees who are committed to their organization will perform better than employees that are less committed. Some other researchers studied and investigated employees’ commitment in the private and public sector, and the results which have been found in these studies are mixed and show some differences in organizational commitment between employees in the private sector and employees in the public sector. However, employees working in the public sector are less committed than employees working in the private sector (Gortner et al. 1987). Hoy and Sousa (1984) found that more participation in decision-making will increase employee’s loyalty in the public sector.

Several studies use organizational commitment as an intervening variable to predict the relationship between budgetary participation and performance. Managers’ or employees’ loyalty is one of the most significant factors that directors in particular must have in mind. Commitment is usually measured with the loyalty questionnaires and can cause serious negative consequences when not in a high level because less commitment means less performance (Aziri 2011).

Meyer and Allen (2004) state that committed employees will work harder to achieve the organization’s goals and reduce costly turnover. Carol & James (1996) studied organizational commitment in many public sector areas, and the results show organizational commitment of public employees working in some public sector areas are not that different from that of employees in other sectors.

Papinczak (2012) investigated the perception of job satisfaction relating to affective organizational commitment, he found that affective commitment impacts significantly on factors considered important by employees, such as absenteeism, work performance and staff retention. Another study have been performed by Radiah (2012), who focused on the public sector and the result of the study shows a positive effect between budget participation and managerial performance, and a positive effect between budget participation, organization commitment, and managerial performance.
2.6. Stress

Stress can affect anyone at work and the effect on employees’ physical and mental health can be quite costly (Ganster & Loghan 2005). Stress is a natural reaction to too much pressure and can make employees feel nervous, depressed, and angry or out of control it depends on the employees’ mental, physical or behavioral situation (Health &Safety Executive UK). Stress has been also viewed as dysfunctional for organizations and their employees (Kahn et al. 1964). Organizations in public and private sector are responsible for setting the atmosphere for their employees. However, more stability at work increases employees productivity and reduces job related tension and stress (Health &Safety Executive UK). Nevertheless, the financial crisis increased unemployment rates throughout different sectors, which created increased job related tension and stress for managers and employees, as they always had to live with the fear that they could be the next whose placement will be terminated.

Beehr et al. (2000) state in their findings that there is a negative relationship between occupational stress and employees’ performance that can have a huge impact on the individual psychology.

According to Simmons (2000), there are two types of stress, positive stress which is referred to as stress that has motivational characteristics and negative stress which is seen as having the opposite effect, and these two types are connected and cannot be separated. Simmons referred to these two kinds of stress in a metaphor; they are mixed together like water in a bathtub. Where positive stress is like cold water and negative stress is like hot water. When hot and cold water is filled into a bathtub it will be combined and the water temperature will be determined by the quantity of hot and cold water, whereas a balance is always the better solution to keep the stress in the middle (Simmons 2000).

If we asked ourselves what stress exactly means, there is a nice definition by Morrow (2002) “Stress is the body's reaction to a change that requires a physical, mental or emotional adjustment or response”.

23
According to Rose (2003), there is a tendency to create high levels of stress regarding time, for instance working for many hours can reduce employees productivity and decrease their performance while increasing the managerial stress level.

Kanji and Parvesh (2009) studied and investigated the psychosocial system for work well-being on measuring work stress by causal pathway, and they described four psychosocial work conditions for a worker at work through the four components given below:

- **Job support**: Job resources, encouragement, social support, career opportunities and job security (both organisational and peer support).
- **Job demand**: Workload, performance demands, task requirements, mental burden, human contestability and emotional and social changes.
- **Job control**: Structure of workflow, autonomy, handling work assignments, and learning and feedback.
- **Job environment**: Positive working environment, understand their role in the organization, management of organizational change.

### 2.7. Job Satisfaction

What is job satisfaction and how can we define the meaning of job satisfaction? Previous literature state many different ways how to interpret the meaning of job satisfaction and all the different authors have different definition for the term.

Hoppock (1935) defined job satisfaction as “any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, “I am satisfied with my job” (p. 47). According to Mitchell and Lasan (1987), job satisfaction represents the most important and most frequently studied attitude that reflects organizational behaviour. Considering job satisfaction, it is important to understand the possible reasons that lead to job satisfaction and dissatisfaction. Herzberg et al. (1957) identified several characteristics of satisfied/dissatisfied employees. They indicated that morale is high when people begin and start their first jobs. However, morale decreases during the next coming years and remains at a
relatively low level until workers are in their late twenties or early thirties. These findings conclude that workers begin with high morale, which drops during the first few years and remains low for a number of years thereafter. Nevertheless, other studies figured out that by increasing motivation, it is possible to also stimulate job satisfaction (McNeese-Smith 1997).

Thomas & Kelly studied whether job satisfaction–job performance relationship varies across cultures and they found that the satisfaction-performance relationship is stronger in low-power-distance cultures, which means cultural differences can affect either positively or negatively the relationship (Thomas & Kelly 2009).

Mateja & Brigita (2012) investigated job satisfaction of nurses and identifying factors of job satisfaction in 4 Slovenian Hospitals, and they found some significant differences between leaders and employees, as nurse leaders had high job satisfaction compared with nurses and job satisfaction increases with the level of education.
3. Chapter: Research Methodology

The following section about the applied research methodology will provide an overview how the research process for this Master Thesis is performed. More specifically, the research approach, which is used, is highlighted, the data collection process is emphasised, and the research model, as well as the process of formulating the research hypotheses is discussed.

3.1. Research Approach

As the thesis makes use of primary data, which is collected through the use of a survey questionnaire, and the research questions will be reformulated into research hypotheses, the study will consider a quantitative research approach.

3.1.1. Quantitative Research Approach

Quantitative research approaches rely on sophisticated and systematic procedures of testing, verifying, and proving research hypotheses. The main aim of a quantitative research approach is to test whether a common prediction or generalization of a theory is true or not. However, in the data collection process a quantitative approach relies on predetermined response classifications, such as in survey questionnaires or structured interviews with which statistical methods can be used in the data interpretation process (Bryman & Bell 2011).

The research approach for the data collection for this thesis is based on a quantitative approach. As the before mentioned research questions are reformulated into research hypotheses, this presents the first step towards a quantitative approach. Furthermore, primary data is collected through the use of an online email survey, which is also intended to be the base for the statistical analysis and interpretation process.

Even though, the research study about the effect of TBC on managerial behaviour represents a new field of investigation, the aim of the study is to collect standardized information about different sectors of the public Swedish market. The findings or
outcomes of the study should be standardized and comparable to provide a base for further investigation in this field. As this study is considered to provide first insights into the effect of TBC on managerial behaviour, it should be a starting-point for further studies in this area and could be extended to be tested in other countries. Hence a quantitative approach for this research is preferred over a qualitative approach, which is often more common for investigation into new research areas.

3.2. Data Collection Method

The data collection process represents an important step for any kind of research method. An inappropriate data collection process is able to heavily impact the research outcome and could lead to an invalid research result.

3.2.1. Sampling

The sampling population of the research study comprised managers working in a municipality institution or a university in Sweden. The survey questionnaires were sent, via e-mail, to the local managers in the different municipalities or universities in Sweden. Moreover, the email addresses of the different local managers in the different municipalities were extracted from the websites from the different municipalities or universities. A list of all the different municipalities and universities can be seen below, as well as how many managers were contacted in the data collection period from the 23th of April until the 06th of May.
Table 1: Overview of the different municipalities to which the survey was sent and how many managers were contacted.

<table>
<thead>
<tr>
<th>Areas</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boras</td>
<td>22</td>
<td>3.61%</td>
</tr>
<tr>
<td>Båstad</td>
<td>33</td>
<td>5.42%</td>
</tr>
<tr>
<td>Goteborg</td>
<td>48</td>
<td>7.88%</td>
</tr>
<tr>
<td>Gotland</td>
<td>35</td>
<td>5.75%</td>
</tr>
<tr>
<td>Halmstad</td>
<td>24</td>
<td>3.94%</td>
</tr>
<tr>
<td>Haninge</td>
<td>21</td>
<td>3.45%</td>
</tr>
<tr>
<td>Huddinge</td>
<td>12</td>
<td>1.97%</td>
</tr>
<tr>
<td>Kalmar</td>
<td>17</td>
<td>2.79%</td>
</tr>
<tr>
<td>Jonkoping</td>
<td>8</td>
<td>1.31%</td>
</tr>
<tr>
<td>Karlskrona</td>
<td>51</td>
<td>8.37%</td>
</tr>
<tr>
<td>Karlstad</td>
<td>68</td>
<td>11.17%</td>
</tr>
<tr>
<td>Kiruna</td>
<td>25</td>
<td>4.11%</td>
</tr>
<tr>
<td>Kristianstad</td>
<td>4</td>
<td>0.66%</td>
</tr>
<tr>
<td>Laholm</td>
<td>17</td>
<td>2.79%</td>
</tr>
<tr>
<td>Linköping</td>
<td>11</td>
<td>1.81%</td>
</tr>
<tr>
<td>Malmö</td>
<td>12</td>
<td>1.97%</td>
</tr>
<tr>
<td>Skane</td>
<td>5</td>
<td>0.82%</td>
</tr>
<tr>
<td>Stockholm</td>
<td>36</td>
<td>5.91%</td>
</tr>
<tr>
<td>Umea</td>
<td>45</td>
<td>7.39%</td>
</tr>
<tr>
<td>Uppsala</td>
<td>33</td>
<td>5.42%</td>
</tr>
<tr>
<td>Värmland</td>
<td>26</td>
<td>4.27%</td>
</tr>
<tr>
<td>Österåker</td>
<td>26</td>
<td>4.27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>609</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

3.2.2. **Response Rate**

A total of 62 completed survey forms were collected in the given period of data collection, which results to a relatively low response rate of 7.7%. However, in the table below it can be seen how the responses are distributed throughout the different public sectors.
Table 2: Profile of Respondents According to Public Sectors.

<table>
<thead>
<tr>
<th>Public Sectors</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health &amp; Social care</td>
<td>9</td>
<td>14,5</td>
<td>14,5</td>
<td>14,5</td>
</tr>
<tr>
<td>Education &amp; Labour Market</td>
<td>33</td>
<td>53,2</td>
<td>53,2</td>
<td>67,7</td>
</tr>
<tr>
<td>Growth &amp; Community Development</td>
<td>7</td>
<td>11,3</td>
<td>11,3</td>
<td>79,0</td>
</tr>
<tr>
<td>Other Services</td>
<td>13</td>
<td>21,0</td>
<td>21,0</td>
<td>100,0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
<td><strong>100,0</strong></td>
<td><strong>100,0</strong></td>
<td></td>
</tr>
</tbody>
</table>

3.2.3. **Questionnaire**

The questionnaire, which can be found in the appendix, contains in total 40 questions. The questionnaire has been created with an online survey and report tool, which was provided by Karlstad University. Through the online survey and report application, it was possible to send the questionnaire via email to the total sample population of interest.

The questionnaire is divided into six specific sections. The first part of the questionnaire states questions regarding the budgetary control system that is applied by the organization and to which the managers are exposed to. The second section includes questions about managerial motivation. Followed by a section about satisfaction, commitment, stress, and demographic questions. However, before the questionnaire begins with the question part, a short introduction to the survey is given. Besides, an explanation about the purpose of the research study, a section showing gratefulness and appreciation for the participation in the survey is included.

Most of the questions that are included in the questionnaire are Likert scale questions which are ranked from 1 to 7, where 1 is strongly disagree and 7 is strongly agree.
with the question at hand. Likert scale questions were chosen for the questionnaire due to the fact that the questions ask the participants about their feelings or opinions. Furthermore, a 7 point scale were preferred over a 5 point scale based on the fact that a 7 point scale increases the granularity, which in turn leads to better decision-making in the end and also increases the validity of comparing means and standard deviations.

In order to increase the validity of the survey questions, the questionnaire includes questions, which were previously used in literature about the topic of interest. Hence, the first part of the questionnaire about the applied budgetary control system, which is experienced by the respondents, is based on the “Measures of Tight Budgetary Control” that were developed by Van der Stede (2001).

The questionnaire part, which includes the questions about organizational commitment, were based on Mowday et al. (1979) measuring questions that were defined in the research about “Measuring organizational commitment”.

The survey questions regarding stress were previously defined in a study about ”Job and life attitudes of male executives” by Judge et al. (1994).

The survey questions that were used in the question part about managerial motivation were previously identified by Tremblay et al. (2009), who investigated managerial motivation and how managers respond to intrinsic and extrinsic motivational means.

3.3. Research Model and Hypotheses Formulation

The investigated research model contains five variables: four dependent variables, which are motivation, organizational commitment, stress, and, satisfaction and one independent variable, which is TBC.

The different hypotheses, which the research study will investigate, are itemized below:
3.3.1. **Hypotheses Formulation**

In order to answer the problem statement, whether TBC is either positively or negatively related to managerial behaviour in the Swedish public sector, the suggested sub-research questions are reformulated into quantitative research hypotheses. As it can be seen in the developed model above, the formulated statistical hypotheses will test the relationship between the dependent variable of TBC and the four behavioural variables motivation, organizational commitment, satisfaction, and stress.

Furthermore, to formulate the hypotheses and to make an educated guess in which direction the analysis of the collected data will result, previous research and the academic literature has been considered.

As the fundamental research question of this thesis investigates the effect of TBC on managerial behaviour, the sub-research questions will be reformulated into four hypotheses that will consider the predicted outcome of the dependent variables, motivation, organizational commitment, satisfaction, and stress.

Many businesses use budgets to establish certain performance measures on which managers’ performance can be evaluated. Often these budgets aim at increasing the motivation of managers to obtain those organizational objectives. But here the question arise, to which point is it useful to use budgets as motivational means and what effect an increase of stricter budget control measures have on managerial motivation? According to Tyales (1998), budgets only have a motivational affect if
managers believe that they are most likely to achieve the forecasted objectives. If this is not the case, budgets can have most likely the opposite effect on managerial motivation. Furthermore, according to the study about “Motivation and Casual Inferences in Budgetary Control” by Naka (1992), there is evidence that motivation is negatively related to the difficulty of achieving organizational budgets.

Considering the facts above and assuming that local municipality managers face more difficulties to achieve by the central government pre-set budgets, which in turn will affect their motivation, the study predicts the first directional hypothesis in the following way.

**H1: Managers that are confronted with a TBC system are less motivated than managers that do not experience a tight budgetary control system.**

Budget formulation can be done using a participative or top-down approach. According to Eker (2006), there are two benefits from a psychological and cognitive perspective with managerial participation in the budgeting process. The participative approach benefits from the managers’ identification and the ego-involvement with budgets objectives. Furthermore, as stated by Buchanan (1974), organizational commitment includes involvement, identification and loyalty towards an organization. Thus, it could be assumed that if managers are able to identify themselves and be involved in the budgeting process, it should have a positive affect on their organizational commitment, as well as, towards goal achievement. However, a participative budgeting approach is related towards a decentralized structure, which implies loose control. Hence, TBC is rather associated with a top-down approach, which hardly includes budget participation for managers; it could be argued that tight budgetary control is negatively related to organizational commitment. Hence, the second hypothesis is formulated in the following way.

**H2: TBC has a negative impact on managerial organizational commitment.**

In today’s business environment, especially in times of financial uncertainty, work related stress is a highly discussed issue. Employees and managers face increased fear,
uncertainty, and higher levels of work related stress due to potential layoffs or budget cuts. Emmanuel et al. (2004) emphasize that managerial performance evaluation, which is highly based on budget achievement, bears the tension of increased work related stress that in turn can cause dysfunctional behaviour and data manipulation. Based on these assumptions above, the following hypothesis is developed.

**H3: Managers that experience a TBC are more stressed than managers who do not experience a TBC.**

Brownell (1983) has been one of the first researchers who found a positive relationship between budgetary participation and managerial job satisfaction. Moreover, considering the fact that budgetary participation increases managerial job satisfaction, whereas, budgetary participation is only possible if loose budgetary control is applied, it could be argued that TBC has rather the opposite effect on managerial job satisfaction. Hence, the study will formulate the next directional hypothesis in the following way.

**H4: Managers, who experience TBC, are less satisfied than managers that do not experience a TBC.**

3.4. Process of Analysing the Data and Testing the Hypotheses

For each of the five different sections of the questionnaire, an index variable is created that will represent a reliable measurement for the variables in question. Descriptive statistics are used to reflect the central tendency of the different variables of TBC, motivation, organizational commitment, stress, and satisfaction. From the descriptive statistics it will be possible to derive first conclusions about the different shapes of the variables and in which direction the average response of the participants and the resulting outcome could lead. Based on frequency tables it will be possible to judge whether the respondents only think that they experience TBC or if they indeed face TBC at their organization. Finally, the four developed hypothesis will be tested based on a Multivariate Analysis of Variances (MANOVA).
statistical theory a MANOVA is often applied instead of conducting two or more ANOVAs. To put it in a different way, a MANOVA is mostly used to detect differences in the average values of the dependent variables. Statistically, it is of advantage to apply a MANOVA compared of using a series of ANOVAs as the likelihood of a TYPE I Error is reduced, which means that the null hypothesis is supported, but rejected, what in turn means that there is prove of different mean values, which is actually not true. Moreover, the effect on every dependent variable might not be significant, but in combination they might have an effect. In the case at hand the MANOVA is appropriate due to the fact that the effect from the four dependent variables; motivation, organizational commitment, stress, and satisfaction, want to be investigated on the independent variable TBC that measures the managerial impact of TBC. Furthermore, it is expected that some of the dependent variables are correlated. Thus the MANOVA test is applied to test the different hypotheses in the analysis part (Garson 2012).

3.5. Reflection and Limitations of the Data Collection Process

Reflecting on the data collection process, it can be emphasized that some improvements or different procedure should be applied in future research studies. The study recognized a relatively low response rate to the online survey. This was probably due to the many questions the questionnaire included and the small amount of time managers are able to offer to such a survey at this organizational level. However, it was necessary to include already 16 questions about TBC to be able to obtain a reliable measurement for TBC. Nevertheless, as not all questions were used for analysis purposes, it is advisable to clearly investigate which analysis should be conducted before developing the questionnaire.
4. Chapter: Results and Analysis

In this section the collected data from the survey questionnaire is analysed. However, first the process of creating an index measure for the different variables is highlighted. Second, an overview about the descriptive statistics is given. Third, the question whether the respondents experience tight budgetary control, indeed, is investigated. Lastly, a Multivariate Analysis of Variance (MANOVA) is conducted in order to test the research hypotheses.

4.1. Reliability Analysis and Index creation

Due to the fact that the survey questionnaire was divided into different sections; questions that measured TBC, motivation, organizational commitment, satisfaction, and stress, the data included some variables, which measured the same thing. In order to get an appropriate single measurement for each section, it was necessary to conduct a reliability analysis to determine the Cronbach’s Alpha, which measures the internal consistence between the different questions and to conclude which questions should be combined to obtain an appropriate index measure for each of the following sections; TBC, motivation, organizational commitment, satisfaction, and stress. Furthermore, as some of the survey questionnaire questions were based on a reverse scale, these questions were recoded to be in line with the other questions.

Taking the TBC index as an example how the five different indices were created, all 16 survey questions regarding TBC were considered and a reliability analysis in order to determine the Cronbach’s Alpha was conducted. The reliability analysis determined a Cronbach’s Alpha value of 83 percent. According to Nunnaly (1978), an Alpha value between 70% and 80% for surveys are appropriate. Hence, the index for TBC was calculated based on all survey questions.

However, for the motivational index, organizational commitment index, and stress index, the reliability analysis was not as easy. For these indices it was necessary to exclude some questionnaire questions to increase internal consistence between the measurement questions. Hence, the study excluded question Q20 and Q21 from the motivational index, question Q26 and Q28 for the organizational commitment index, and question Q37 from the stress index. Finally, a Cronbach’s Alpha of 88.9 percent
for motivation, 76.3 percent for organizational commitment, 79.6 percent for satisfaction, and 69.2 percent for stress, were obtained from the reliability analysis (a more comprehensive description can be found in the appendix).

4.2. Overview of the Descriptive Statistics

Table 3: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBC_Index</td>
<td>62</td>
<td>1.50</td>
<td>6.13</td>
<td>4.1738</td>
<td>1.00434</td>
</tr>
<tr>
<td>Stress_Index</td>
<td>62</td>
<td>1.00</td>
<td>6.50</td>
<td>3.8468</td>
<td>1.38075</td>
</tr>
<tr>
<td>Satisdac_Index</td>
<td>62</td>
<td>2.40</td>
<td>6.80</td>
<td>5.4419</td>
<td>1.01215</td>
</tr>
<tr>
<td>Commit_Index</td>
<td>62</td>
<td>2.25</td>
<td>7.00</td>
<td>6.0081</td>
<td>.90078</td>
</tr>
<tr>
<td>Motivation_Index</td>
<td>62</td>
<td>1.00</td>
<td>7.00</td>
<td>6.4355</td>
<td>.90251</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Observing the table of the 6 different indices and their means, it can be noticed that the mean of commitment and motivation is quite high with more than 6 of a scale between 1 and 7. The mean of satisfaction is still a bit higher than the mid-point of the measurement scale. The index based on which TBC was measured is represented by a mean of 4.17 which is very close to the mid-point of 4 on the measurement scale. However, the stress index is the only index which average is lower than the mid-point of the measurement scale.
Table 4: Frequency Table of Response Distribution

<table>
<thead>
<tr>
<th>Do you experience TBC</th>
<th>In which Sector are you working</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health &amp; Social care</td>
</tr>
<tr>
<td><strong>Count</strong></td>
<td>Count</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
<td>9</td>
</tr>
</tbody>
</table>

The frequency table depicts the frequencies of responses according to the public sector and whether they experience TBC or not. However, the question if the respondents experience TBC or not, has been asked in the questionnaire before the respondents had to answer the questions from van der Stede (2001) based on which TBC is measured. From a total of 9 respondents from the health care sector, all experience TBC according to their opinions. Moreover, from the education sector, to which the majority of respondents belong, 20 respondents experienced a TBC system and 13 respondents did not. From the respondents working in the growth and community development sector, 6 respondents have the opinion that their organization applies a TBC system and only one respondent has the opposite opinion. From all respondents that are working in other public sectors, 9 respondents experience TBC and 4 answered that they did not experience TBC. However, this results in a total of 44 respondents or 70,1%, who answered that they experience TBC at their organization.

### 4.3. Do the respondents really experience TBC?

The questionnaire (see appendix), which has been used for the data collection process for this study, includes in the beginning one question (Q2) that asked the respondents whether they experience TBC in their organization or not. Below the
frequency of the answers can be reviewed. Considering the distribution of the answers, one can see that the majority of the participants (71%) of the 62 respondents indicated that they experience TBC.

Table 5: Frequency of Answer Distribution to Question 2 "Do you experience TBC at your organization?"

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>18</td>
<td>29,0</td>
<td>29,0</td>
<td>29,0</td>
</tr>
<tr>
<td>Valid</td>
<td>Yes</td>
<td>44</td>
<td>71,0</td>
<td>100,0</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

However, the following 16 questions of the survey questionnaire were used to actually measure whether the respondents really experience TBC or not. In order to get a reliable measurement to determine whether the participants experience TBC or not, the measurement questions, which were developed by van der Stede (2001) in his research about “Measuring tight budgetary control”, were used. As explained in the part above about the index creation, the 16 survey questions that were used in the survey questionnaire were combined to an index. As the index was based on a scale, which was ranked from 1 to 7, where 1 indicated no TBC and 7 really TBC, were in turn re-grouped into a group that experience TBC, for the ones that answered 5-7, a neutral group that answered 4, and a group that does not experience TBC that answered 1-3. However, these different groups and their frequency in answer distribution can be seen in the table below.
Considering the table above with the answer distribution of the re-grouped TBC index, it can be noticed that the majority of the respondents are represented by the neutral group. This group neither indicated that they are affected by TBC nor that they are not affected. Furthermore, 15 respondents or 24.4 percent of the participants were grouped as respondents that experience TBC. However, only 9 or 14.5 percent of the 62 respondents belong to the group that do not experience TBC.

Examining the crosstabulation between the two variables, whether the respondents indicated that they experience TBC or not (Q2) and the index variable (Q3-Q19) based on which the study measured if the respondents experience TBC or not, it can be concluded whether all participants who answered “yes” to the question if they experience TBC at their organization, also really experience TBC or not.

The crosstabulation indicates that from the 44 respondents that stated that they experience TBC at their organization, the majority (25 respondents) belongs to the neutral group according to the measurement questions of van der Stede (2001). The
group that experience TBC according to van der Stede (2001) and also answered “yes” to the question “Do you experience TBC”, represents a total of 14 respondents. One respondent, who actually experienced TBC even answered “no” to the question “Do you experience TBC”. Moreover, from the group that does not experience TBC, 4 answered that they also think that they experience TBC at their organization and 5 answered that their actually think that they face TBC. Nevertheless, the cosstabulation depicts that the majority of people who think that they face TBC at their organization also are represented in either the neutral group or the group that really experience TBC according to the measurements of van der Stede (2001).

4.4. MANOVA and Hypotheses Testing with SPSS

As mentioned before, to test the developed hypotheses for this study a MANOVA analysis is performed. The results of the analysis and the effect on the different hypotheses are stated below.

<table>
<thead>
<tr>
<th>TBC_Grouped</th>
<th>Value Label</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,00</td>
<td>No TBC</td>
<td>9</td>
</tr>
<tr>
<td>2,00</td>
<td>Neutral</td>
<td>38</td>
</tr>
<tr>
<td>3,00</td>
<td>Yes TBC</td>
<td>15</td>
</tr>
</tbody>
</table>

Taking into account the sampling distribution of the different groups of the independent variable TBC_Grouped, it can be seen that the number of responses differ between the three groups. The majority of respondents (N=38) belongs to the “neutral group”. The second biggest group is represented by the group that experience TBC (N=15). The least sample group, with a total of N=9 respondents, is presented by the participating group that do not experience TBC.
Table 9: Descriptive Statistics

<table>
<thead>
<tr>
<th>TBC_Grouped</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>No TBC</td>
<td>6.5926</td>
<td>.74120</td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>6.3070</td>
<td>1.04947</td>
<td>38</td>
</tr>
<tr>
<td>Yes TBC</td>
<td>6.6667</td>
<td>.45426</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>6.4355</td>
<td>.90251</td>
<td>62</td>
</tr>
<tr>
<td>No TBC</td>
<td>6.5833</td>
<td>.57282</td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>5.8158</td>
<td>.99098</td>
<td>38</td>
</tr>
<tr>
<td>Yes TBC</td>
<td>6.1500</td>
<td>.64642</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>6.0081</td>
<td>.90078</td>
<td>62</td>
</tr>
<tr>
<td>No TBC</td>
<td>4.1667</td>
<td>1.65831</td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>3.5132</td>
<td>1.31255</td>
<td>38</td>
</tr>
<tr>
<td>Yes TBC</td>
<td>4.5000</td>
<td>1.16496</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>3.8468</td>
<td>1.38075</td>
<td>62</td>
</tr>
<tr>
<td>No TBC</td>
<td>5.7556</td>
<td>1.00885</td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>5.2368</td>
<td>1.02599</td>
<td>38</td>
</tr>
<tr>
<td>Yes TBC</td>
<td>5.7733</td>
<td>.89719</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>5.4419</td>
<td>1.01215</td>
<td>62</td>
</tr>
</tbody>
</table>

The SPSS output about the descriptive statistics for the MANOVA test provides a general idea about the distribution of the scores in each of the different groups.

Considering the motivational index and the means of the 3 groups it can be noticed that the group that experience TBC actually have the highest mean score, followed by the respondents that do not experience TBC and the neutral respondent group. Nevertheless, all of the means are quite close together and the neutral group recognize the highest standard deviation.
Examining the mean distribution of the commitment index, the highest mean can be noticed for the group that actually does not experience TBC, which is followed by the group that experience TBC and lastly the neutral group with again the highest standard deviation.

Considering the Stress index, the highest mean value can be recognized with the group that experience TBC. The second highest mean value can be seen with the group that does not face a TBC system and the lowest mean represents the neutral group.

The mean score for the satisfaction index is almost the same for the group that experience TBC and for the group that does not experience a TBC system, whereas the mean for the group that does not experience TBC is slightly lower. However, the lowest mean is recognized in this case with the neutral group.

In the next section of the MANOVA analysis the equality of covariance matrices has to be considered due to the fact that it can be assured that the MANOVA assumption of homogeneity of variances is satisfied (Garson 2012).

The Box’s Test of Equality of Covariance Matrices (see appendix Table 13) highlights that the null hypothesis cannot be rejected at a significant level of .05 and that the assumption of equality of covariance matrices is satisfied. However, it has to be noticed that the test of equality of covariance matrices has been highly criticized and that the test is also highly sensitive to sample size and normal distributions (Garson 2012).

*Table 10: Bartlett’s Test of Sphericity*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood Ratio</td>
<td>.000</td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>61,671</td>
</tr>
<tr>
<td>df</td>
<td>9</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>
As the MANOVA is a statistical test that is used in case the dependent variables are correlated. The Bartlett’s Test of Sphericity is one option that is often used to test whether the hypothesis that the population correlation matrix is an identity matrix is true or false. In order that the hypothesis holds all diagonal terms have to be 1 and all off-diagonal terms must be 0. The test is built upon the determinant of the error correlation matrix, this means that a determinant which is around 0 represents the fact that one or more variables are correlated. Hence, if the determinant is small, as in our case, as it can be seen above, the hypothesis of independence of the different variables can be rejected. It can be concluded that the different variables are correlated and the MANOVA is the correct test for this research study (Garson 2012).

Table 11: Multivariate Tests

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hypothesis df</th>
<th>Error df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.986</td>
<td>994.725</td>
<td>4.000</td>
<td>56.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.014</td>
<td>994.725</td>
<td>4.000</td>
<td>56.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>71.052</td>
<td>994.725</td>
<td>4.000</td>
<td>56.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>71.052</td>
<td>994.725</td>
<td>4.000</td>
<td>56.000</td>
<td>0.000</td>
</tr>
<tr>
<td>TBC_Grouped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillai’s Trace</td>
<td>0.282</td>
<td>2.336</td>
<td>8.000</td>
<td>114.000</td>
<td>0.023</td>
</tr>
<tr>
<td>Wilks’ Lambda</td>
<td>0.730</td>
<td>2.385</td>
<td>8.000</td>
<td>112.000</td>
<td>0.021</td>
</tr>
<tr>
<td>Hotelling’s Trace</td>
<td>0.354</td>
<td>2.432</td>
<td>8.000</td>
<td>110.000</td>
<td>0.018</td>
</tr>
<tr>
<td>Roy’s Largest Root</td>
<td>0.301</td>
<td>4.283</td>
<td>4.000</td>
<td>57.000</td>
<td>0.004</td>
</tr>
</tbody>
</table>

In the multivariate test, 4 tests can be noticed. The Roy’s Largest Root is the most powerful test but has been highly criticized and is also highly dependent on normal distributions; however, the test could be used if there is perfect equality of covariance. The majority of researchers use either the Pillai’s Trace or Wilks’ Lambda. However, the Pillai’s Trace is the least sensitive to violation of the assumption of covariance matrices (Garson 2012). Taking either the Pillai’s Trace or the Wilks’ Lambda, the tests obtain almost the same result. Considering the Pillai’s Trace, the null hypothesis can be rejected at .05 level of significant that tight
budgetary control has the same effect on managerial behavior throughout the 3 groups based on a MANOVA derived combined dependent variable by combining the 4 dependent variables together. Furthermore, considering the partial eta squared (see appendix Table 14), it can be seen that ca. 14.1% of the variability in managerial behavior across the 4 dependent variables can be explained by the 3 group levels.

As, we have rejected the null hypothesis based on a combined variable. The study can investigate the ANOVAs for each single variable in order to test the predicted four hypotheses for this thesis research.

However, before the study can investigate the different ANOVAs to make conclusions about each single variable, the homogeneity of variances assumption, which is tested by the Levene’s test, has to be considered. Considering the significance this assumption is satisfied due to the fact that all p-values are higher than the significant level of .05 (see appendix Table 15).
Considering the output of the individual ANOVA tests for the four dependent variables, makes it possible to make conclusions whether to reject or not to reject the different hypotheses which were defined before in the methodology section.

Recalling the first hypothesis, which is: **H1: Managers that are confronted with TBC are less motivated than managers that do not experience TBC.**

Looking at the p-value of the motivation index, which is .369, results in the fact that it is not possible to reject the null hypothesis at the .05 significant level in favour of the alternative hypothesis that the study formulated above. Hence, it can be concluded that managers that are confronted with a TBC system are not less motivated than managers that do not experience a tight budgetary control system. Thus the hypothesis is not true.
Continuing with the second hypothesis, this was formulated in the following way:

**H2: TBC has a negative impact on managerial organizational commitment.**

The result of the ANOVA output for the commitment index shows a two-tailed p-value of .053. As the study investigates a one-tailed alternative hypothesis, this means that the p-value has to be divided by 2, in order to consider only one half of a normal distribution. After dividing the p-value by 2, which result in a one-tailed p-value of .0265, which indicates that the alternative hypothesis is supported and significant. Thus, it can be stated that H2 is true.

The third hypothesis about the managerial stress factor, was formulated as stated:

**H3: Managers that experience TBC are more stressed than managers who do not experience TBC.**

The ANOVA test for the hypothesis about the stress index resulted in a two-tailed p-value of .046, which is already significant at an alpha level of .05. Again, dividing the two-tailed p-value by 2 gives a one-tailed p-value of .023. It can be concluded that there is significant support for the alternative hypothesis. Thus, the formulated hypothesis H3 is true. This means that managers who experience TBC are more stressed compared to managers that do not experience TBC.

The last hypothesis which was formulated for the thesis research, was H4 which is formulated in the following way: **H4: Managers, who experience TBC, are less satisfied than managers that do not experience TBC.**

The result of the ANOVA test indicates a p-value of .133 for the two-tailed test. Dividing this value by 2 in order to obtain the one-sided p-value results in a value of .0633, which is not significant at an alpha level of .05. Hence, the null hypothesis cannot be rejected in favour of the alternative hypothesis that is stated above. It can be concluded that H4 is not true.
Chapter: Discussion

The aim of the thesis is to give insight how TBC effects managerial behaviour in the Swedish public sector, whereas managerial behaviour includes four specific variables. The behavioural variables to which the study refers to mainly shape managerial behaviour are motivation, organizational commitment, stress, and satisfaction. However, it is analysed in this study how each of the behavioural variables is affected by a TBC system. Considering the economic situation, as many countries still suffering the after-effect of the financial crisis as well as the Euro-crisis, the findings could be quite valuable, as TBC systems are widely applied in times of financial distress or economic difficulty. Furthermore, this research study about the effect of TBC on managerial behaviour in the public market can be seen as one of the first studies in this area. Previous research about TBC mostly investigated the relationship between TBC and performance and was based on the private sector. Anthony and Govindarajan (1998) and Merchant (1998) were one of the firsts who introduced the topic of TBC in academic literature. Dahlan et al. (2007) investigated the effect of TBC on firm’s performance and stated in their findings a positive relationship. However, main contribution to TBC research were delivered by the findings of van der Stede (2001) who investigated the measures of TBC, which are widely applied in this study as well. Based on previous research of TBC and the four behavioural variables, it has been presumed that TBC has a negative effect on motivation, commitment, and satisfaction, and in turn a positive effect on stress.

For the analysis, data from 62 public sector managers from different universities and municipalities were collected. The respondents were asked questions about the applied TBC system and their current level of motivation, organizational commitment, stress, and satisfaction.

The result of the analysis indicated that the majority of the respondents when they were asked whether they experience the applied organizational budgetary control system as tight or not, 71% of the participants indicated that they experience a TBC system at their organization. This result was also mainly reflected as the study measured whether they indeed experience a TBC system in accordance with the TBC measurements, which were identified by van der Stede (2001). Even though, the majority of the respondents were regrouped to the neutral group the second highest
sample population belonged to the group that experience TBC at their organization. Nevertheless, it can be argued that part of the neutral group actually experience TBC but is not totally aware of it. Furthermore, it has to be mentioned, as the study focuses on the Swedish public sector, that the Swedish economy is relatively healthy compared with other European countries such as Greece, Spain, or Portugal.

Taking into account the result of TBC on motivation, the outcome indicates that the null hypothesis cannot be rejected in favour of the predicted alternative hypothesis. Hence, it can be concluded that managers that face TBC are not less motivated than other managers that do not face TBC at their organization. Comparing the result with Buelens and Broeck (2007) findings that public sector employees are more strongly motivated by commitment to stainable work environments, which are probably more prevalent in the public sector than in the private sector, could explain the result of this study. Nevertheless, studies that resulted from research in the private sector indicated that motivation has a negative affect to the difficulty of achieving organizational budgets (Naka 1992).

Considering the outcome of the effect of TBC on managerial organizational commitment it can be concluded that there is a negative relationship between TBC and organizational commitment of managers. This means that managers that experience TBC are less committed to their organization than managers that do not face TBC. Since Meyer and Allen (2004) found out in their study that committed employees work harder in order to achieve organizational objectives, the findings of this study urgently suggest that top managers should find a way to balance budgetary control and organizational commitment to increase performance of their managers.

The result about the impact of TBC on managerial stress indicates a positive relation between the two variables. This means, as previously presumed, that if budgetary control increases, also managerial stress increases. As previously stated TBC system are mostly applied in times of financial difficulty where managers anyway already fear that their work placement could be terminated, which in turn increases stress. If this would not be enough, the implementation of a TBC system that even puts more pressure on employees and makes organizational budget achievement more difficult, additionally increases perceived stress by managers. Hence, a negative relationship between TBC and managerial stress can be noticed.
Further results of this study indicate that not as previously predicted, satisfaction does not have a negative relationship with the implementation of TBC. The null hypothesis cannot be rejected in favour of the alternative hypothesis, which was created for this research study. The result shows that there is no significant difference between managers that face TBC or that do not face TBC and the effect on satisfaction. As the alternative hypothesis is derived from a previous study by Brownwell (1983), who found evidence that budgetary participation is positively related to job-satisfaction, this research study does not indicate significant evidence to support Brownwell (1983). Further, it can be argued that budgetary participation is not significantly correlated with TBC and managers are still able to participate to a certain degree in the budget formulation process.
6. Chapter: Conclusion

The impacts of TBC on managerial behaviour were investigated in this study. The sample population for this study comprised managers working in different areas in the public sector in Sweden. According to the aim of the study, a survey questionnaire with five sections was created (tight budget control experience, managerial motivation, organizational commitment, stress and managerial satisfaction scales) and this questionnaire was sent to 800 managers via electronic mail. 62 managers responded to the questionnaire. The response rate was 7.7%. In the analysis of the data, reliability analysis, descriptive statistics, and MANOVA analysis were used through the SPSS system.

The results of this study provide a number of contributions to management and accounting literature by focusing on the public sector in Sweden. First, the study suggests that the majority of managers working in the public sector actually experience TBC. Second, the first hypothesis, which tested the effect of TBC on motivation and stated a negative relationship between the variables, did not result in a significant relationship and the null hypothesis could not be rejected. Third, the alternative hypothesis that investigated a negative relationship between TBC and organizational commitment resulted in a significant relationship between the variables. This means that the second hypothesis is true. Fourth, the study’s results find evidence for a positive relationship between managerial stress and TBC. Finally, the fourth hypothesis that considered the relationship between TBC and satisfaction was not supported, which means that managers that face TBC are not necessarily less satisfied than managers that do not face TBC at their organization.

However, the stated results of this research study have to be considered with care, as the study lacks certain limitation due to small sample size of only 62 respondents. Moreover, the sample distribution between the different groups is quite disperse, which can also influence the findings of this study. Another weakness that the research study recognizes is the fact that due to the anonymous responses of the participants, it has not been possible to make differences between managers that work for universities and are affected by budgetary constraints set by the national government, and managers that work for local municipalities, which underlie the
responsibility of municipality councils that are able to slightly leverage their local budgets by increasing local income taxes.

Nevertheless, this study can be considered as a starting point for further research in this area and could be expanded for research consideration in other countries, which are more heavily effected by economic downturns than the Swedish economy. But also the consideration of other variables such as public satisfaction could be an option.
7. References:


The Effect of Tight Budgetary Control on Managerial Behaviour in the Swedish Public Sector

Dear Participant,

We would highly appreciate if you participate in a short survey that helps us to finish our Master-Thesis.

The purpose of this study is to figure out the effect of tight budgetary control on managerial behaviour. In this case, we are especially interested, which effect a tight budgetary control system has on managerial satisfaction, commitment, motivation, and how it influences the perceived stress level.

All answers will be treated anonymously and confidentially and are only used for the purpose of this Masters-Thesis.

Thank you very much for your time and effort!

1. In which part of the public sector are you working in?
   - Health and Social Care
   - Education and Labour Market
   - Growth and Community Development
   - Other

2. Do you experience the budget control system at your organization as a tight control system?
Please rank the following questions on a scale of 1 to 7, with one being "I strongly disagree" and 7 "I strongly agree" with the question at hand.

3. Not achieving my budget has a strong impact on how my performance is rated by my superior.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

4. In the eyes of my superior, not achieving the budget reflects poor performance.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

5. Superiors judge my performance predominantly on the basis of attaining budget goals.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree
6. My superiors are very considerate of my explanations of deviations from the budget.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

7. Budget targets are strong commitments and cannot be changed during the year.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

8. Budgets are usually adjusted during the year to those circumstances that could not be foreseen at the time the budget was drawn up.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

9. Changes in the budget are difficult to get approved by the superior.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree
10. A budget is essentially a forecast rather than a true commitment.
   - Strongly disagree
   - Moderately disagree
   - Slighty disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

11. I am required to submit control reports that explain in detail budget variances on a line-by-line basis.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

12. From the comments made by my superiors, I know that they investigate my budget in every detail.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

13. My superiors do not care very much about interim budget deviations.
    - Strongly disagree
    - Moderately disagree
    - Slightly disagree
    - Neutral
    - Slightly agree
    - Moderately agree
14. I am required to submit an explanation in writing about causes of interim budget variances.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

15. I am required to prepare interim reports (e.g., monthly, quarterly) which compare the results-to-date with the budget.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

16. Budget matters are discussed regularly with my superior even if there are no negative budget deviations to report.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

17. My methods of reaching budget performance are accepted by superiors without question.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
18. When problems occur, I discuss budget matters with my superior without being asked to.

- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

19. I am highly motivated to perform well for the organization.

- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

20. I receive adequate monetary compensation for my achievements and contributions at work.

- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree


- Strongly disagree
- Moderately disagree
- Slightly disagree
22. Are you motivated to give extra effort at your workplace and would work longer than needed?
- Slightly disagree
- Moderately disagree
- Slightly agree
- Neutral
- Moderately agree
- Strongly agree

23. Are you motivated to learn new things and to become more professional in the things you are doing?
- Slightly disagree
- Moderately disagree
- Slightly agree
- Neutral
- Moderately agree
- Strongly agree

24. I am very committed to the organization.
- Slightly disagree
- Moderately disagree
- Slightly agree
- Neutral
- Moderately agree
- Strongly agree

25. I would be happy to spend the rest of my career with this organisation.
- Slightly disagree
- Neutral
26. I sometimes think about changing the organization.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

27. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization to be successful.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

28. I would accept almost any type of job assignment in order to keep working for this organization.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree
29. I am proud to tell others that I am part of this organization.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

30. My work gives me a sense of personal accomplishment.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

31. I believe I have an opportunity for professional growth and development.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

32. How satisfied are you with your current workload?
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree
33. There are sufficient opportunities for me to develop the skills, which are needed to perform my work.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

34. I am highly satisfied with the current situation at work.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

35. Typically I feel tense or stressed out during workdays.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree

36. I often feel worried to meet deadlines and to manage the workload for my superiors.
- Strongly disagree
- Moderately disagree
- Slightly disagree
- Neutral
- Slightly agree
- Moderately agree
- Strongly agree
37. I feel secure about my work placement.
   - Strongly disagree
   - Moderately disagree
   - Slightly disagree
   - Neutral
   - Slightly agree
   - Moderately agree
   - Strongly agree

38. What is your gender?
   - Male
   - Female

39. What is your age?

40. How long do you already work at the organization?
   - < 5 years
   - 5 - 10 years
   - 10-15 years
   - > 15 years

Thank you very much for participating in our survey!
8.2. Detailed description of Index Creation

8.2.1. **Tight Budget Control Index**

In order to create an index variable that represents an appropriate measure on which it can be determined whether the majority of respondents experience TBC or not, the Cronbach’s alpha, which measures the internal reliability between the different questions about tight budgetary control, had to be calculated. Conducting the reliability analysis of the 16 survey questions of TBC resulted in a Conbach’s alpha of 83.8%. According to Nunnaly (1978), an Alpha value between 70% and 80% for surveys are appropriate. Hence, the index for TBC was calculated based on all survey questions.

8.2.2. **Motivation Index**

The survey questionnaire included 5 questions about managerial motivation, which should be combined into an index measure in order to obtain one measure for motivation. Conducting the reliability analysis in SPSS to conclude whether it is possible to combine those 5 questions to an index figure or not. The reliability analysis output presented a Conbach’s Alpha of 56.8%. As the accepted Alpha level should be at least 70%, it was not possible to include all of the survey questions in the index measure. Considering the reliability analysis of the separate questions showed that question 2 and 3 are not really correlated with question 1, 4, and 5. Hence, excluding question 2 and 3 from the remaining questions would increase the Conbach’s Alpha to 88.9%, which in turn, represents an acceptable measure of the motivation scale. Thus, only question 1, 4, and 5 were included in the motivation index, which also makes sense as the two questions that were excluded measured managerial motivation based on different compensation methods and did not represented general motivation questions.
8.2.3. **Commitment Index**

The survey questionnaire included 6 questions about organizational commitment. To determine an appropriate index measure for commitment, a reliability analysis were conducted that resulted in a Conbach’s Alpha value of 60,5%. As the Alpha of 60,5% represents low internal consistence between the different commitment scales, the separate questions had to be considered. As there was low correlation between question 3 and 5 and the remaining questions. The reliability analysis was repeated with only question 1, 2, 4, and 6. The analysis resulted in an increased Conbach’s Alpha of 76,3%, which lead to the conclusion that the index was created including the commitment question 1, 2, 4, and 6.

8.2.4. **Satisfaction Index**

Conducting the reliability analysis for all survey questions that measure satisfaction resulted in a Conbachs Alpha of 79,6%, which indicates that there is high correlation between all the 5 questions. Hence, all questions were combined in the satisfaction index.

8.2.5. **Stress Index**

Conducting a reliability analysis for the 3 stress survey questions resulted in a Cronbach’s Alpha of 55,7%. The Alpha indicates that there is low internal reliability between the 3 questions, as most respondents feel relatively secure about their work place. Hence, we excluded question 3 and run the reliability analysis another time. The new Conbach’s Alpha of 69,2% is not really high but still indicates an appropriate level of internal reliability to use the 2 questions to represent an appropriate measure for stress. Hence the stress index is created with question 1 and 2.
### Table 13: Box’s Test of Equality of Covariance Matrices

<table>
<thead>
<tr>
<th>Effect</th>
<th>Box's M</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box's M</td>
<td>30,439</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>1,283</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>df1</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>df2</td>
<td>2232,949</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>.179</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 14: Multivariate Tests

<table>
<thead>
<tr>
<th>Effect</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pillai's Trace</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
</tr>
<tr>
<td></td>
<td>Roy's Largest Root</td>
</tr>
<tr>
<td></td>
<td>Pillai's Trace</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
</tr>
<tr>
<td></td>
<td>Roy's Largest Root</td>
</tr>
</tbody>
</table>

### Table 15: Levene's Test of Equality of Error Variances

<table>
<thead>
<tr>
<th>Effect</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation_Index</td>
<td>1,150</td>
<td>2</td>
<td>59</td>
<td>.324</td>
</tr>
<tr>
<td>Commit_Index</td>
<td>1,085</td>
<td>2</td>
<td>59</td>
<td>.345</td>
</tr>
<tr>
<td>Stress_Index</td>
<td>1,758</td>
<td>2</td>
<td>59</td>
<td>.181</td>
</tr>
<tr>
<td>Satisdac_Index</td>
<td>.989</td>
<td>2</td>
<td>59</td>
<td>.378</td>
</tr>
</tbody>
</table>