Aalto University
School of Business

Steering and motivating professors with performance-based pay and other rewards - case: Aalto University

Accounting

Master's thesis

Jaana Palo

2014

Department of Accounting
Aalto University
School of Business

Author Jaana Palo

Title of thesis Steering and motivating professors with performance-based pay and other rewards – case: Aalto University

Degree M.Sc.

Degree programme Accounting

Thesis advisor Seppo Ikäheimo

Year of approval 2014 **Number of pages** 104 **Language** English

Abstract

The objectives of this study are to understand what drives professors' motivation and what kind of rewarding supports especially their intrinsic motivation. From this point of view, the ultimate objective is to develop a proposal for a new, holistic reward system for tenured professors at Aalto University. In this study, motivational theories are used to approach rewarding because motivation is an important driver of professors' performance and in most cases, it is affected by rewarding.

The study was conducted as a part of a project that develops a new rewarding model as a proposal for the management of Aalto University. Because a new model is created as a result of this thesis, it is a constructive case study. The primary data used to support the model consists of a survey targeted to professors at Aalto University, two additional interviews with professors, and eight management interviews. In addition, internal material from the university, material from the project team's meeting, and other discussions about the topic by professors were used as complementary data.

The key findings of this study indicate that professors are indeed primarily intrinsically motivated but that their overall motivation is affected by external rewards as well. Moreover, if external rewards are poorly designed, a crowding-out effect occurs. Professors highly value academic freedom and trust and prefer forms of rewarding that enhance those elements in their work. They are also extremely inequity averse; therefore, if they perceive rewarding inequitable, their intrinsic motivation is affected negatively.

Both the professors and the management were quite unanimous with the elements that the overall reward system should consist of. They preferred merit increase as the individual form of rewarding for long-term performance and additional resources to acknowledge the achievements of research groups or individual researchers. Finally, more pronounced and visible recognition of extraordinary accomplishments and success was called for. These elements together form a reward system that takes the long-term nature of professors' work into account but on the other hand allows for recognizing single achievements within a short time. It supports their autonomy of work, advances their competence, and enhances their relatedness to the organization if communicated correctly.

Keywords Performance-based rewarding, work motivation, Behavioral Agency Theory, New Public Management, universities, professors

Tekijä Jaana Palo

Työn nimi Professorien ohjaaminen ja motivointi tulospalkkauksella ja muilla palkkioilla – case: Aalto-yliopisto

Tutkinto Maisterin tutkinto

Koulutusohjelma Laskentatoimi

Työn ohjaaja Seppo Ikäheimo

Hyväksymisvuosi 2014 **Sivumäärä** 104 **Kieli** Englanti

Tiivistelmä

Tutkielman tavoitteena on ymmärtää, mitkä tekijät vaikuttavat yliopistoprofessorien motivaatioon ja minkälaiset palkitsemisen muodot tukevat erityisesti heidän sisäistä motivaatiotaan. Tutkimuksen pääasiallisena tavoitteena on kehittää uusi, kokonaisvaltainen palkitsemisjärjestelmä Aalto-yliopiston vakinaisille professoreille siitä näkökulmasta, miten palkitseminen säilyttää ja tukee heidän sisäistä motivaatiotaan. Motivaatioteoriat valittiin tutkielman lähestymistavaksi palkitsemiseen, sillä motivaatio on yksi suurimmista professorien työsuoritukseen vaikuttavista tekijöistä, ja siihen on mahdollista vaikuttaa palkitsemisen avulla.

Tutkimus toteutettiin osana projektia, jonka tarkoituksena on kehittää Aalto-yliopistolle uusi kokonaispalkitsemisen malli. Koska myös tämä tutkielma kehittää palkitsemisjärjestelmän tiettyyn organisaatioon, on se konstruktiivinen tapaustutkimus. Mallin rakentamisen pohjaksi käytetty aineisto koostuu pääasiassa Aalto-yliopiston professoreille suunnatun kyselyn vastauksista, kahden professorin täydentävistä haastatteluista sekä kahdeksasta yliopiston johdon haastattelusta. Lisäaineistona on käytetty yliopiston sisäisiä materiaaleja liittyen palkitsemiseen, projektiryhmän kokousten materiaalia sekä muita professorien esimerkiksi sähköpostin välityksellä aiheesta käymiä keskusteluja.

Tutkimuksen keskeiset löydökset tukevat havaintoa, että professorit ovat pääasiallisesti sisäisesti motivoituneita työtään kohtaan, mutta toisaalta heidän motivaatioonsa voi vaikuttaa myös ulkoisen palkitsemisen avulla. Ulkoisten palkkioiden vaikutus on ilmeinen etenkin, jos niiden toteutuksessa ei ole onnistuttu ottamaan yliopistomaailman kontekstia huomioon; tällöin motivaation syrjäytymisvaikutus on todennäköistä. Professorit arvostavat akateemista vapautta sekä sitä, että heihin luotetaan. Palkitsemisen muodoista he kannattavat sellaisia, jotka tukevat näitä asioita heidän työssään. He kaihtavat myös erittäin paljon epäoikeudenmukaisuutta palkitsemisessa, minkä vuoksi epäoikeudenmukaiseksi koettu palkitseminen vaikuttaa negatiivisesti heidän sisäiseen motivaatioonsa.

Sekä professorit että yliopiston johto olivat lähes yksimielisiä kokonaispalkitsemisen elementeistä. Henkilökohtaisen, pitkän aikavälin suorituksen palkitsemiseksi kannatettiin meriittikorotuksia ja tutkimusryhmän tai yksittäisen tutkijan palkitsemiseksi lisäresursseja kyseiselle yksikölle. Erityislaatuisten saavutusten ja menestyksen tehokkaampaa näkyväksi tekemistä ja tunnustamista kaivattiin myös. Nämä elementit muodostavat yhdessä kokonaispalkitsemisen mallin, joka oikein viestittynä tukee professorien työn autonomiaa, edistää heidän kompetenssiaan sekä lisää yhteenkuuluvuuden tunnetta yhteisön kanssa.

Avainsanat Tulospalkkaus, työmotivaatio, behavioralistinen agenttiteoria, uusi julkishallinnon johtaminen, yliopistot, professorit

Table of Contents

1 INTRODUCTION

1.1 Background and motivation

Performance management and measurement in universities have been hot topics both within academia and in media in recent years. They raise strong criticism amongst academics while the idea of performance management does not seem to fit the university environment. On one hand, professors are intrinsically motivated in the first place (e.g. Chen;Gupta;& Hoshower, 2006) and have a desire to do science with their best capabilities; and on the other hand, their work is hard to compress into traditional measures (Blaxter;Hughes;& Tight, 1998). As Janne Saarikivi wrote in his column in Helsingin Sanomat (2014): "Measuring creativity and innovation is like trying to determine with scientific precision which one is better, rösti or ice cream."

Especially the university reform in 2010 increased the emphasis on performance measurement in Finland, introducing a completely new Funding Model according to which the governmental funding of universities is determined based on quantitative measures. This reflects to individual universities where measuring the performance of the units and individual members of academic staff has become a common practice. This is often connected to linking pay to performance, and many Finnish universities are indeed implementing an incentive system for their professors (Kallio, 2014). However, the discussion is mostly separate from an essential factor of professors' work performance: their strong intrinsic motivation to do science. In order to fully understand the effects of rewarding for performance on the professors, understanding how their motivation works in terms of intrinsic and extrinsic sources of motivation is essential.

The phenomenon of using corporate practices but have found their way to public sector organizations as well was named New Public Management (NPM) (Hood, 1991). Even though one of the positive effects that is aimed at by using NPM is to increase the efficiency of organizations, this is not often the outcome in practice. This can be due to many factors but the main reason is often that the organization and its employees are not taken into account in the planning phase and especially the quality aspect is neglected (Fryer;Antony;& Ogden, 2009). Academic work is often hard to compare with objective measures. The most visible effects of NPM often are more pronounced bureaucracy and administration "even though they do not fit the universities' working environment in tone" (Tikkanen, 2014).

Even though NPM by definition has received string criticism within the academic world (e.g. Sehested, 2002), managerial practices seem to have settled in universities. Therefore universities should consider *how* to implement the practices in order to reduce the possible conflicts to a minimum. As NPM has an impact on the rewarding of university professors in many cases, considering how the traditional methods of rewarding can be used for professors successfully requires recognizing how they differ from private sector employees. One distinguishing factor between professors and private sector employees is the nature of their motivation: professors typically have strong intrinsic motivation and are less driven by external motivators than employees in the corporate world (Chen et al., 2006). Since one of the objectives of performance-based rewarding is to create extrinsic motivators for employees (Henri, 2006), its effects on professors' motivation and further the relationship between extrinsic and intrinsic motivation should be acknowledged. As work motivation has found to contribute to work performance (Pepper & Gore, 2012), it has a significant impact on the realized performance.

Academic literature recognizes several motivation theories that have been used in studies about employee incentives. Agency theory is one of the classic theories explaining incentives but it has been criticized for not taking human behavior into account. Therefore behavioral agency theory has been developed: it combines traditional agency theory and other theories that explain human behavior and motivation, such as crowding-out theory and expectancy theory. (Pepper & Gore, 2012.) As performance-based rewarding is often said to have two objectives, steering (Handolin, 2004) and motivating (Bonner & Sprinkle, 2002) employees, it has a significant impact on their overall motivation. Hence, in order to create a reward system for professors that affects their performance positively, the analysis of how rewarding and work motivation interact with each other is essential.

This thesis will bring insight into how professors can be motivated with performance-based rewarding. It creates a theoretical framework around theories about work motivation, human behavior, reward systems, and universities as public sector organizations, each field having a great deal of literature and studies written. There are plenty of studies that combine motivation and behavioral theories (e.g. Wiseman & Gomez-Mejia, 1998), rewarding and motivation theories (Bonner & Sprinkle, 2002), and performance management in universities (ter Bogt & Scapens, 2012) as well but there are very few articles that study how performance-based rewarding affects professors' motivation and consequently performance. Thereby, there is a clearly visible research gap that e.g. Rantanen, Kulmala, Lönnqvist, and

Kujansivu (2007) point out: the public-sector-specific factors affecting the design and implementation of a performance measurement system (PMS) should be taken into account when creating an effective PMS in practice. Furthermore, literature that combines university performance management and motivating academics is rather narrow (Pinto & Pulido, 1997) and literature about rewarding in universities even more limited; hence, there seems to be a need for an analysis that covers reward systems in universities and includes their effects on professors' work motivation as well.

This thesis was conducted as a part of a project developing a new reward system for tenured professors in Aalto University. The aim of the project is to create a suggestion for the university management that is based on the professors' wishes and needs and that can be further developed by the management and will eventually replace the current incentive system with a new, holistic reward system.

1.2 Objectives and limitations

The main objective for this thesis arises from the practical need to develop a new reward system in Aalto University. Rewarding will be approached from the professors' point of view: what are the effects of rewarding on their motivation and consequently performance? The university management's point of view will be considered as well because the organization's objectives cannot be neglected when designing a reward system. However, the main focus is on the professors. Therefore, the research question is as follows:

> **How can professors be rewarded based on their performance in order to maintain their intrinsic motivation and to create external motivators to perform towards the university's strategic goals?**

As said, the primary objective for this study is to *develop a proposal for a new, holistic reward system for tenured professors at Aalto University*. In order to construct the proposal, it is important to find out *what drives professors' motivation* and *what kinds of rewards support professors' intrinsic motivation*. Hence, these are the secondary objectives of the study.

As the case organization is a university, the thesis will focus on the academic world even though New Public Management can be applied in the entire public sector. This limitation is chosen also because there are differences between employees in different public sector organizations and therefore the results could not be put into perspective as well as when examining only universities. Furthermore, the more specific employee group under

examination is tenured professors because their position is secured and is not affected by their performance. Consequently, their motivation is not so much influenced by career concerns because of the secured position. In Aalto University the focus is on Full Professors because they have reached tenure as well as a state in their career where there are no more official career steps as external motivators left.

As for rewarding, the thesis will focus on rewards that are given based on performance. Even though it is an essential part of overall rewarding, it is assumed that fixed salary cannot be affected by the reform and it is taken for granted. Furthermore, covering both the structure and the entire process and communication of rewarding would expand the research too extensive to be covered in a master's thesis. That is why this thesis will principally focus on the structure of rewarding only, leaving the process and how to communicate the system in practice in a minor role.

1.3 Methods and data

The empirical research is a qualitative case study while it examines a management accounting phenomenon in a specific organization and context (Aaltio-Marjosola, 1999), the case organization being Aalto University. As said, this thesis is related to a project developing a new reward system for Aalto University. The project was initiated because of the remarkable dissatisfaction that was brought out by several professors. A project team was formed to prepare a proposal and it consisted of professors from all the schools of Aalto University as well as two HR representatives and the author of this thesis as a student member. The project team met on regular basis during 2014, and the meetings were a platform for brainstorming and developing the new model based on the empirical data collected for this thesis. As the main objective of the thesis is to design a solution for the problem of how to construct a functioning reward system, it is a constructive case study (Kasanen;Lukka;& Siitonen, 1993).

The primary source of the data used in the study is a survey that was targeted to all the professors at Aalto University, including Full, Associate, and Assistant Professors as well as Professors of Practice. The survey consisted of questions regarding potential rewarding elements, criteria used for evaluation, professors' motivation towards different work-related tasks, and opinions about previous and current rewarding within the university as well as demographic questions. Furthermore, two additional interviews with ARTS professors were conducted because the response rate within ARTS was low, 11.3 %. It was perceived important to assess the university management's point of view as well and therefore eight

interviews were conducted with management representatives including the President and the Provost of Aalto University as well as the Deans of the schools. All ten interviews were conducted as theme interviews. Besides the survey and the interviews, other university-specific material such as emails and discussions about incentive systems were used in order to look into the current reward system and the opinions about rewarding in general. In addition, the material from the project team meetings as well as some internal material was used.

1.4 Structure

The theory section of this thesis consists of Chapters 2 and 3. Firstly, the context of the study takes place is presented in Chapter 2 in which the university environment is introduced. This is done through three different theoretical perspectives: first, the concept of New Public Management is presented; secondly, the relevant regulations that affect universities' performance management in Finland are covered; and thirdly, some typical features of academic careers are looked into in more detail. Chapter 3 builds the motivational framework starting from traditional agency theory and expanding to behavioral theories of work motivation by introducing Behavioral Agency Theory. Chapter 3.1.3 sets the motivation theories into the university context. The second half of Chapter 3 covers reward systems and similarly examines them in the academic world.

After the literature review, Chapter 4 introduces the case organization, Aalto University, and covers the research methods and data used in the empirical analysis. Chapter 5 first describes the background for rewarding in the case university, covering the strategy, the university-specific contract with the Ministry of Education and Culture, and the internal funding model of Aalto University. The empirical findings are examined in Chapters 5.2, 5.3 and 5.4, starting from the professors' motivation and further going through their as well as the management's perspectives of the former and the current reward systems as well as the future system. Chapter 6 builds the proposal for the new system based on these perceptions and discusses the findings of the empirical research reflecting the theoretical framework. Finally, Chapter 7 concludes the thesis, discusses the central defects of the study, and gives suggestions for further study.

2 UNIVERSITY ENVIRONMENT

Oxford Dictionaries defines a 'university' as "a high-level educational institution in which students study for degrees and academic research is done" (Oxford Dictionaries, 2014). The history of modern universities dates back in the 12th century and they have typically been strongly associated with building knowledge and distributing it (Denman, 2005). By combining different definitions, it can be concluded that the basic tasks of universities are research and education as well as advancing the surrounding society by sharing knowledge. Additionally, universities have traditionally been non-commercial institutions concentrating on these basic tasks but recently they have faced increasing demands of raising market and economic orientations: universities are increasingly competing with each other in acquiring funding, for instance (ibid.). Responding to these relatively new demands has changed the practices and structures of universities in many countries.

Even though the basic functions are more or less the same in universities globally, the ways in which they are organized differ from each other depending on the geographic area. For instance, funding of universities can be organized in several different ways. In the US there are both public and private universities and they both obtain their funding typically from private sources such as donations, research grants, tuitions, or sales and services rather than public funding (Labaree, 2010). European universities more typically get most of their funding from governments and other public institutions and many of the countries allocate university funding based on performance-based schemes[1] (Hicks, 2012). As mentioned above, irrespective of the sources of funding the trend has been that universities face increasing pressures of higher efficiency and accountability (Geuna & Martin, 2003). Furthermore, the pressures are especially typical in countries where funding is granted based on performance. This trend has emerged together with the concept of New Public Management (NPM), a theory that explains the use of private sector management practices in public sector organizations.

Partly as a consequence of the increased accountability demands towards universities, performance measurement has found its way inside the universities as well. Universities are increasingly measuring individual professors' performance and therewith connecting parts of rewarding to performance has increased as well. Typically, these are used as management control tools in private sector organizations in order to steer employees' actions. However, in

[1] e.g. UK, Sweden, Finland, Italy, Poland

universities the conflict between the interests of management and professors is not nearly as strong as in the private sector, mainly because the management often consists of professors itself (Blaxter et al., 1998). That is just one example of issues that differentiate universities from traditional private sector corporations. These distinguishing factors are those that should be recognized when using performance measurement and performance-related rewarding as a private sector practice in universities.

In the following subchapters, NPM is first covered in more detail. Secondly, the laws and regulations that give guidelines for universities' performance and determine the allocation of funding in Finland are briefly presented. Finally, I will go through some of the idiosyncrasies of academic careers, such as tenures, that assumedly affect professors' performance and thus should be regarded in connection with performance management in universities.

2.1 New Public Management

The trend in the past decades in the public sector and correspondingly in universities has been that private sector performance management and measurement have become more popular and even a norm in the public sector (Pollitt, 1995). Hood (1991) conceptualized the phenomenon of using private sector practices in the public sector by using the term New Public Management. NPM has been a debated concept since its development, having both critics (e.g. Adcroft and Willis, 2005; Sehested, 2002; Marginson, 2000) and proponents (Smeemk;Teelken;Eisinga;& Doorewaard, 2009; Hood, 1991). The criticism has concentrated on the misfit of managerial practices with public sector features, the "difficulties in importing managerial practices from one context to another" (Adcroft & Willis, 2005), and the undermining of professionalism as a governing principle in organizations traditionally led by professionals (Sehested, 2002). Meanwhile, the supporters argue that NPM makes public sector organizations more efficient and improves the quality of performance (Smeemk et al., 2009) as well as fosters innovation and less hierarchical structures (Kallio, 2014).

The concept of NPM was generated because the use of private sector practices and professional management in the public sector increased from the late 70s (Adcroft & Willis, 2005). The basic idea of the concept is that performance management practices such as increased budgeting that are common in the private sector are adopted in the public sector (Smeemk et al., 2009). The concept of NPM originates from the Anglo-Saxon cultures and especially Great Britain, and it should be noted that there are differences between the Anglo-Saxon, central European, and the Nordic public sectors, to start with. The Nordic model, for

instance, is said to implement only parts of NPM and to have a longer history with some NPM elements such as decentralization and the autonomy of public units (Sehested, 2002). Whilst there are different definitions of NPM and no universal framework exists, an example list of the private sector practices that public sector organizations can use according to NPM is as follows (Fryer;Antony;& Ogden, 2009):

- *the employment of professional managers;*
- *explicit standards and measures of performance;*
- *greater emphasis on consistency of services;*
- *decentralisation;*
- *increased competition between organisations and sub-units;*
- *emphasis on private-sector management styles; and*
- *increased accountability and parsimony in resource use.*

In this study, I will limit concentrate on the use of explicit standards and measures from the university point of view, and more specifically performance measurement linked to rewarding.

Even though NPM is a widely used framework for describing how public sector organizations and consequently universities are managed, there seems to be few scholars presenting the **benefits** of the concept. Hood (1991) points out the political neutrality of NPM and remarks that different values can be communicated effectively by using private sector practices. As for other public sector organizations, universities can benefit from NPM practices, especially performance management, by finding out where the university stands at a given moment in striving towards its goals and seeing what should be done differently (Adcroft & Willis, 2005). Smeemk et al. (2009) found, in turn, that managerialism did have a modest positive influence on the quality of performance amongst European university employees. There was a weak indirect negative effect which was cancelled out by a positive direct effect and thus no conflict was found between managerialism and the quality of university performance, as opposed to the points of views of many other scholars. Additionally, OECD has taken a strong role in pushing its member governments and governmental organizations towards implementing NPM and in advocating for its use and supposed benefits (Pal & Ireland, 2009), which might have increased the use of NPM in certain countries.

Nevertheless, there seems to be more academics **criticizing** rather than praising NPM. Many scholars recall the concentration on quantitative and the lack of qualitative data and measures as one of the key reasons why performance management struggles in the public sector and especially in universities (see e.g. Fryer et al. 2009, Kallio 2014). NPM has found to have a

deconstructive effect on academic performance deriving from the complexity of universities and academic work (Adcroft & Willis, 2005). NPM has also been seen as a 'declaration of war' against professionals in public organizations because private sector practices have been used in a way that diminishes their autonomy and trust in them (Sehested, 2002). Because university professors are professionals, they might similarly see it as a threat as well.

As can be reasoned from the criticism, using NPM practices is not a straightforward issue in the public sector. The problems often arise if managerial practices are transferred directly to the non-profit, mission-oriented world without considering the context in which they are applied. Therefore interpreting NPM too literally without integrating it to the public sector context might cause frustration and opposite effects than what are sought. By introducing increasing hierarchy, audit mechanisms, and subordination, the impact of professional norms and values are reduced (Sehested, 2002), which might cause frustration amongst professors used to academic freedom. The criticism indicates that when applying private sector practices in a university, one needs to be very careful with the execution: if the management fails to take the characteristics of universities and professors into account, performance is more likely to be impaired (Fryer et al. 2009). However, when talking about NPM in the public sector, a 'softer' version can be applied: a version where the professionals are restrained with control systems as little as possible. This way misusing NPM can be avoided. By misusing I mean applying NPM practices only for the sake of doing so rather than giving a thought on the consequences and what the objectives and goals of using them are.

Since most of the management accounting literature about reward systems and literature about work motivation have had the corporate world in focus, NPM has been an initiative to incorporate those theories into the public world. There has been an assumption that employees in the corporate world and in universities differ from each other with regard to their motivation and motivation drivers (Buelens & Van den Broeck, 2007). This is why transferring private sector practices into the public sector has been criticised as a phenomenon by many scholars even though NPM as a theory has been used in a number of academic studies about the public sector. NPM can, however, be used to translate the differences between the private and public sectors. In addition, since one of the main differences between private sector and especially university employees is the difference between their motivation drivers, examining motivation theories in the light of NPM brings more insight into the analysis. Also the effect of introducing NPM practices in universities on the professors' motivation is interesting.

2.2 Finnish regulations

When looking at Finnish laws and regulations regarding universities, NPM trends and performance-based funding allocations are clearly visible. The Universities Act itself does not take a stand on performance management directly, but the funding of universities regulated in the law is directly related to the performance of universities. The Funding Model that determines the different forms of funding of universities, in turn, defines clear criteria for the outputs of universities. This is clearly one way of incorporating NPM in the academic context already at the legislative level. This is in accordance with the intentions of OECD to increase efficiency in public sector organizations through public sector reforms (e.g. Pal & Ireland, 2009).

The university legislation and the university system in Finland have features that affect performance management in individual universities both directly and indirectly. Their impact is often transferred into practice through the adaptation of NPM: by introducing performance measures and Key Performance Indicators (KPIs), for instance. Even though the basic setting is similar to those of most western countries (Rantanen et al., 2007), the new Universities Act that came into effect in 2010 and the new Funding Model of universities differ from other countries' regulations in some aspects. One of the biggest changes that the act established was in the legal form of universities: universities are either corporations under public law (public universities) or private foundation universities governed by the Foundations Act (Universities Act 558/2009). In this section, I will introduce the relevant characteristics of the national regulations that have influence on rewarding in universities.

Universities Act and University Funding Model

As mentioned above, the Universities Act was renewed in 2009 and the new act came into force in the beginning of 2010. The Universities Act states the following:

> *The mission of the universities is to promote free research and academic and artistic education, to provide higher education based on research, and to educate students to serve their country and humanity. In carrying out their mission, the universities must promote lifelong learning, interact with the surrounding society and promote the impact of research findings and artistic activities on society.*
>
> *The universities must arrange their activities so as to assure a high international standard in research, education and teaching in conformity with ethical principles and good scientific practices.* (Universities act 558/2009)

Thus, the Universities Act highlights the two main missions of universities, research and education. In addition, interacting with society while conducting these tasks, internalization, and high ethical standards are given a strong emphasis on. These priorities are directly adapted into the Funding Model by determining the focus areas of allocating the financing of universities.

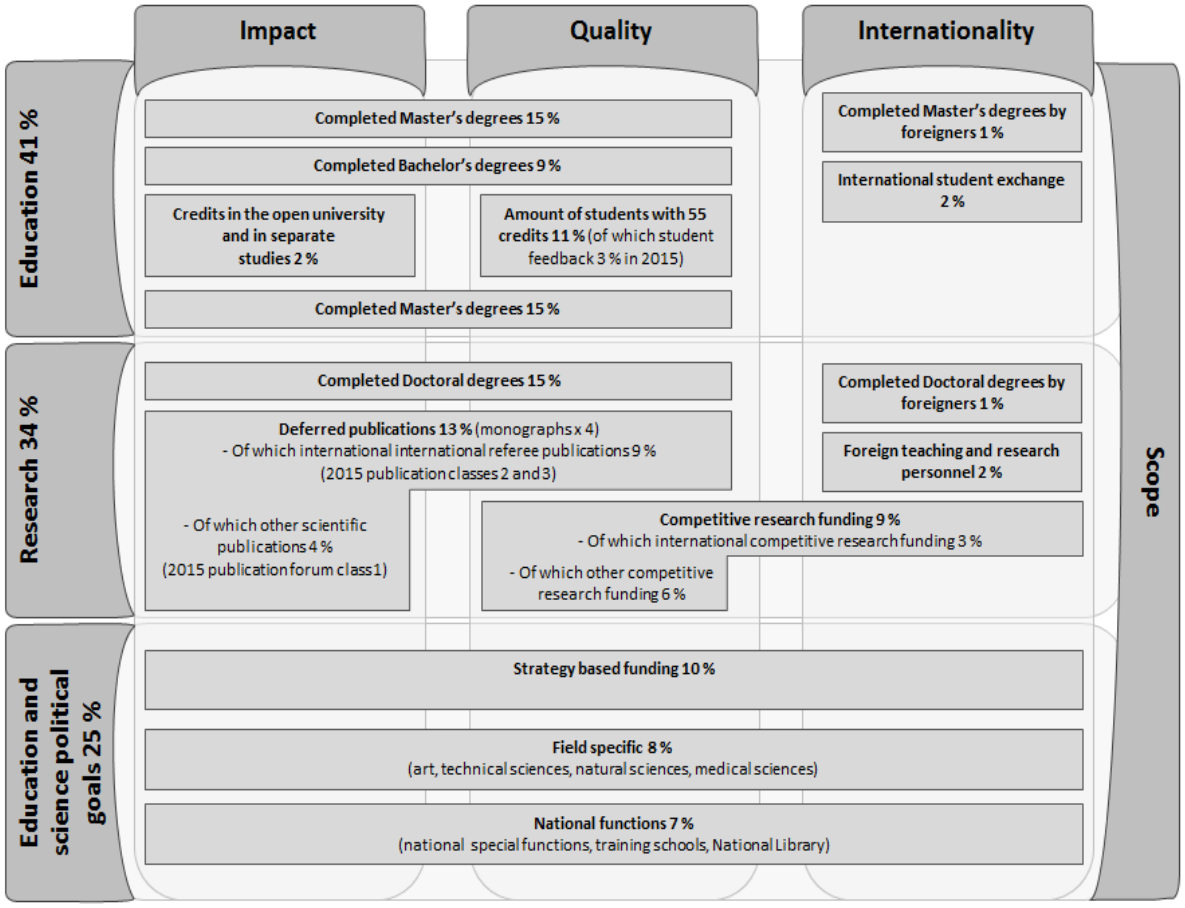
The idea of the new Funding Model is that the state provides funding for the core activities: degree education, basic conditions for research, and interaction with society through the previous activities. Further funding for profiling the university and for the special needs of the university is left for the universities to gather and compete for with each other. (Universities Funding Model, 2012.) The overall funding thus consists of the basic funding provided by the government and competitive funding including paid services, donations, and sponsoring (OKM, 2014; see Figure 1). Since the 1990's, the amount of external funding has multiplied and increased rapidly both in absolute and relative terms (Kuoppala, 2005).

What is notable in Figure 1 is that education, research, and political goals define the guidelines for the governmental funding. The goals set by the Ministry of Education and Culture (Universities Funding Model, 2012) thus set the frames for the activities of individual universities, which has been visible in the goals and similarly the incentive schemes of universities (Kallio, 2014). Even though Finnish universities have gained more autonomy over the content of teaching and research, personnel policies, and resource allocation since the 1990s, the governmental funding schemes have had a significant influence on their behavior and strategies (Kuoppala, 2005). They in turn have formed a base for the compensation systems that are used in many of the Finnish universities. This way, even though universities are seemingly autonomous, the government has maneuvered the goal-setting and performance management of Finnish universities significantly. Indeed, the new legislation has affected the strategic and financial management as well as management systems in universities even though the some of the goals set by the government are seen contradictory (Kallio, 2014).

What comes to planning and budgeting in universities, they are not as independent as the wording in the Universities Act suggests[2] but is strongly affected by the contracts between each university in Finland and the Ministry of Education and Culture (OKM, 2014). The contracts are renegotiated every four years and they contain a performance agreement

[2] 'corporations under public law' or 'independent foundations' instead of purely public organizations

Figure 1: Basic funding of universities
The basic funding of universities from the year 2013 onwards (Universities Funding Model, 2012).



including the operational and quantitative goals of the university in question as well as the allocation required for achieving the goals (Hölttä, 1998). Consequently, also the monitoring and evaluation are agreed upon in the negotiations and thus are not only by the universities to decide but institutionally determined. Hence, NPM in the forms of monitoring and evaluation, i.e. performance management, is built in to universities by the state authorities already. Each of the contracts has the same overall goals that are aligned with the goals of the Ministry of Education and Culture, i.a. the following: improving the overall quality of teaching, gaining competitiveness through research and innovative actions, and guaranteeing quality through internalization (Contract Aalto University, 2012).

This, however, does not automatically mean that the evaluation of individuals was built in similarly; the contract covers primarily the university-wide performance (Hölttä, 1998). How the contract does influence the individual level is through strategy and the overall objectives that affect unit-level and furthermore individual goals. This is consistent with the latest of the

three doctrines[3], *management by results* (Kuoppala, 2005). In the management by results doctrine, universities are seen as entrepreneurial units with a strong influence and drive from the market forces instead of only being government-regulated institutions (Kuoppala, 2005). A similar trend can be seen globally as the market orientation of universities has grown in other countries as well (e.g. Modell, 2003). While universities have gained more autonomy over the content of teaching and research, personnel policy, budgeting, and internal organization since the 1990s, the governmental bodies remain with a tight grasp in steering the actions of universities through the university-specific contracts at the same time (Kuoppala, 2005).

All in all, the orientation towards a more performance and market oriented university environment by the government in Finland is familiar from universities around the world (Geuna & Martin, 2003). New Public Management is in a way forced on to universities by governments already, making them follow certain performance indicators regularly. Even though those indicators are university-wide, in many cases individual performance measurement is used as if as a consequence of organizational-level indicators and moreover connected to the rewarding of individual professors (Kallio, 2014). These are the circumstances that universities in many countries have to adapt with but without recognizing the differences with the private sector, NPM practices might have negative effects on their performance.

2.3 Academic careers

Academic careers have also distinctive features from those of the private sector. A popular way to organize the employment of university professors is tenures. The employment and career structure of professors often follow tenure tracks, even though in some countries such as Australia the proportion of tenured staff is decreasing (Marginson, 2000). The dominating features of tenures are the stability of the employment relationship because the employee has the post until retirement, and fixed salary that might increase on the basis of a pre-determined scale, e.g. service time, or through salary negotiations. For instance, tenure tracks are used in many universities both globally and in Finland[4].

There has been discussion about whether tenures are the most optimal way to organize academic careers and if they should be replaced with renewable contracts (Bess, 1998;

[3] The three doctrines are the official Finnish state higher education policies (Kuoppala, 2005)
[4] e.g. Aalto University, University of Eastern Finland, and Tampere University of Technology

McPherson & Schapiro, 1999). Tenures are found, for instance, to lower the level of stress related to future earnings (Thorsen, 1996) and provide academics freedom and flexibility to carry out their academic work (Nir & Zilberstein-Levy, 2006). On the other hand, a tenure system creates some costs as well; for instance, tenures are claimed to reduce the efficiency of the faculty (Bess, 1998) and to protect mainly those professors who do not publish or teach much and are not motivated to do their work from uncertainty; well-performing professors would have an optional place to go to (Tullock, 1996).

Without taking a stand on whether tenures are the most optimal way to organize professors' careers, the influence of tenure on the professors' work motivation is an interesting question. Nir and Zilberstein-Levy (2006) suggest that tenure maintains faculty members' motivation to pursue new goals. Tullock (1996) offers a different opinion by stating that tenure allows free-riding and laziness. All in all, most of the academic literature seems to have a consensus that tenure system is improving professors' motivation (e.g. McPherson & Schapiro, 1999; Carmichael, 1988); however it must be born in mind that the authors publishing on the topic are professors themselves, which might bias their interpretations. On the other hand, those who choose an academic career tend to have strong intrinsic motivation towards their work (Bailey, 1999), which keeps the level of their performance and quality of work naturally higher regardless of whether they have a safe position of not. Carmichael's (1988) model suggests that if tenure was abolished, the most prominent young scholars would feel their future job prospects to be endangered, which would in turn affect overall motivation negatively.

The motivational aspect of tenure is interesting: as concluded, it fits well with people who are heavily internally motivated in the first place since they do not need strong monetary motivators to perform well. However, there might be people whose overall motivation, after getting tenured, could be increased by introducing some external motivators even if they had strong internal motivation. One way how universities often combine tenures with external, performance-based motivators is by including a merit pay in their salary systems (Kasten, 1984). This is also consistent with the NPM thinking by having some performance measures through which a university management tries to influence professors' performance. The next chapter will discuss the aspects of work motivation that should be considered while developing performance-based rewarding for professors as well as ways to organize overall rewarding when tenure exists.

3 WORK MOTIVATION AND REWARD SYSTEMS IN UNIVERSITIES

Reward systems are one way of integrating the actions of employees with the organizational goals and consequently with the organization's strategy (Kaplan & Norton, 2001). In academia, the path from performance to organizational goals follows partly the same steps as in the corporate world but there are, however, contextual differences between employees and the nature of work between these two environments. In addition, work motivation usually appears in different forms in academia and in the corporate world even though the basic motivation theories can be applied in both contexts. In this chapter, I will build a motivational framework for this study by using behavioral agency theory as a basis and applying it in the university context. Finally, I will review the previous literature about reward systems and combine it with the motivation theories as well as the university context.

3.1 Work motivation

Work motivation has been an important concept in management accounting research, used to support the theories of control systems and rewarding, for instance. It has been given definitions varying from broad (Wright, 2001) to more detailed (Graham & Weiner, 1996). Nevertheless, as with many other theoretical concepts, work motivation has no dominant definition (Mitchell, 1982). Wright (2001) defines the primary objective of work motivation research as "not -- to learn why employees act as they do but, instead, to learn how to motivate employees to perform the duties and responsibilities assigned by the organization". Following this paradigm, work motivation can be perceived as an employee's motivation to perform the tasks and responsibilities set for them by the organization, also performance quality being a part of the definition.

There are a great number of different motivation theories and their extensions regarding incentives and work motivation, for instance the classic theories such as Maslow's (1954) need hierarchy theory, Herzberg's motivation-hygiene theory (Herzberg;Mausner;& Snyderman, 1959), and agency theory (Baker;Jensen;& Murphy, 1988). These theories serve as a basis for various studies; for instance agency theory has been used in economic studies and studies about management incentives especially. However, the behavioral aspects have often been neglected in motivation theories. To respond to this shortcoming, Pepper and Gore (2012) have further developed behavioral agency theory (BAT) based on previous literature (e.g. Wiseman & Gomez-Mejia, 1998). Behavioral agency theory is based on, as can be noted, traditional agency theory but additionally combines theories about extrinsic and

intrinsic motivation, crowding-out theory, and expectancy theory (Pepper & Gore, 2012), for instance. The following chapters will go into these theories, starting from traditional agency theory and continuing with BAT and its building blocks.

3.1.1 Traditional agency theory

As stated above, one of the traditional theories explaining incentives and aligning the interests of an employer and employees is agency theory. Agency theory seems to be applicable for many different academic orientations such as accounting, social sciences, economics, finance, and organizational behavior (Eisenhardt, 1989a). The basic assumption in agency theory is that an agency relationship, a contract, exists where a principal and an agent with conflicting interests are parties to (Tosi;Katz;& Gomez-Mejia, 1997). The agent has some decision making power on behalf of the principal(s) but due to the probable conflict of interest, they do not always use the decision making power according to the best interests of the agent (Eisenhardt, 1989a). Because of this paradigm, the following types of agency costs can occur: 1) the monitoring expenditures by the principal, 2) the bonding expenditures by the agent, and 3) the residual loss, i.e. the loss that occurs despite of the monitoring and bonding (Jensen & Meckling, 1976).

Besides having conflicting goals, agency problems can occur because the principal cannot be aware of everything the agent does and may lack essential information (Eisenhardt, 1989a). Monitoring is often a solution to this problem (Tosi et al., 1997): the principal can introduce an information system to better follow the agent's actions. Another option to reduce the conflict of interests as well as minimize the agency problem arising from insufficient information is to provide the agent with incentives in order to align the interests of the agent and the principal (Eisenhardt, 1989a). However, if the incentive is based on objective indicators, there is a danger that the agent will start gaming with them: it is possible to improve or manipulate the numbers that the incentives are based on and ignore the unobservable dimensions of performance (Dixit, 2002).

Several scholars have pointed out the deficiencies of agency theory (see e.g. Pepper & Gore, 2012; Steel & König, 2006; Gomez-Mejia & Wiseman, 1997; Wiseman & Gomez-Mejia, 1998). For instance, agency theory overlooks the intrinsic motivation factors and assumes monitoring and contracting to be the best options for aligning the goals of the principal and the agent (Eisenhardt, 1989a). However, Besley and Ghatak (2005) found that motivated agents do exist, especially in non-profit and public sector, including universities – mission-

oriented organizations – and thus the goals of the principal and the agent are inherently closer to each other. Additionally, what comes to universities, the gap between management (often consisting of academics as well) and employees, namely professors and other academics, is quite narrow and the management understands the needs and drivers of the employees. This originates from academic leadership (Ramsden;Prosser;Trigwell;& Martin, 2007): a department chair, for instance, is often chosen amongst the professors of the department and hence represents both of the parties, the management as well as the employees. This is one of the factors that make agency theory alone insufficient for studying how to motivate professors and influence their performance: no wide and significant gap between the interests of management and professors exists.

One suggested improvement of traditional agency theory is behavioral agency theory which takes elements from behavioral theories to achieve a more complete framework explaining motivation, incentives, and achieving goals. This more holistic approach on work motivation will be introduced in the next subchapter.

3.1.2 Behavioral agency theory

The advantage of behavioral agency theory is that it combines elements from different motivation theories taking human behavior into account (Pepper & Gore, 2012). Examining compensation from the human behavior point of view is particularly well justified because when ensuring the efficacy of compensation, it is vital to consider the factors that describe, drive, and decide our behavior (Steel & König, 2006). The additional value of the theory compared to traditional agency theory comes from the consideration of various behavioral theories. These theories include elements such as the relationship between extrinsic and intrinsic motivation and crowding-out theory (e.g. Fehr & Falk, 2002), inequity aversion (Fehr & Schmidt, 1999), expectancy-valence theory (Kominis & Emmanuel, 2007), goal-setting and self-efficacy theories (Locke & Latham, 2002; Bandura, 1994), and the inclusion of time-discounting. These elements will be described in this subchapter and in the next chapter a motivational framework will be built around these theories.

Pepper and Gore (2012) formulate an agent's performance (P_a) as a function of their ability (A), motivation (M), and opportunity (O) to perform as follows:

$$P_a = f\ (A, M, O) \tag{1}$$

Their main argument is that instead of only considering the abilities and opportunities of an agent, their work motivation plays an important role in ensuring the optimal outcome. The ability to perform refers to the personal attributes of an agent that enable them to perform the tasks (e.g. knowledge and skill) whereas opportunities are the external conditions such as the necessary work structures that allow the performance. (Pepper & Gore, 2012.) The agent's motivation to perform, in turn, is something that drives a person to make an effort to achieve a goal (Eccles & Wigfield, 2002). It is something in between the other two variables: it can either be caused by an external cause or derive from inside the agent.

Motivation theories have long distinguished between extrinsic and intrinsic motivation as drivers of human behavior. The most common definitions are that extrinsic motivation is driven by contingent rewards followed by performing a task (Ryan & Deci, 2000a) while intrinsic motivation refers to an individual's desire to perform for the desirability of a task per se (Benabou & Tirole, 2003). There is no doubt that extrinsic motivators, such as basic salary, are essential for work motivation to some level. However, the significance of intrinsic motivation cannot be neglected when talking about increasing performance levels especially with motivated agents, and finding the balance between extrinsic and intrinsic motivation is in a key role in the discussion. The importance of stable employment and salary (such as tenures), for instance, is usually high when employees possess – or ought to possess – high intrinsic motivation, allowing them to form personal associations to the work and co-workers (Kreps, 1997). Traditional agency theory does not itself, however, recognize the option that extrinsic incentives could lower effort levels but sees them as aligning interests between the agent and the principal (ibid.). In behavioral agency theory, this option is acknowledged and considered by studying the relationship between extrinsic and intrinsic motivation.

Kominis and Emmanuel (2007) found in their study on middle management that the motivation and consequently performance were strongly affected by both intrinsic and extrinsic motivation. This supports the orientation towards considering both extrinsic and intrinsic motivation when studying performance management and goal-setting. Most of the motivation theories do indeed seem to imply that intrinsic motivation is at least as important as extrinsic; some scholars emphasize it even more (Benabou & Tirole, 2003). There is also a perception that extrinsic motivators might decrease intrinsic motivation (e.g. Deci, 1971; Kreps, 1997) – a phenomenon that is also called the crowding-out effect (Frey & Jegen, 2001). However, for instance Amabile (1993) discovered that extrinsic and intrinsic motivation can interact positively with each other and thus cause *crowding in*. It would seem

to be the case that extrinsic motivators can either detract from intrinsic motivation and shift it towards extrinsic motivation which simultaneously decreases the overall level of motivation; or it can enhance overall motivation. The nature of the motivator determines the consequences: money seems to decrease intrinsic motivation whereas verbal, positive feedback increases it (Deci, 1971; Frey & Jegen, 2001). This is supported by motivation crowding theory and the empirical evidence that was found to support the statement (Frey & Jegen, 2001).

Crowding-out theory or motivation crowding theory explains the relationship between extrinsic and intrinsic motivation, as described above, especially when an external extrinsic motivator exists. From a psychological perspective, Frey and Jegen (2001) identified two processes and two conditions derived from the processes explaining the effect of extrinsic motivators on intrinsic motivation: individuals can perceive an external intervention as (1) controlling and reducing their self-determination (*impaired self-determination*) or (2) that their motivation is not acknowledged (*impaired self-esteem*). Self-determination refers to the levels in which a person does something without an external interference because they are intrinsically motivated, versus the levels in which a person is motivated by external motivators (Ryan & Deci, 2000a). Strong self-determination is important for intrinsic behavior and therefore creating crowding in requires building conditions that "support one's feelings of competence, autonomy, and relatedness are the basis for one maintaining intrinsic motivation and becoming more self-determined with respect to extrinsic motivation". (ibid.)

As a consequence of these processes, external interventions perceived as controlling damage both self-determination and self-esteem and are thus crowding out intrinsic motivation. On the other hand, external interventions can be perceived as supportive which will enhance self-esteem and enlarge self-determination, and eventually crowding in occurs. Furthermore, Deci (1980, p. 217) suggests that peoples' self-determination could be exploited by emphasizing the informative aspect of rewards rather than that of the controlling, i.e. guiding activities towards desired performance. However, Fehr and Falk (2002) raise the question that even if an external monetary incentive did decrease intrinsic motivation, the overall motivation might still be higher than with no monetary incentive at all. Therefore the total effect of the incentive and consequently the performance can be positive even if intrinsic motivation did decrease; in that case the question would be whether the increase of extrinsic motivation amounts to more than the decrease of intrinsic motivation.

Referring to the performance function (1) of Pepper and Gore (2012) and the analysis above, it would seem that an extrinsic reward system should avoid weakening intrinsic motivation in the academia since academics are already considered to have strong intrinsic motivation. The motivational impact of extrinsic incentive schemes and rewards might turn negative if they consist of incomplete and inaccurate performance measures or if the link to the measured performance is not transparent (Kominis & Emmanuel, 2007). When designing an extrinsic incentive of performance-based pay scheme for employees possessing high intrinsic motivation, they should be communicated as supportive extrinsic interventions so that the overall motivation would not decrease. Since intrinsic motivation plays an important role in the work of academics, being especially careful with the effects of extrinsic incentives is vital.

Another component of behavioral agency theory, **goal-setting theory** (e.g. Locke & Latham, 2002), indicates that setting challenging goals for individuals, or for groups for that matter (Locke & Latham, 2006), without having a corresponding extrinsic reward connected to the goal might increase motivation and performance in itself. This theoretical statement is strongly supported by empirical research, ninety percent of the studies on the topic supporting the results (Locke;Shaw;Saari;& & Latham, 1981). Thereby the goal in itself motivates the individual to perform well and the performance is driven by intrinsic motivation. There is also a great deal of literature about how to determine the goals in order to foster performance. Locke et al. (1981) connect goals to the value gained from achieving the goal and state that the value can derive either from intrinsic or from extrinsic motivation, or both – which gets us back to the relationship between intrinsic and extrinsic motivation.

Goal-setting theory is closely affected by **self-efficacy** which refers to people's beliefs about their capabilities of performance affecting their lives or goals (Staples;Hulland;& Higgins, 1998). High self-efficacy interacts with intrinsic interests and motivation: when people have high assurance about their own capabilities of performance, their intrinsic interest is fostered and they become more engaged in the task (Bandura, 1994). Self-efficacy can be strengthened in four ways: (1) through success and mastery experiences; (2) through the example of other similar to oneself and social models; (3) through verbal social persuasion; and (4) through reducing people's stress reactions and negative emotional predispositions (Staples et al., 1998). This would suggest creating an environment where positive experiences of success are emphasized and thus the employees' perceptions of their capabilities would be strengthened consequently. One way to do this could be through a reward system that is based on exceptional performance and where the reward is perceived as a tribute to exceeding.

Another central building block of behavioral agency theory is **expectancy-valence theory** which is based on the idea that employees rationally evaluate workplace behaviors and choose those that will most likely lead to outcomes they value the most (Steers;Mowday;& Shapiro, 2004). Steel and König (2006) compared the process of choosing among actions in the traditional expectancy-valence theory to rational gambling. The process is determined by two influencing factors: 1) the perceived probability of achieving an outcome (expectancy) and 2) the perceived value of the outcome (valence) (Steel & König, 2006). From here, the following, simplified formula can be derived (Kominis & Emmanuel, 2007):

$$M = E \times V \tag{2}$$

where the factorial of expectancy (E) and valence (V) equals to motivation (M). Even though the formula (2) is quite straightforward, it provides a more comprehensive picture on what affects an agent's motivation. If an organization wants to enhance the overall motivation of its employees, it should consider how probable the employee perceives achieving the outcome and how they value the expected outcome of certain performance. Setting the desired outcome level so that the employee perceives achieving it probable enough, however not too low, has therefore a significant influence on the person's motivation. The outcome can be either the direct outcome of performance or an external reward gained from achieving the outcome. If a person values the former, they are more intrinsically driven, and in the case of the latter, an extrinsic motivator drives performance.

Inequity aversion is another element of BAT that affects an agent's work motivation. It was first introduced by Fehr and Schmidt (1999) who defined an inequity-averse person as one who dislikes outcomes that are perceived inequitable. Hence the idea that people are only interested in their personal utility is questioned and a new perspective introduced: that some people can be also driven by perceived fairness regarding others. Englmaier and Wambach (2010), for instance, found that inequity aversion should affect the incentive structure. They argue that an optimal incentive contract balances "the agent's concern for insurance and fairness and the principal's desire to provide adequate incentives". Correspondingly, they continue that besides paying more, paying more equitably could also be an effective incentive instrument and thus enhance overall motivation. This would seem to be a good fit with the university environment consisting of professionals and experts of their field where also the evident competitiveness is missing.

Additionally, the time preferences of an agent affect the overall effects of extrinsic rewards on their overall motivation. **Time discounting** acknowledges that the timing of a reward is an influential factor as well. Time has been found to affect the agent's motivation: people tend to favor initiating tasks where the reward is closer in time over those where the reward is more distant, even if it was more valuable (Steel & König, 2006). Pepper and Gore (2012) acknowledge that the effect of a reward on motivation varies over time, depending on how near or far in the future from the performance the reward will be achieved. Thus, the delay in getting a reward, especially an extrinsic reward, causes decrease in motivation. This implies that in order to create a more effective reward system, the reward should be given close to the rewarded action.

After introducing the elements of BAT above, the following chapter will link work motivation and professors as well as create a motivational framework to support the analysis of overall rewarding in this study.

3.1.3 Work motivation of academics

Even though motivation theories are general in nature and have been applied to organizations with different contexts, academics as professionals have a few distinctive features in their work motivation (Miner, 1980). What comes to the performance function (1) in the academic world, the assumption usually is that professors possess the required abilities since they chose an academic career and that they have sufficient motivation to use their abilities (ibid.). This would suggest that as long as they have enough resources, their performance is near to optimal. Consequently, it can be argued whether professors' motivation and correspondingly performance can be increased by NPM practices such as rewarding and whether there is a negative effect from using them.

A general assumption is that professors possess high intrinsic motivation towards their work. Even though there are different perceptions in academic literature, study findings exist that especially tenured faculty members are principally intrinsically motivated to do research (Chen et al., 2006). Furthermore, Lee (2001) also found that faculty members' teaching motivation is intrinsically driven. This implies that professors can, indeed, be treated as motivated agents as was assumed in Chapter 3.1.1 and consequently the need for goal alignment between the agent and the principal is smaller. It also suggests that it is justified to use tenures while they were found to fit well with organizations where employees are strongly

driven by intrinsic motivation. Tenure, in turn, maintains the environment fostering intrinsic motivation, which leads to a positive circle of strong intrinsic motivation.

If professors are assumed to have high intrinsic motivation in the first place, it can be asked whether their overall motivation can be affected positively by establishing extrinsic motivators such as performance-based incentives or other pay. Pfeffer and Lawler (1980) studied the connection between an individual's commitnment to an organization and extrinsic rewards in university and college faculties. They found indications that extrinsic rewards would be less effective for individuals whose behavioral commitment to the organization is strong. As commitment is supported by tenures, it could be assessed whether tenure creates an environment where extrinsic rewards do not have a significant meaning in professors' motivation. In addition, there is a danger with extrinsic rewards in universities that the negative effects of crowding-out theory – impaired self-determination and impaired self-esteem – emerge and the professors feel controlled and that their motivation is understated. If this is the case, the main source of professors' motivation, intrinsic motivation, will most likely decrease as a consequence of the crowding-out effect.

In order to avoid the crowding-out effect, organizations should establish extrinsic motivators which professors perceive as supportive and informative rather than controlling. This can partly be done by choosing the form of the motivator carefully, but correct communication plays at least as important a role as the chosen motivators. While professors are considered to have high intrinsic motivation and be self-determined (Lee, 2001), external control should offer some loose limits and guidelines but provide freedom within the limits simultaneously. This way they could be encouraged to perform the desired activities without losing the feeling that their work and performance is self-determined – i.e. the external intervention would be supportive. Similarly, the informative aspect should be emphasized: these issues are important; it is hoped that they are paid attention to at work, and by doing that, a valued outcome will be accomplished.

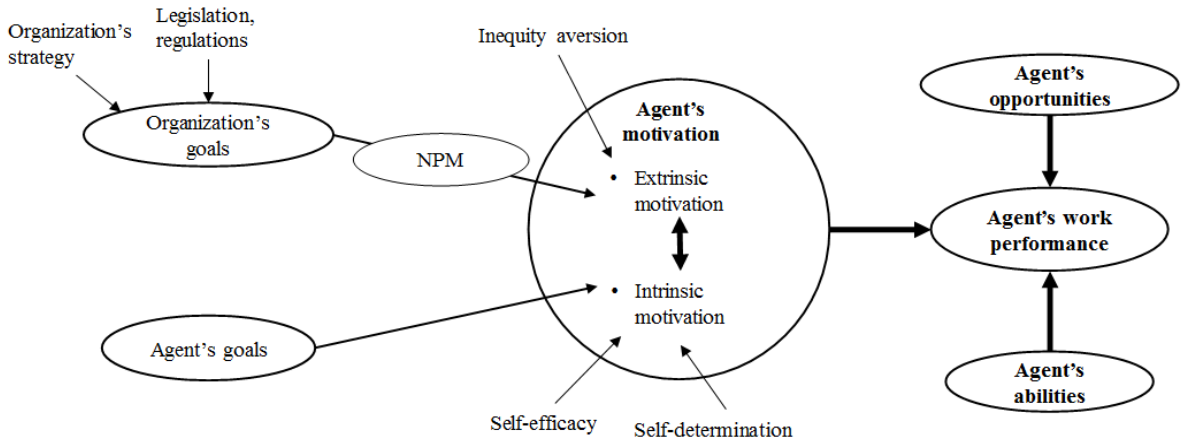
Combining self-efficacy and goal-setting theories, high intrinsic motivation possessed by professors may on the other hand be partly because of their high beliefs about their capabilities while professors are presumably extremely competent in their field. With high intrinsic motivation, properly defined goals will stimulate performance. Similarly, goals can be used as a means to enhance self-efficacy, for example by highlighting the person's success when achieving their goals or by highlighting the example of others when they achieve them

(Staples et al., 1998). This will eventually lead to higher intrinsic motivation according to self-efficacy theory, which underlines the effect of pre-determined goals as a motivation driver. In addition, achieving goals can be combined with extrinsic rewards; however, the rewards should again be perceived as supportive and informative rather than controlling so that the effect on intrinsic motivation is not diminished.

Figure 2 shows the motivational framework for public sector organizations at a general level, derived from behavioral agency theory (Pepper & Gore, 2012). The framework is built around the performance formula (1) within a university context, the elements of the formula (agent's motivation, opportunities, and abilities that result in the agent's work performance) forming the essence of the framework. They are marked in thicker circles and arrows, and the arrows indicate that performance is eventually a consequence of these three elements. Agent's motivation is further divided into extrinsic and intrinsic motivation as has been defined before and the two-sided arrow symbolizes the crowding-in and crowding-out relationships between these two types of motivations.

In addition to these elements, organization's goals and agent's goals are part of the basic structure in the framework, affecting the agent's extrinsic and intrinsic motivation respectively. The relationship between agent's goals and intrinsic motivation is derived from goal-setting theory, according to which the agent's goals interact with intrinsic motivation (Locke & Latham, 2006). Furthermore, it is assumed that organization's goals are communicated to the agent by using NPM practices and that the practices affect the agent's extrinsic motivation by creating external interventions. In an ideal case, these two goals would be very close to each other; this would be a situation where the interests of the

Figure 2: Motivational framework in public sector organizations



principal and the agent were as aligned as possible. This often is the case in universities at the macro level because of academic leadership, at least more than in private sector organizations. However, there are most likely differences at the micro level and establishing external rewards is one way to decrease the differences between the goals.

In addition to the core elements of the framework, I included other, contextual factors that influence these elements. Since they are not in the essence of the framework, the relationships between them and the core elements are marked with thinner arrows. These factors include the organization's strategy as well as different legislations and regulations that influence the organization's goals. Furthermore, the agent's perceptions about their capabilities (self-efficacy) and self-determination affect the agent's intrinsic motivation. Finally, inequity aversion has an influence on extrinsic motivation through the perceived fairness of extrinsic incentives (Bandura, 1994; Ryan & Deci, 2000b; Englmaier & Wambach, 2010) and consequently on intrinsic motivation through motivation crowding.

The motivational framework will serve as a basis of the analysis as well as a context against which reward systems are reflected in the next chapter. The analysis will focus on how to affect the agent's motivation rather than the opportunities and abilities since the latter are not under the direct influence of rewarding.

3.2 Reward systems

Employee reward systems are an important part of motivating employees to perform according to the organization's strategy (Lawler & Jenkins, 1992). They are part of the overall management control system package (Malmi & Brown, 2008) and can consist of various elements such as monetary rewards[5], non-monetary rewards[6] (Bartol & Srivastava, 2002), and career[7] (Hsieh & Chen, 2011). A reward system can be defined to consist of everything employees receive from their employer in return to their work performance (Hsieh & Chen, 2011). There are several ways to organize reward systems, starting from what the organization wants to achieve with them to how the processes and the structures related to the reward system are built. In the following, I will go through the objectives of reward systems as well as how to structure them. Finally, I will conclude the use of rewarding as a NPM practice in order to motivate university professors and steer their performance.

[5] Monetary rewards can be e.g. base pay, long-term and short-term bonuses or merit-based salary increase
[6] Non-monetary rewards include elements such as awards and verbal recognition
[7] Career opportunities can consist of e.g. training, career opportunities, and development

3.2.1 Objectives of rewarding

In most cases, two basic elements of a reward system are a fixed base pay and a variable, performance-based element. The latter is a common pay element in one form or another especially in corporate organizations. The following objectives are often mentioned with regard to variable pay: to give direction to employee performance and motivate employees towards the intended goals (Henri, 2006). The former indicates that through variable incentives, organizations can communicate their goals and what is perceived important to employees and that way steer their actions towards wanted performance. Similarly, by offering rewards for achieving the communicated goals, organizations can offer extrinsic motivators for employees to strive for these goals. These two objectives often go hand in hand in organizations.

Linked to the first objective mentioned above, performance-based rewards are an important management accounting tool in formulating the organization's strategy to employees and consequently implementing it. They play a central role in giving signals to individuals about what is important and about the strategic direction towards which individuals are expected to perform. (Chenhall & Langfield-Smith, 2003.) When management wants to steer employees through rewarding, they have to keep in mind that monetary incentives or performance-based pay should not be perceived as controlling but rather informing (ibid.) or supportive instead. Otherwise the effects of the reward might have a performance-steering effect but at the same time decrease intrinsic motivation. Therefore one should be careful with how the incentive system is communicated especially in professional organizations where employees highly value freedom. When they are perceived more as informing, i.e. providing information about the goals and strategic objectives, employees feel that they maintain their personal control over their work and the potential decreasing effect on intrinsic motivation through impaired self-determination is far less powerful.

Another danger of using rewarding as a performance-steering tool is that some parts of performance might be ignored even though they were essential for the organization (Baker et al., 1988). This might be because those actions are not easily quantified or their meaning is not acknowledged by the management. The sentence "what you measure is what you'll get" (Ariely, 2010) is often used in connection with performance management: the attention is focused on those issues that are measured and communicated and they get conducted more easily. This is connected to agency theory: the agent might either deliberately improve the measured indicators or unconsciously focus only on the tasks that are communicated through

rewarding. Correspondingly, what is not measured often gets less attention and might even be completely neglected.

The second way how rewarding can be used as a management control tool is to provide external motivators to employees for specific performance by rewarding for desired outcomes. This follows the logic that an agent's motivation is influencing their performance: the more motivated they are, the better they perform. As was explained earlier in the chapter, how the agent perceives extrinsic rewards has a significant meaning: if they are perceived as controlling, the motivational effects are negative but with supportive external rewards, a positive motivational effect is possible. In order to build a reward system that creates external motivators with positive effects on overall motivation, the motivational framework introduced in Chapter 3.1.3 (Figure 2) plays an important role: by linking different components of rewarding to the motivational effects, a better connection between rewarding and performance outcomes can be drawn. In the following, overall rewarding is viewed from a more practical point of view: what can be regarded as part of a reward system and how it can be constructed in order to motivate and steer employees.

3.2.2 Different ways of rewarding

Lawler (1993) distinguishes two dimensions in reward systems: they have a process and a structural feature. By processes he means the communication and decision processes linked to the reward system, in other words the way reward systems are designed and administered, and the structural dimension refers to the formal mechanisms, procedures, and practices through which the rewarding is executed (Lawler, 1993), i.e. how to construct overall rewarding. While processes (e.g. how to communicate the system to employees) are important in implementing the reward system, this study will focus on how to build an effective reward system for knowledge workers. Hence, the focus of this study is on the structural elements and consequently the structural dimension will be in the focus of this chapter.

Often the starting point of building the structure for rewarding is to determine the base pay (Lawler & Jenkins, 1992). If an organization wants to reward performance on top of that, the method by which the performance dimension is taken into account should be decided. In practice, most organizations have both fixed and variable compensation elements, the latter usually being performance-related (Van Herpen, van Praag, & Cools, 2005). Rewarding for performance is perceived as a way of acknowledging those that make more effort for the organization and providing incentive to perform towards the organizational goals. In addition,

most organizations want to create a motivational effect by performance-based pay and this way improve performance. There are two common ways to link pay to performance: a merit system and an incentive, or a bonus, system (Lawler & Jenkins, 1992).

In a merit pay system, salary increases are given according to the employee's performance. However, companies often have difficulties in clearly linking the pay to performance and the pay is often subjectively determined by the employee's supervisor (Heneman & Cohen, 1988). In this case, the attempt to motivate staff with the merit system turns out to be less effective. Thus, if an organization wants to motivate through merit increase, the increase should be clearly and transparently linked to performance and the linkage must be done ex ante, i.e. the goals must be determined beforehand and the individual has to be aware of them. In order to communicate what the management wants from the employees with respect to their performance, they have to be careful when designing the merit system. If they want to gain the desired effects, defining the desired performance and how to determine whether it was gained or not has to be done thoroughly. Van Herpen et al. (2003) found that career concerns, e.g. promotion opportunities, have an impact on both intrinsic and extrinsic motivation, especially when alternative possibilities for salary increases do not exist. This would indicate that either a transparent and fair promotion system or a merit increase system provides an important incentive device for employees.

Incentive pay, on the other had, is often a more direct way to link pay to performance and it has been found to have also a more direct effect on motivation than merit pay in corporations (Lawler, 1993). In incentive systems, the variable, performance-based pay is determined from time period to time period and it can vary notably depending on the employee's performance within each period. The basis for determining the bonus is often objective and alike for each employee (ibid.). Incentive systems have found to match some organizations better than others, depending on the nature of the work. They often work better in organizations with outcomes that can be comprehensively measured and relatively stable nature of the work (Gerhart;Milkovich;& & Murray, 1992; Lawler & Jenkins, 1993). For instance, a production company might meet these requirements but in knowledge-intensive organizations like universities where the employees rather than the processes create most of the value, bonus systems might face challenges. In such contexts, the multidimensionality of work and outputs that are difficult to quantify make it more difficult to create a fair incentive system.

Besides the base salary and performance-based elements, total rewarding can consist of other forms of rewarding as well. For instance, well-performing individuals or teams can be recognized by other means than monetary bonuses or merit increases. Other recognition can be e.g. awards (Employee of the Year etc.), making extraordinary achievements visible through communication, or small monetary prizes. Lawler (1993), for instance, suggests that if an organization's success is dependent on both individual performance excellence and group work, "it may make sense to focus at least some of the reward system on recognizing outstanding individual performance". Kalleberg (1977), additionally, classifies adequate resources as a job reward as well. He argues that adequate resources such as equipment, authority, and information required for job performance are of a concern for employees and affect the final performance. Thus, if the resources are not sufficient, it may cause frustration amongst employees and consequently decrease their motivation and performance. While some might not see providing adequate resources for employees as a reward, it might have a motivational effect on others through to the increased freedom of work they provide for employees, for instance (Kalleberg, 1977).

An alternative to rewarding the performance of an individual is a group-based incentive. A group-based inventive could be a possibility when work performance is dependent on the performance of several people, a group, and when the contribution of an individual employee to the actual output is difficult to measure (Hansen, 1997). There are a few options how group performance is taken into account: an individual may have a group dimension in their performance appraisal, the whole team might be rewarded for their good performance, or an employee can be rewarded for organizational performance, which is an indirect way of rewarding for group performance (Lawler, 2003). Hansen (1997) found that group incentives increased the average performance level within the studied units by improving the performance of initially lower performers. However, group-based incentives may cause a free rider problem but when designed properly, they potentially increase an individual's performance (Hansen, 1997; London & Oldham, 1977). Lawler (2003) argues that "rewarding the team as a whole will lead to more knowledge development and sharing than will rewarding individuals". It is also logical to deduce that inequity averse persons would appreciate this type of rewarding while the entire group gets a reward for an outcome they have achieved together.

Also the degree of centralization of the reward system is a relevant question what comes to multidimensional organizations. In these organizations it has to be decided which elements of

rewarding are determined at which level of the organization and how the decision power is distributed. When rewarding is centralized, the reward practices are similar for employees throughout the organization and the pay processes are standardized whereas in a decentralized system smaller units are responsible for the design and administration of rewarding (Lawler, 1993). Both have their advantages, the former being able to exploit the administrative expertise at the central level (ibid.) and the latter being able to better consider the unit-specific differences and features (Gomez-Mejia, 1992). A decentralized system seems to fit especially organizations which have multiple units that differ significantly from each other. The centralization level can also be something in between these two extreme cases, having some centrally determined guidelines or principles in the frames of which the lower units can determine their own systems.

3.2.3 Reward systems in universities

Universities are strongly knowledge-based organizations. They differ significantly from traditional production organizations where individuals are not the key competitive advantage. Because human capital is vital for them, Lawler (2003) states that reward systems used in traditional production organizations are not optimal for knowledge-based organizations. He suggests that instead of determining an employee's pay by their jobs and positions, it would be better to reward knowledge workers according to the person. In addition, rewarding for performance has been found to motivate employees to perform better (Lawler & Jenkins, 1992). This would suggest using a base salary determined by the person and including a system that includes performance in rewarding. This can be done, as stated before, in two different ways: either by implementing an incentive pay system or by having a merit pay system.

As often is the case in knowledge-based organizations (Mohrman, 2003), academic work is **multidimensional** in nature (Blaxter et al., 1998). Academics have a number of tasks they are expected to perform, including conducting and publishing research in scientific books, journals, and conferences; teaching and supervising thesis and doctoral students; community involvement; networking; and engaging in administrative tasks (Nir and Zilberstein-Levy, 2006; Blaxter et al. 1998). In Finland, for instance, the expectations for what the academics are supposed to do originate already from the Universities Act and the other regulations that concern the performance of universities. However, despite the number of different tasks that are included in the academic work description, academics are expected to achieve excellent performance and fulfil the high standards that are set to them (Nir & Zilberstein-Levy, 2006).

Objective, performance-based elements of rewarding often take the multidimensionality into account by including measures reflecting different dimensions in the system, and in practice they are often designed to at least consider the different dimensions and tasks.

Despite the attempts to include different dimensions in them, incentive systems turn easily inefficient when the nature of work is multidimensional (Kallio, 2014). When all the dimensions are tried to be taken into account, there is a danger that reward systems often become extremely complex and transparency suffers. While the performance dimension is, in practice, often rewarded through an incentive system, incentive structures tend to become too complex and lose their motivating and steering effect as a result. In addition, multidimensionality connected to incentive schemes often increases game playing (Dixit, 2002). As plenty of previous research has concluded, this would suggest that incentive systems would not be the most efficient way to organize and manage professors' work. Furthermore, there are indications that reward structures in universities often tend to have failed to create incentives that maintain commitment and hard work (Bess, 1998).

Especially when the structures become complex and limiting, introducing NPM practices might cause frustration amongst professors expecting a certain level of **academic freedom**. Academic freedom refers to the freedom of a scholar to do research and teaching without having to fear punishment or termination of employment (Berdahl, 1990). Whilst being professionals and experts in their respective fields, Berdahl (1990) argues that procedural interventions, such as pre-audits, can be counter-productive. He discussed academic freedom at a university level, but the same argument would seem to apply at an individual level as well. Because professors are used to a certain level of autonomy in their work, NPM practices can easily be seen controlling and as an attempt to limit their freedom. On that account, reward structures should allow a certain level of freedom in an individual professor's work and try not to destroy the feeling of autonomy. This would support the use of supportive rather than controlling extrinsic rewards, which would also allow the professors to manage the multiple dimensions of their work independently and therefore support their self-determination (Deci, 1980).

Besides being multidimensional, professors' work is more **long-term** in nature, especially what comes to research. This creates challenges for rewarding since, due to the time-discounting effect, instant rewards are found to be more effective than rewards given after a longer period of time from the actual performance (Steel and König, 2006). Consequently,

there is a contradiction between the nature of the work and the effectiveness of rewards: because the final output is influenced by work from a longer period of time, it is often impossible to give immediate rewards. This, consequently, decreases the effects of the reward. In addition, yearly performance-based rewarding can hardly be optimal for work the results of which are seen after years of groundwork. Consequently, rewarding in universities faces the challenge of balancing these two time horizons.

Universities have had problems with reward systems and especially with connecting incentive scheme to the quality of performance (Kallio, 2014). One of the central problems is related to the quality and quantity of their work, for instance research papers: while some professors produce a great number of research papers with little significance, some professors might publish very few papers with a greater scientific contribution (Cole & Cole, 1967). The problem is related to the phenomenon that in the academic world, the quality of work is generally valued higher than the quantity, at least what comes to research. However, there is a contradiction between this idea and for instance the Funding Model of universities in Finland that was discussed above: the Funding Model and often also the compensation systems in universities encourage professors to publish more in quantities instead of better quality research and the measures are quantitative in nature rather than qualitative (Kallio, 2014).

One way to regard the qualitative aspect of work is to include holistic, subjective measures and assessment in rewarding. By the use of subjectivity in evaluation, any other relevant information that arises outside formal, objective measures can be taken into account (Gibbs;Merchant;van der Stede;& Vargus, 2004). This way the problems of complex calculation models or some work aspects being neglected can be bypassed. It would be reasonable to include a subjective element in the performance-based evaluation in universities since it is often impossible to acknowledge all the features of work with quantitative measures without complicating the system too much. However, subjective performance evaluation has its problems. For instance, it requires trust between the employee and the superior who is conducting the evaluation (ibid.) so that the outcome would not be based on any other than performance-related matters.

In addition to the professors' work being multidimensional, universities as organizations have multiple dimensions as well. They are often divided into different units and levels (i.e. schools, faculties, and departments) and these levels have their own administration, at least to some extent. (Clark, 1998.) Therefore, the question of centralization of rewarding is relevant

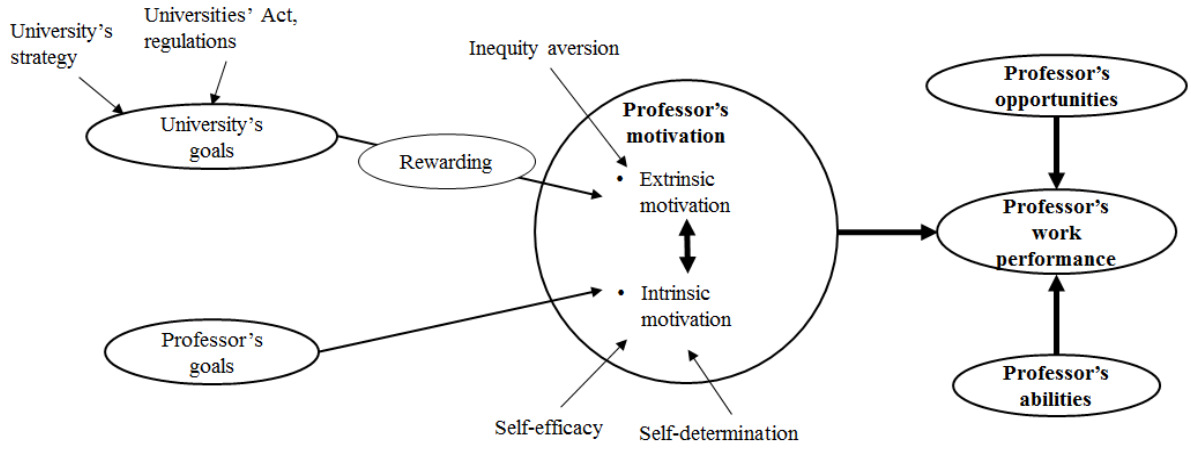
with regard to what is decided at the university level as a whole and how much flexibility, decision power, and freedom is given to which organizational level. In order to exploit the administrative knowledge at the central level and align the subunits strategically, some level of centralization is beneficial. However, different schools and departments can be very different from each other in terms of focus areas, research, teaching practices, and other elements of work, and as with multidimensional organizations in general, these differences can best be considered with unit-specific measures or elements of rewarding (Gomez-Mejia, 1992). Hence it would be justified to allow some level of decentralization to avoid generalizing too much.

Besides the centralization level, the unit that is subject to rewarding should be specified. While research in universities is often conducted in research groups (Sutton & Bergerson, 2001), giving a performance-based reward only to the professor in the group might seem inequitable to the other members of it. In this case, one possibility could be giving a mutual reward to the research group in order to decrease the inequitability (Kalleberg, 1977), for instance a recognition type of a reward or allowing them with more resources. This would be in line with the controllability of outcomes as well: the group as a whole controls the final outcome rather than an individual in most cases, and therefore the controlling unit would also receive the reward. On the other hand, another option could be that all of the individual members of the team could be rewarded based on the group's performance (Lawler, 2003).

In general, there is a lot of literature on how to design an incentive system or performance-related pay in order it to have a positive effect on performance. Transparency and fairness of the system are often emphasized (Van Herpen et al., 2005), and ter Bogt and Scapens (2012) emphasize transparency as an essential feature of NPM. Transparency can be delivered through communication and by avoiding complexity in the system, whereas fairness regarding the size of the compensation can be relative to either the principal or other employees (ibid.). Kauhanen and Piekkola (2006) found in their study that performance pay has motivational effects if employees are able to affect the outcomes of the measures (controllability of the measures), the organizational level included in the system is not far from the employee so that the target remains motivating, employees are familiar with the measures, they participate in the design process of the system, and the pay is perceived high enough.

Figure 3 presents a more specific motivational framework for university context based on the framework in Figure 2. Here, the framework is more specified: the organization is limited to

Figure 3: Motivational framework for university context



universities and professors are the agents of the situation. Furthermore, NPM is more specifically limited to rewarding which is in the focus of this study. Therefore, rewarding is the practice by which the university's goals are communicated to the professor and by which the professor's extrinsic motivation is influenced. Figure 3 shows how the objectives of rewarding are linked to the performance formula (1): the university can use it as means to influence professors' extrinsic motivation and eventually guide their performance towards its goals.

All in all, most of the literature about rewarding agrees that employee reward systems should be designed to fit the organizational context and strategy. Besides that, employees should perceive rewards as valuable if rewarding is used to motivate them towards wanted performance (Lawler & Jenkins, 1992): if they do not value the reward, it most likely will not affect their motivation positively. This is consistent with expectancy-valence theory which states that one of the factors affecting motivation is the expected valence of the outcome followed by certain performance. This notion makes it important to find out what are the types of rewards that the organization's employees value and appreciate and align the measures with the organization's strategy in order to have the wanted outcomes.

4 CASE ORGANIZATION, RESEARCH METHODS, AND DATA

The aim of this study is to evaluate the existing reward system for Full Professors at Aalto University and, moreover, to develop a proposal for a new university-wide system. Using motivation theories to approach rewarding in this particular situation is justified because the effects of extrinsic motivators on professors' intrinsic motivation seem to be a crucial question when designing a new reward system. Since professors are found to be intrinsically driven, their performance is likely to be affected by the relationship between extrinsic and intrinsic motivation. In addition, NPM connects rewarding with the academic world and gives a background why a reward system might fail in motivating professors.

This thesis is a part of a project that aims at developing a new incentive system as a part of the overall rewarding at Aalto University. The project team consists of one professor from each of the six schools of Aalto, two HR representatives and the author of this thesis as a student member. The empirical chapters of this study will cover the description of the current systems; the analysis of the empirical data based on a survey and theme interviews; and the proposal for the new system. In this chapter, I will first introduce the case organization, Aalto University, and then the methods used in the empirical research. Finally, I will describe the data used in the research.

4.1 Aalto University

Aalto University (Aalto) is one of the newest universities in the Finnish higher education field. It was formed in a merger of three universities from different fields of science: University of Art and Design Helsinki, Helsinki School of Economics, and Helsinki University of Technology. The idea of Aalto University is to form an interdisciplinary platform for innovation by bringing together people from the different disciplines: design, technology, and business (Myllyoja, 2008). Hence, the emphasis of the university is on innovation, top research and teaching, as well as internalization. The university started its operations in the beginning of 2010 as a foundation-based university, which was enabled by the new Universities Act that allowed universities to take a foundation form instead of being public institutions.

As said, three universities from different academic fields formed Aalto University. On the basis of the merged universities, there are six different schools in Aalto University: School of

Table 1: Schools and Departments in Aalto University
The schools and their departments in Aalto University in August, 2014 (Aalto University, 2014b).

School	Departments
ARTS	Architecture Art Design Media Film, Television and Scenography
BIZ	Accounting Economics Finance Information and Service Economy Management Studies Marketing
CHEM	Biotechnology and Chemical Technology Chemistry Materials Science and Engineering Forest Products Technology
ELEC	Electrical Engineering and Automation Micro- and Nanosciences Radio Science and Engineering Signal Processing and Acoustics Communications and Networking
ENG	Energy Technology Engineering Design and Production Real Estate, Planning and Geoinformatics Civil and Structural Engineering Applied Mechanics Civil and Environmental Engineering
SCI	Biomedical Engineering and Computational Science Mathematics and Systems Analysis Media Technology Applied Physics Information and Computer Science Computer Science and Engineering Industrial Engineering and Management

Arts, Design and Architecture (ARTS); School of Business (BIZ); and four schools that were previously part of Helsinki School of Technology: School of Chemical Technology (CHEM), School of Electrical Engineering (ELEC), School of Engineering (ENG), and School of Science (SCI). The schools have different characteristics with respect to each other: they differ in terms of their focus areas, size, and cooperation with the industry, to mention some. Table 1 shows the different schools and their departments in order to give an overview of the academic fields in the university.

Aalto University School of Arts, Design and Architecture has a long tradition in teaching arts and active participation in Finnish cultural life as well as strong cooperation with international academic and corporate contacts (Heimonen, 2011). ARTS has a strong focus on being an international unit (One of Finland's most international schools, 2012) with long experience in multidisciplinary work, which coincides with the whole university's strategy. It has also a very differing profile from the other schools of Aalto focusing on artistic activities such as architecture, media, design, and filming. In Aalto-level thinking, artistic activities are paralleled with research and even though the process of assessing the quality of artistic activities is slightly different from that of research, the logic is similar: the quality is eventually assessed by peer reviews. Furthermore, compared to the other schools, ARTS acquires less external funding per professor than the others but it has the second most undergraduate and graduate students per professor of the six schools.

Aalto School of Business, in turn, is responsible for the business teaching in the university. The school has traditionally had strong relations with the business community and Finnish society while, naturally, many of the research projects are related to the corporate world. (Helsinki School of Economics history, 2014.) BIZ also has a high number of undergraduates and graduates per professor relative to the other schools and quite similarly to ARTS, the amount of external funding, whether it was national, international, or partner funding, is relatively low compared to the other schools. With respect to the other schools, BIZ had the highest number of Bachelor's and Master's degrees in 2013 but the second lowest amount of Doctoral degrees (Table 2), which might be an indicator of a stronger practical orientation.

Helsinki University of Technology has experienced major changes administratively since the merger of the three universities. The biggest change that faced the University of Technology

Table 2: Number of degrees in Aalto University
The number of Bachelor's, Master's and Doctoral Degrees in Aalto University in 2013 (Aalto University, 2014a).

School	Bachelor's Degrees	Master's Degrees	Doctoral Degrees
ARTS	188	264	17
BIZ	411	457	20
CHEM	135	136	25
ELEC	219	199	50
ENG	345	317	26
SCI	255	241	91
Total	**1553**	**1614**	**229**

concerns the division of previously one university into four separate Aalto University schools following the earlier faculty division. In addition, the Department of Architecture was moved under ARTS within the merger. The schools have shared the same administration in the past but have anyhow differing profiles from each other, some having more cooperation and research projects with the Finnish industry and some being more focused on pure research. For instance, ELEC, ENG, and CHEM have acquired significantly more funding from partners per professor than the other schools. There are also differences with the number of students and the number of ECTS per professor between the technical schools. Especially ELEC and SCI had a high number of Doctoral degrees in 2013 (Table 2), perhaps signaling for a stronger research orientation or larger research groups.

The structural changes following the merger into Aalto University have been major and they are still going on: the major change to be implemented in the coming years is the move of the bachelor-level teaching of the Schools of Arts, Design, and Architecture and the School of Business to the main campus in Otaniemi (Aalto University News, 2012). The changes are related to the effort to further integrate the schools and to strengthen the cooperation and interdisciplinary actions within the university. The integration is also related to the attempt to create a university-wide reward system and thereby bring the different schools closer to each other administratively as well. However, more administration has been brought in due to the structural changes, which has frustrated many professors in the university.

Since the focus of this study is on professors' rewarding in Aalto University, it is appropriate to review the profiles of the professors in the university. There are six different types of professors in Aalto: Full Professors, Associate Professors, Assistant Professors (1^{st} and 2^{nd} term), Professors of Practice (PoPs), and Aalto Distinguished Professors. Figure 4 shows the professors' tenure track and how the different positions relate to each other. It can be seen that there are two basic career steps for tenured professors at the moment: the promotion to the Associate Professor position and therefore getting tenured, and the promotion to Full Professor. Furthermore, PoPs are appointed from outside the tenure track. Table 3 presents how the professors are spread to different positions in each of the schools and in the whole university. As can be seen, Full Professors form the majority of the positions at all the other schools except ARTS, that is from 58 % to 76 % of all the professors in each school, 63 % on average. In ARTS, Professors of Practice are better represented than at the other schools, mostly because of the practical and art-oriented nature of the school.

Figure 4: Aalto Tenure Track
The Tenure Track and its steps in Aalto University in 2014 (Aalto University, 2014c).

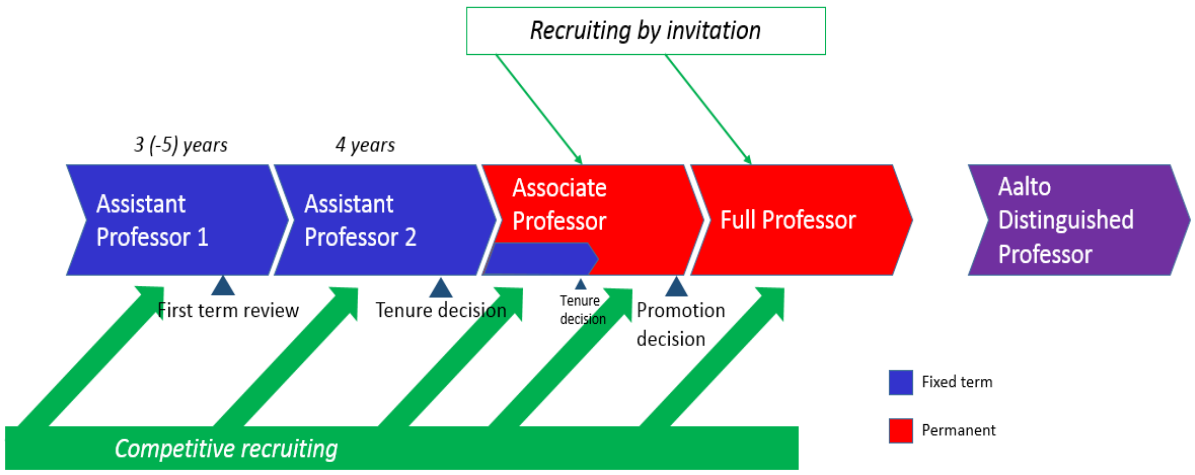


Table 3: Distribution of professors by positions in Aalto University
The distribution of professors by positions in the different schools and Aalto University in January 2014 (Aalto University, 2014).

	ARTS	BIZ	CHEM	ELEC	ENG	SCI	Total
Appointed professors in total	42	62	41	52	50	98	348
Full Professors	**18**	**36**	**31**	**33**	**38**	**63**	**219**
Associate Professors (tenured)	2	6	1	5	3	10	28
Associate Professors (fixed-term)	4	2	2	7	3	4	22
Assistant Professors (2nd term)	1	5	1	7	0	10	24
Assistant Professors (1st term)	1	13	2	0	4	7	29
Professors of Practice	16	0	4	0	2	1	23

4.2 Methods and Justification

As the research will examine a management accounting phenomenon in a specific context and organization, it will be a qualitative case research. While the theory gives a local description and explanation (Vaivio, 2008), the empirical research will reflect and be analysed in the context of the literature review. Furthermore, since the analysis will concentrate on a specific organization, the method of the study will be a case study (Aaltio-Marjosola, 1999). A case study is focused on understanding the dynamics within a single setting (Eisenhardt, 1989b), which is also the focus of this study: how is rewarding implemented in the specific case organization, Aalto University, and what would an appropriate reward system for that

organization be? A benefit of a case study method in accounting is that it reflects the nature of a management accounting phenomenon in practice (Scapens, 1990).

A case study can have an action-analytical, nomothetical, or constructive approach, for instance (Kasanen et al., 1993). In this study, the constructive approach is used as one of the objectives of the study is to design a proposal for the basis of the new reward system at Aalto University. In a constructive research in management accounting the focus is on realistic managerial issues and problems and the goal is to create an innovative solution for the problem(s). According to Kasanen et al. (1993), a successful constructive research provides a solution for a real-world problem with a theoretical connection as well as an analysis of how well it can potentially be generalized. The thesis will also have descriptive features in addition to the solution being normative (Lukka, 1991) while the current incentive system and the opinions about it are described and evaluated. However, the description serves for the purposes of the construction since the suggestion for the new model is the main outcome.

To derive the descriptions used as a basis for the new model, two main methods are used to complement each other: a survey and theme interviews. Such method triangulation has been an increasing trend in management accounting, and many researchers use quantitative methods to support and validate the findings of qualitative methods (Modell, 2005). In this research, the survey method was chosen because it was found to be the most efficient way to gather data from the target group most comprehensively. In addition, the interviews bring more insight into the existing compensation system and how it is perceived within the organization as well as opinions about what kind of a system would motivate professors the most. The interviews are executed as theme interviews, which is a type of a semi-structured interview where the themes are pre-set but the order and emphasis are dependent of each interview and context (Hirsjärvi & Hurme, 2008). The survey and the interviews are used to gather longitudinal data since the aim is to get information about the opinions about incentive systems and the theoretical issues connected to them at a given moment across the organization (Aaltio-Marjosola, 1999).

The population of the empirical research consists of tenured university professors. In this research, as is typical for case studies, the population is approached through one organization, in this case Aalto University. The sample consists of professors in all of the schools in Aalto University. It is appropriate for the empirical objectives of this thesis while the new reward system applies to Aalto professors. In addition, it is in line with the general objective of a case

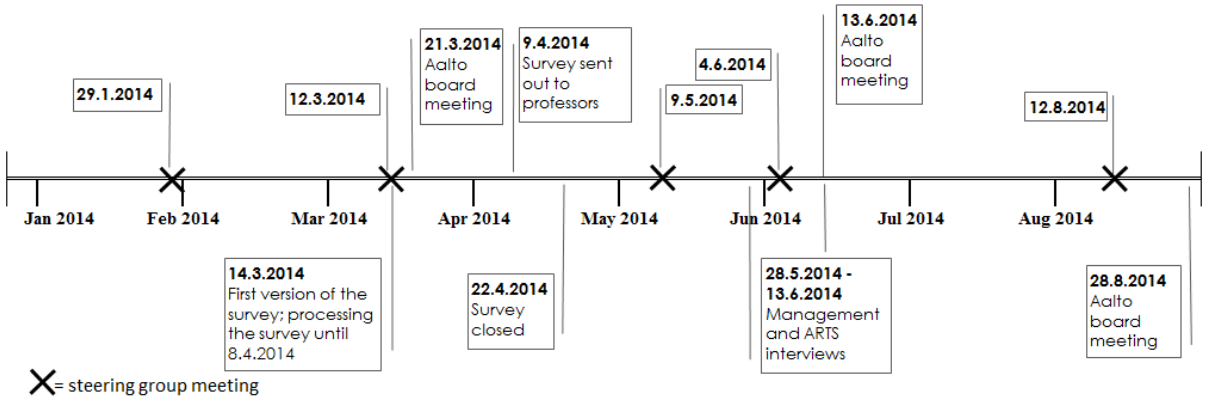
study: to understand the dynamics within a single setting (Aaltio-Marjosola, 1999). The survey was thus targeted to all the professors at Aalto University, including full professors as well as associate and assistant professors and professors of practice. As the main target group consists of Full Professors who are at the highest level of their career steps, some of the respondents did not fall into this category. However, in order to improve the reliability of the results and get a larger sample, other types of professors were included as well.

4.3 Data and data collection

The data used in the research consists mostly of a survey targeted to all professors at Aalto as well as ten theme interviews. These are the main methods used in the research and they will be described in more detail in chapters 4.3.1 and 4.3.2; however, some supplementary data was used as well in order to gain a more comprehensive image of the situation and opinions.

Since the thesis is connected to the project as explained at the beginning of Chapter 4, materials from the project team meetings were used as data in this study. The team met on regular basis during 2014, approximately once every two months and the meetings were principally a platform for brainstorming about rewarding and the incentive system and for developing the new model based on the data gathered in this thesis. The project team's meeting schedule can be seen in Figure 5. The meetings were often prior to Aalto board meetings to which material of the progress was delivered. A discussion memo was written based on each meeting and the memos were used as a supportive material for the empirical research. Additionally, other university-specific material such as email discussions about incentive systems prior to the project and descriptive materials regarding rewarding at Aalto University were utilized. These materials will be used to get an overview of the current and former incentive systems, opinions about them, and an overview of overall rewarding.

Figure 5: Progress of the empirical data collection
The timeline of the empirical data collection process.



Other data that was used besides the materials from the meetings and the memos consists mainly of internal HR data regarding the schools, some email discussions between professors prior to the project regarding the current incentive system, and other HR material about the current and the former incentive systems.

4.3.1 Survey

As said, the main sources of the data used in the empirical research consist of a survey and theme interviews. The survey (see Appendix 1) was created in cooperation with the project team members and it was made both with the empirical need in mind and based on previous literature as well as the strategy of Aalto University. It consisted of questions regarding potential rewarding elements and criteria used for evaluation in order to find out what the professors find important and functional in rewarding. Furthermore, the behavioral agency theory served as a basis for the motivational and work-related questions.

The survey was divided into four parts: the first page consisted of questions regarding the professors' perceptions about rewarding and incentive systems in general and more specifically; the second page included questions about one's motivation and the use of working time; the third page had a free word question giving the respondent the chance to express their opinion about incentive systems and the project; and finally the last page consisted of 9 demographic questions. The survey had 19 questions in total, and the aim was to keep it in a reasonable length so that the length would not be a reason to stop answering the questionnaire. It was also found important to define some of the central concepts on the first page so that the questions would be understood correctly and that the answers would give right and useful information about the professors' opinions. Furthermore, it was found especially important that the differences amongst all the schools, for instance the inclusion of the artistic productions for ARTS or the different histories with rewarding, were taken into account.

The process of creating the survey started on the 12th of March in 2014 when the project team decided that it was to be the main data collection method (see Figure 5 for the data collection timeline). The survey was processed for approximately four weeks, and during that time it was sent to the rest of the steering group for comments three times: on March 19, March 27, and April 3. In addition, it was sent to an ARTS professor outside the steering group on April

Table 4: Responses for the survey
The number of responses and response rates for the survey in April 2014.

School	N	All	response rate
ALL	**124**	**407**	**30.5 %**
ARTS	7	62	11.3 %
BIZ	25	84	29.8 %
CHEM	19	45	42.2 %
ELEC	15	52	28.8 %
ENG	17	60	28.3 %
SCI	41	104	39.4 %

7 for ARTS-specific comments. Based on the comments, the survey was significantly modified; several questions were added and some were made clearer and more unambiguous. It was eventually sent out to the Aalto professors' mailing list by the head of the steering group on April 9 and was open for answers until April 22. A reminder was sent on April 17, five days before the survey was closed. Before the reminder, 87 people had answered the survey and after it we received 37 more responses.

The professors' mailing list included 407 professors on the day the mail was sent. As can be seen in Table 4, 124 professors in total answered within the given time frame, which leads to a quite high overall response rate, 30.5 %. There was, anyhow, variation between different schools, ARTS professors being the least and CHEM professors the most eager to answer. The low response rate among ARTS leads to more unreliable and less generalizable information about ARTS preferences. Because of this, two additional interviews were done to support the ARTS perceptions. With the other schools, the number of observations is enough to draw conclusions about the school's perceptions.

4.3.2 Interviews

Besides the survey, ten interviews from half an hour to an hour were conducted between May 28 and June 16. Eight of the interviewees represented the management, including e.g. the President and the Provost of Aalto and the Deans of each of the schools. The interviews were conducted in order to understand the management's objectives for the reward system. It is valuable to understand the point of view of the university management so that the motives and the goals of rewarding are taken into consideration when planning the new model.

In addition, two additive interviews with ARTS professors were conducted on June 3 and 13 in order to get a more comprehensive picture of ARTS professors' opinions. The steering group decided to conduct the ARTS professors' interviews as complementary to the survey because of the low response rate amongst the school. This way also the ARTS point of view is better considered. Furthermore, the other one of the interviewees was from the Department of Architecture which was moved from the technical school to ARTS. This leads to an interesting situation where he used to have an incentive system but after the transfer no more. The structure of the interviews and the details about them are shown in Appendix 2 and Appendix 3 and the schedule of the interviews in Appendix 4.

All of the interviews were recorded and transcribed. The management interviews were conducted so that the head of the steering group was the main interviewer and I was a co-interviewer taking notes during three of the interviews. Furthermore, I transcribed two and an outside person six the interviews and all of the transcriptions and the recorded interviews were used as data for this thesis. The interviews of the ARTS professors were conducted mainly by me, the head of the steering group being present in one of the interviews and the transcriptions were done by the same outside person as the management interviews.

The objective of the ARTS professors' interview was to gain information similar to that of gained from the survey: to understand the opinions and the positions ARTS professors have towards rewarding and incentives as well as what they expect from a reward system. Furthermore, the representatives of the management were interviewed in order to find out what they think about rewarding, consider the organizational objectives for rewarding, and evaluate the possible conflict of interests between the management and the professors and whether there are interests to be aligned.

5 EMPIRICAL RESEARCH

In the empirical part of the study, I will first describe the issues that have an influence on rewarding in Aalto University: the university's strategy and other institutions. Furthermore, I will assess the individual schools' former reward systems and the current reward system in Aalto. In addition, I will look over the professors' opinions about the different reward systems and expectations regarding motivation and performance-based rewarding in general based on the responses to the survey, the supplementary ARTS interviews, and the other data. The primary focus of the study is on the professors and their motivation but in order to understand the objectives of rewarding, I will briefly go through the management's opinions in subchapter 5.4.2. This section provides an overview of the findings, followed by the results in the form of a suggestion for a new reward system and an analysis in the next chapter.

5.1 Background of performance measurement in Aalto University

As many scholars have pointed out, if performance-based rewarding is used, linking it to the organizational strategy is essential in order to communicate what kind of performance is desirable. That is why the starting point for designing a new reward system should be the examination of the organization's **strategy.** Aalto University's strategy is largely based on the Universities Act (558/2009) and the statements of the Ministry of Education and Culture. It is also determined in the four-year contract between the Ministry and the university which is similarly based on the Universities Act. Furthermore, Aalto has an internal funding model that follows the strategy. Aalto has four core strategy areas which follow directly the key objectives stated in the law. Each core strategy is further focused for Aalto and has defined key performance indicators (KPIs) (Table 5).

Table 5: Aalto University's strategy
The strategic areas and KPI's of Aalto University (Aalto University, 2014e).

Research excellence	Pioneer in education	Trend-setting art	Societal impact
Original, impactful, and interdisciplinary	Students in focus, a new learning culture and approaches	Art, architecture and design as key drivers for improving living environments	Adding value through entrepreneurship, business liaison and societal interactions
• Publication quality • ERC grants • Competitive funding • Awards & recognition • Quality and quantity of interdisciplinary projects • Tenured professors	• Teaching quality • Student performance • Alumni & employer satisfaction • Multidisciplinary graduates	• International visibility • Quantity and Quality of artistic productions • Grants & awards	• International visibility • Partners' perception of Aalto • Number of spin-offs • Number of partners • Funding from partners

The **contract** between Minedu and Aalto determines the university-specific goals for the years 2013-2016 in more detail. The Aalto-specific part of the contract is divided into three parts concerning the mission, profile, and focus areas; the central development areas; and the funding of the university. According to the contract, Aalto University profiles itself as a novel development environment for education, research, and innovation. It should aim at being an international research university combining science, technology, art, and business in an innovative way. (Contract Aalto University, 2012.) The basic funding is determined based on the regulations and the focus areas defined in the contract. The strategy indicators listed in the contract are as follows (ibid.):

1) Publications (crown indicator)
2) Top researchers and units
3) Progress of the students' studies
4) International artistic productions and publications
5) Share of foreign professors and post docs
6) Total amount of funding from other than academic partners

These, as many of the strategy KPIs, are university-wide and difficult to control by an individual professor. However, they are connected to the basic funding level and form an important incentive for the university management. Consequently, they should be reflected in the expectations towards individual or group performance and thus it would be sensible that these indicators, as well as the KPIs, affect the communicated expectations at least indirectly. All in all, internationalization, innovation, and research are highly emphasized in the contract.

In addition to the contract with Minedu, Aalto University also has its own, internal **funding model** which, in turn, is linked to that of the Ministry of Education and Culture. In addition to providing incentives towards the strategic goals of the university, the model also aims at encouraging cost efficiency (Aalto University Funding Model, 2012). Cost efficiency is one of the trends in New Public Management, and the funding model is one example of a practice where the use of NPM is clearly visible. It emphasizes the autonomy of each school (ibid.), which is reflected in the current reward system as well. In line with the idea of autonomy as well as NPM, the new model is a full-cost model, meaning that the costs of joint services will be charged from each school based on the allocation of resources (ibid.). Consequently, it transfers the budgeting responsibility to the school levels even more comprehensively. This

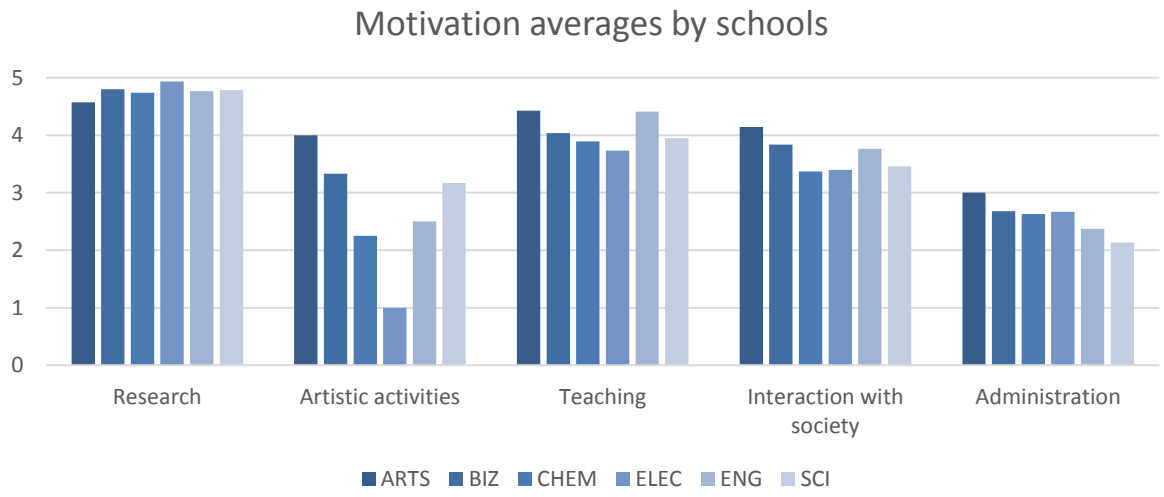
follows the idea of NPM even more, being a very clear practice adopted from the private sector.

5.2 Professors' motivation

From the motivation point of view, the professors in Aalto University seem to be extremely motivated to perform in the strategic core areas of their work: research, teaching, and interaction with society as well as artistic activities in ARTS[8]. Chart 1 shows the motivation averages by schools in the scale of 1-5 and overall, the motivation averages were 4.78 for research, 4.00 for artistic activities (in ARTS since it is not relevant for the others), 4.03 for teaching, and 3.60 for interaction with society.

When asked about their motivation drivers, the professors identified things that derive from intrinsic motivation especially what comes to research, such as curiosity (BIZ, ELEC, ENG, and SCI professors), constant drive to do research (SCI professor), and science itself (CHEM and SCI professors). There were some professors that were extrinsically driven by the Tenure Track (CHEM professor) and gaining status in the community (BIZ professor), for instance, but they were in the minority among the respondents. Also teaching was more driven by intrinsic factors rather than external rewards. In that sense, the starting point for the professors' motivation is seems excellent and intrinsic motivation plays an important role in the overall motivation, which would indicate that it could be difficult to have a major positive

Chart 1: Professors' motivation
Motivation averages for different areas of work by schools, scale 1-5.



[8] In other schools than ARTS, artistic activities are not a relevant part of the professors' work

impact on the overall motivation by external rewards. However, they can have a significant crowding-out effect if planned inadequately.

What comes to the professors' motivation to interact with society, it is not as high as that of to do research or teach. However, the average is above three in every school so there would not seem to be major motivation problems in that respect either. Interestingly, older professors are more motivated to interact with society than younger professors, and the difference is statistically significant according to the Chi Square test (2-sided Asymp. Sig. 0.094). This could be because of the gained knowledge and status during the career that give credibility for the interaction. In addition, Full Professors' motivation average for interaction was 3.73 which was higher than the overall average. Overall, a motivation average well above neutral (3) for a component of work that is not defined as primary in the Universities Act seems quite robust. The motivation drivers for interaction with society were not as strongly intrinsic as for research and teaching but derived from an external goal more often than purely from intrinsic motivation. This might indicate that there could be more room for properly designed external rewards what comes to interaction.

The survey indicated clearly that the professors are not motivated to do administrative tasks while the average motivation throughout the university was 2.48, well below neutral. The motivation drivers were far from intrinsic, which implies that the motivation could be increased by external rewards. However, it has to be considered whether there is a need to reward for administration at all since it is not part of the core strategy of the university and does not belong to the essence of professors' work. Even though administration has to be done, it might be even a positive thing that there is low motivation to do it: that way the professors focus more on the strategically important tasks, research and teaching as well as interaction with society, than administration. Therefore, it does not seem necessary to introduce new forms of rewarding for administration while it does not advance the strategic goals of the university as efficiently as the core functions.

All in all, the survey indicates that the professors in Aalto are motivated to conduct the tasks that are in the essence of the university's strategy in the first place and moreover, the motivation seems to be strongly intrinsically driven. On that account, there does not seem to be much room for increasing the overall motivation with extrinsic rewards. The rewards should concentrate not on consuming and crowding out intrinsic motivation but rather supporting it.

5.3 Former and current reward systems

The practices of rewarding professors for their performance have varied significantly among the three universities that form Aalto University. The traditions of performance-based rewarding were the strongest in Helsinki School of Technology (TKK) with its rather straightforward incentive system while in University of Art and Design Helsinki (Taideteollinen korkeakoulu, TaiK) performance-based rewards did not play a central role at all. In Helsinki School of Economics an official incentive system did not exist but professors did get rewarded for their performance to some extent by the HSE Foundation. At the time of this study, professors were rewarded for their performance in the form of a mechanical incentive system in the entire Aalto University except for ARTS due to the strong resistance it faced there. In this thesis, the system used in Aalto at the time of the study will be called the 'current system' in order to distinguish it from the other systems. The reward systems in the former universities and in Aalto are introduced shortly in the following in order to provide a better understanding of the backgrounds of the current situation and the need for developing the rewarding at Aalto. In addition, I will recap the opinions about the different systems that arose from the survey and the interviews.

5.3.1 Former reward systems

TKK system

The former Helsinki School of Technology has the longest history of the three former schools with performance-based incentive systems. It is the predecessor of the system that is currently in use in Aalto and was in use in TKK from the 1990s until the merger. The basic idea is that the bonus could amount to 2-20 % of the professor's annual salary and was to be applied and granted by the President of the university. There were practically four criteria: the first, the volume of external funding raised during the past three years, was the triggering factor and without fulfilling the required level, the bonus was not possible to obtain. After meeting the external funding criterion, two out of the following three criteria were to be fulfilled: the required amount of master's degrees, doctoral degrees, and scientific publications. Additionally, it was characteristic for the model that the professor who received a bonus was able to divide it between those people who contributed to their results and that the bonuses were eventually paid from departments' budgets and therefore depended on whether the department's financial result was positive or not. (Aalto University, 2014d.)

Table 6: Satisfaction, old TKK system
The satisfaction rates with the TKK system, averages by technical schools, scale 1-5.

	Mean	N
CHEM	4.00	5
ELEC	4.00	7
ENG	4.00	4
SCI	3.23	22
Total	**3.55**	**38**

Based on the survey responses, the TKK model was rather liked. The satisfaction average amongst the former TKK professors was 3.55, and Table 6 shows that in all the other technical schools except SCI the average was 4.00 which is quite high. One of the strongest reasons why the incentive system was so liked was that it was perceived simple, clear, and transparent. For instance, professors pointed out in the survey that the "old TKK system was much more transparent [than the current system]" (CHEM and ELEC professors) and that the "TKK system was simple: a few quality criteria + you pay the bonus from the money you bring in yourself" (ELEC professor).

There was also criticism towards the old TKK system. The fact that the bonuses were paid from the departments' funds was seen inequitable and increasing harmful competition, as one ELEC professor pointed out: "If the bonus is paid from the department's basic funding, it only makes professors compete with each other instead of cooperating". Compared to the previous comment, there were differences with how professors perceived the source of the bonus: even though it was paid from the department's money, the central role that the external funding played in the criteria had the effect that some might have seen it as earmarked to them and therefore the bonus more earned. The strong emphasis on external funding was also considered a negative issue, although many saw it positively. For instance, a SCI professor compared the bonus system to a 'bingo' system for allowing the bonus only if all the requirements were met, i.e. one had to perform well in all the areas. It was also stated that the old system was "clear in terms of its rules and one could be happy for the reward received even though it did not motivate towards the future" (SCI professor). All in all, the TKK system does not seem to have raised strong negative emotions even though some defects were identified. On the contrary, the top performing professors who received the bonus regularly perceived it as part of their fixed salary and counted it in their annual income automatically.

HSE system

In Helsinki School of Economics, there was no official incentive or bonus system before the implementation of the current Aalto system. However, professors received a significant project management fee if they acquired a certain amount of external funding. This is comparable to the old TKK system but it does not acknowledge any output criteria in addition to the amount of acquired funding; hence, it cannot be considered as a pure performance-based bonus system. In addition, the HSE Foundation granted, and still grants, awards and recognition grants for research and teaching, among others, in HSE and nowadays Aalto University School of Business twice a year (HSE Foundation, 2014). Examples of these are the Teacher of the Year, the Researcher of the Year, and the Doctor of the Year. As can be seen, recognition has been given to other staff as well, not only professors.

It seems that professors were also quite satisfied with the old HSE system, with a satisfaction average of 3.44 (N=9). However, the small number of responses in this particular question decreases the reliability of any conclusions that could be drawn from the survey. The HSE system got positive feedback for rewarding for good quality publications, which was said to have been "aligned with school's strategy" (BIZ professor). Furthermore, another BIZ professor pointed out in one of the email conversations that in the old [project management fee] system it was possible to get a bonus that was significantly bigger than in the current system by, for instance, bringing in a large amount of external funding instead of having to be consistently good in all the areas.

TaiK system

In University of Art and Design Helsinki, there has not been a history with performance-based bonus systems. It is also difficult to draw any conclusions about the satisfaction with rewarding in TaiK based on the four responses in the survey. The four responses were divided equally between the options 1-4 giving an average of 2.5, so there was not much consistency among the responses. One reason for the scattered opinions might be the fact that a clear reward system did not exist in TaiK and therefore it might have been difficult to evaluate the satisfaction levels.

5.3.2 Current reward system at Aalto University

Since Aalto University is a relatively new university, the reward system has been introduced recently as well. In the current reward system, professors' performance is taken into account in an incentive system that covers five schools out of the existing six, including BIZ, CHEM,

ELEC, ENG, and SCI; ARTS being outside the incentive program. The current system has been in use since 2012 and was approved until 2014, which is one reason why the project of building a new system was initiated. One reason given for the current system is that for legislative reasons, the existing benefits could not be discontinued at once, referring to the bonus system that existed in TKK. However, it was also launched at BIZ which did not have an incentive system before while ARTS negotiated not to take the incentive program into use. (Top manager A at Aalto level.)

The model is based on the one used in the former TKK, the only school that had an actual bonus system before the merger. It has similar elements and structure than the old system, having the same components but a considerably larger number of criteria. The system reflects the central KPI areas of the funding model: educational and research excellence and societal impact. In addition, the model is designed to be in line with the long-term strategy of the university. In addition to the individual level, the total amount of the incentive is also dependent on the university, the school, and the department level performances.

As can be seen in Table 7 showing the simplified structure of the current incentive system, the final amount of the incentive has several variable levels with different weights. In addition, some of the individual level indicators have several measures, and the different schools can modify the measures and their importance in accordance with their preferences. The number of the different indicator levels and measures leads to a situation where determining the final amount of compensation requires multiple calculations, the process ends up being complicated, and the transparency of the final result suffers due to all the variables. In addition, the transparency suffered because no feedback about the measures was provided for the professors after the fact.

Table 7: Current incentive system in Aalto University
The current Aalto incentive system: the performance levels, weights, and indicators (Stelwagen, 2013).

Level	Weight	Indicator
AALTO	10 %	University level outcome - Good general progress
SCHOOL	20 %	School level outcome - Good general progress towards targets
DEPARTMENT	30 %	Department level outcome
INDIVIDUAL	40 %	- Publications - Competitive funding - Supervising thesis work (B. Sc., M.Sc., Ph.D.) - Teaching - Academic/societal activity

As can be seen in Chart 2, professors are not satisfied with the current system at all. All of the schools have an average below three and the satisfaction in ARTS, ELEC, and SCI was even two or below, which indicates severe dissatisfaction with the system (total average 2.12). Chart 3, in turn, indicates that even though those professors who have received a bonus within the current incentive system are more satisfied with the system (average 2.72) than those who have not (2.00), their satisfaction is still quite low, below three. There are barely any satisfied professors who have not received any bonus but also only four out of 18 professors who received a bonus are satisfied or very satisfied with the system. Only by looking at the satisfaction numbers, it can be clearly seen why there is also a practical need to create a new reward system throughout the university.

The professors seem to be rather unanimous with why the current system is not very successful based on the comments in the survey as well as the email conversations from before. The dissatisfaction arises partly from the complexity and opaqueness of the system, a result of the complex calculation model. For instance, ten professors mentioned in their open answers that the current system is too complicated or that the metrics are not very successful. It was also stated several times that at least when used for the first time, the criteria was not known in advance, which lead to a situation where "one could not impact on own performance since the measurement factors were not known" (SCI professor) and "it did not have any chance of affecting my activities" (SCI professor).

Chart 2: Satisfaction, current Aalto system

The satisfaction rates with the current Aalto system, averages by schools, scale 1-5.

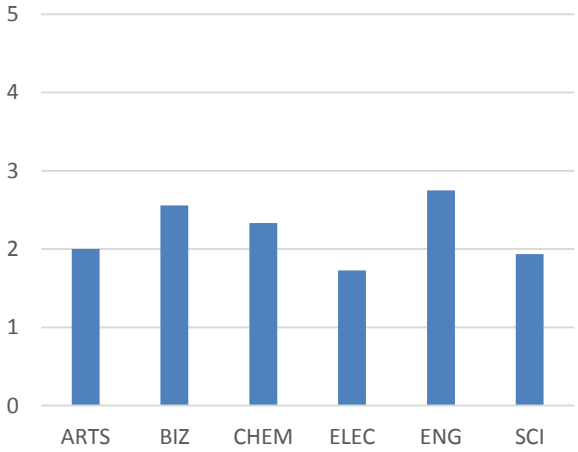
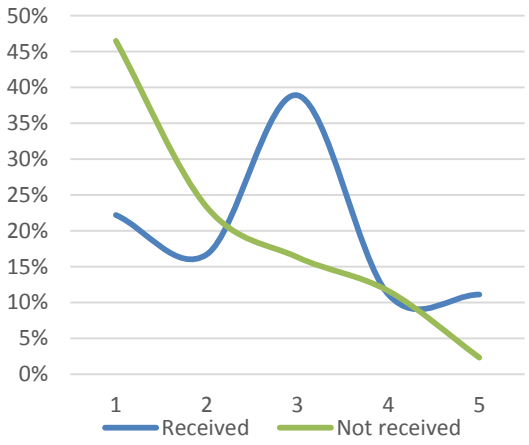


Chart 3: Satisfaction frequencies, current Aalto system

The satisfaction frequencies in % of those received and not received a bonus, scale 1-5.



Related to the issue that the criteria were not known beforehand, communicating the incentive system received quite a lot of critique as well. It was said that "if a bonus system has been in existence it is a disgrace that it would be kept secret" (ARTS professor). While it is not surprising that it has not been communicated since there has not been a bonus system in ARTS, the statement however indicates that nothing had been communicated at all. A BIZ professor stated that "I do not have any information on any bonus systems though I've heard there are some", implying that information was not provided through official channels in schools where the system was in use either, at least not very effectively anyhow. This and the complexity of the system lead to a situation where both the steering and motivating effects were lost while the professors became confused about what was expected from them and can hardly be expected to act according to the criteria.

Besides the communicational issues, the choice of the measures and their emphasis generated a lot of criticism. Even though some professors said that the current system is good with its wide scope and exact measures, the majority was of the opinion that the system should not require excelling on all performance aspects. For instance, a CHEM professor pointed out that "it is impossible to fulfill all categories required for getting a bonus or reward, so remember that one size does not fit all". There was frustration among professors that they should have focused on everything instead of being recognized for being a top performer in one field, whether it was research, teaching, or having an influence on Aalto community.

In addition to fulfilling all the criteria at high levels, the difficulty of measuring all the dimensions of professors' work is visible in the following comments:

> *I think that overall, there's too much focus on metrics and analytics at Aalto. -- The problem with metrics and gamification is that one tends to get what one measures and scores, and oftentimes excessively so. Designing a perfect scoring system is a difficult research problem of its own.* (SCI professor)
>
> *The current bonus system is a mechanical calculation of tasks performed and as such it is more suitable for lined of work where the quantity rather than quality of performance matters.* (BIZ professor)
>
> *All bonus systems tie bonuses to some measurable outcomes assumed to be solely due to the individual's actions. One implication of this is that actions*

> *which are not measurable or are measured with large imprecision and will not be taken.* (BIZ professor)

Furthermore, another criticism towards the metrics concerned the standardization elements. It was perceived unjust that elements that individual professors cannot influence were included in the model, these being the Aalto, school, and department level performance. This, in some cases, resulted in some top performing professors not receiving a bonus or receiving only a very modest amount because the department was performing lower than expected. As this was perceived inequitable, it had a negative effect on the professor's motivation and satisfaction.

An explanation for some of the dissatisfaction with the current Aalto system among professors in the technical schools is the fact that in most cases, the change from the bonus received from the TKK system to the amount received in the new system was too drastic, and specifically to the negative direction. A SCI professor points out the following:

> *I am deeply disappointed with the recent drastic changes in the bonus system. After receiving the full bonus every year in the old TKK bonus system, I did not get any bonus at all in the new Aalto system last year. The value of the bonus that I have previously received was annually 20 % of my salary!*

This has not so much to do with the content of the current system in itself but the outcome relative to the previous system. However, this is one of the cases where a professor was including the annual bonus in the overall yearly salary in their mind and as a consequence of the new incentive system, the annual total compensation dropped significantly even though the professor's performance most likely did not decrease. Almost half of the professors that had received a bonus in TKK did not receive a bonus in the current system (13 out of 27 from those who responded both sections) and for most professors that received a bonus in both systems the amount of the bonus more than halved. There was only one professor that maintained the level of the bonus and one that received a bonus in the Aalto system but not the TKK system; in the latter case, not gaining the TKK bonus was most likely explained by the short career as a professor. Some professors also expressed that the bonus received from the system was rather insignificant. As an ARTS professor put it: "Pay enough or don't pay at all". Therefore, if the amount of the incentive is very minor compared to the trouble of determining the amount with a complex and bureaucratic model, there is a danger that the cost of the system eventually amounts to more than its benefits are.

Besides its structure, one of the dominating features of the current incentive system at Aalto is the fact that the payout determined by the model is, in practice, a redistribution of each department's money. In other words, the reward does not increase the amount of resources within a department but instead decreases the overall resources available for the common use within the department, which is similar to the old TKK system. There might be some consequences to this regarding the overall department motivation since those professors and other faculty members who do not get a bonus might feel the redistribution of funds inequitable.

> *[E]xtremely damaging in Aalto 2012/2013 sy[s]tem was that the bonus for professors would have been taken from the lab's/department's basic funding ... that means from other persons' pockets and thereby decreasing rather than increasing the possibilities to carry out successful research* (SCI professor)

What comes to ARTS professors, it is difficult to find a clear trend based on both the survey and the interviews whether they are satisfied with the current rewarding in Aalto or not. When asking about the satisfaction with the current Aalto system among ARTS professors in the survey, the average was 2.00 among the respondents (N=5). Even though the average is low, the small sample does not allow drawing any conclusions. In addition, the answers can be biased due to the low response rate in ARTS while it might be possible that only those who are very distracted by the current situation answered the survey whereas those who are not unhappy or bothered by it did not. One way or another, the survey does not tell much about the current opinions. Also the interviewees did not clearly state whether they were satisfied or dissatisfied with the current situation, however they did see potential for improving the overall rewarding.

However, the Department of Architecture is an exceptional unit within the entire Aalto University since it has been part of TKK before the merger but was transferred to ARTS in 2012. Hence, the professors who have been in the department before 2012 have, on one hand, had a bonus system before the merger but then after being transferred as part of ARTS they have not had any incentive system at all. The other one of the interviewed ARTS professors was from the Department of Architecture and has thus experienced both cases: having and not having a bonus system. He pointed out some shortcomings of the TKK system – such as the built-in requirement of excelling in all the measured areas of work and the fact that those tasks that were not measured were also not rewarded – but recognized the need of being

acknowledged for one's achievements. At the moment of the interview, he did not seem dissatisfied even though there was no incentive system in ARTS. Anyhow, he mentioned that the dean gave recognitions for various reasons such as research or other special accomplishments and considered them good.

To sum up the opinions about the current incentive system, there were not many positive comments from the professors. The biggest criticism concentrated on the lack of transparency, the complexity of the system, the fact that the model does not recognize top performers in one field only, and the Aalto, school, and department level elements that are not under the control of an individual professor. Instead of motivating or steering them, the current incentive system seemed to frustrate the professors and confuse them with the number of measures. Even though some benefits could be achieved with an incentive system, it looks like the current system did not reach the positive effects. It seems that when the model was created, the managerial practices were pronounced too literally and it was not integrated into the university and professional contexts. Therefore more consideration on how to take the academic context into account is in place when designing the new reward system.

5.4 Expectations towards rewarding

5.4.1 Professors' point of view

As the previous chapter shows, the current incentive system at Aalto did not reach the benefits that are intended with it. Hence, there seems to be a clear need to develop a new system of rewarding. The first step of defining a new reward system is to decide whether to include a performance-based element in it or not. Based on the survey and the interviews, it is quite clear that most of the professors do want to be rewarded based on their performance. However, it is even clearer that a system resembling the current incentive system would not be preferable or very motivating, and it is not wanted by the professors or the management. Even though over 70 % of all the professors stated in the survey that a bonus system of some kind is needed (see Chart 4), in the following question about compensation elements the average importance of short-term bonuses was as low as 1.88 and even 40 % of the respondents answered that they should not be included in the overall reward system (Chart 5). ELEC was the only school where less than half of the professors said that a bonus system is needed, and surprisingly in ARTS, six out of seven of the respondents were in favor of a bonus system.

Chart 4: Need for a bonus system
Whether the professors perceive a bonus system needed or not by schools.

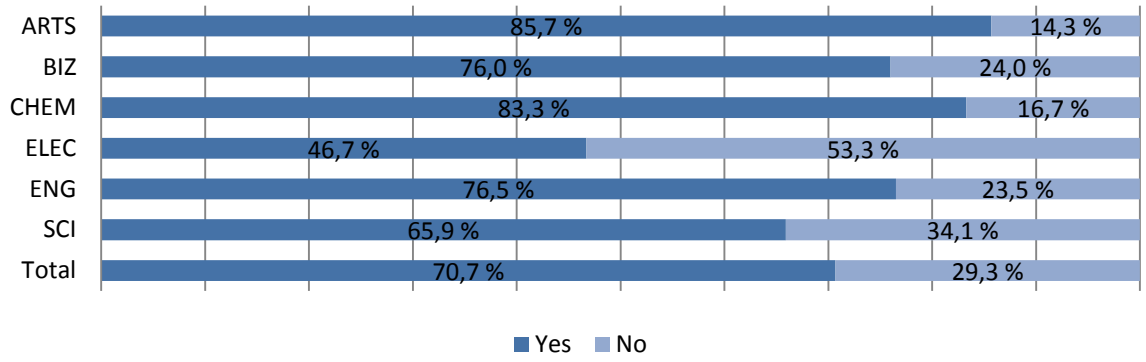
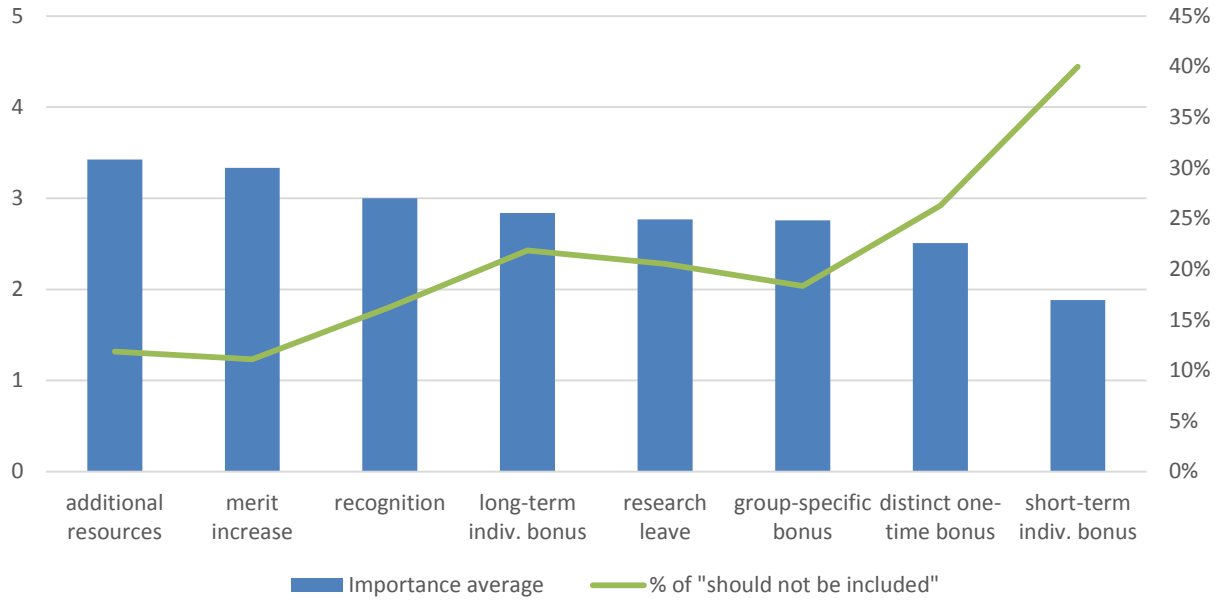


Chart 5: Compensation elements
How important professors find different compensation elements and whether they think they should be included in the overall reward system or not, importance in scale 1-5.



These two findings seem to be in conflict with each other but when looking at the overall picture, the contradiction can be explained. For instance, a bonus system can be understood in different ways. If we look at Chart 5 and the open answers for question 3 in the survey (see Appendix 1 for the survey questions), it looks like the professors have interpreted the concept widely. Giving a reward for the whole research group stands out in the answers, for example, and long-term bonus is not nearly as disliked as short-term bonus. Also connecting career issues with rewarding – for instance more career steps after Full Professor level or a merit increase system – gains support, merit increase reaching an average of 3.33 in importance, including the 'should not be included' answers with a value of 0. Based on the data, it appears that the professors consider a bonus as a system of rewarding for performance in this context and they are in favor of that linkage existing. However, a bonus in its traditional meaning (an

annual reward based on metrics measuring short-term performance) faces resistance among professors.

What comes to the characteristics that professors find important for a reward system based on the survey, over 10 % of the survey respondents commented in the open answers that the new system should be either simple, clear, transparent, or fair, or several of them. In addition, several respondents emphasized that the system should not require being good at all the performance areas but recognize success in only one or few of the areas as well – this referring to performance-based pay. It was also clear that the professors do not value "some artificial Aalto/school/department level performance in the system" (ELEC professor). The comment continued that "when I work hard, I don't want to be put down by others who didn't do their job as well. I want to be the sole responsible for any reward I might get", which is consistent with the criticism the current Aalto system received that performance-based reward systems have a positive effect on performance when the targets are under the control of the employee.

If performance is to be rewarded, the professors at Aalto distinguishably prefer a **merit increase** system over a bonus system. The average is above 3 and only 11 % marked that it should not be included in the overall reward system. Furthermore, many of the professors hoped that the salaries reflected performance consistently with merit increase or that the salaries were individually negotiated. For instance, it was said that "instead of bonuses, a system where all wages are individually negotiated between the Dean and the Professor (with the approval of the HoD [Head of Department]) is needed" (BIZ professor) and that "the professors' salaries should be defined based on performance, and the performance criteria should be clear" (SCI professor). However, since some of the professors regard the yearly bonus as an important compensation for their extra work, they stated that if the incentive system was to be abandoned, the extra work they do should be compensated by a salary raise. Additionally, when performance is reflected in the salary, it is easier to consider it holistically and thus recognize specialization, which the professors considered important as well.

Other compensation elements that got an average 3 or above from the professors were additional resources (3.42; 11.9 % 'should not be included' answers) and recognition (3.00; 16.2 %). Other elements got lower averages than 3 and over a fifth of the respondents were of the opinion that they should not be included in overall rewarding at all (see Chart 5 for further data); therefore, it is reasonable to abandon these elements from the analysis. As to **additional**

resources, they were seen as a good way of rewarding a whole research group for their achievements rather than directing an individual bonus for a professor. For instance, a SCI professor noted the following:

> *If money need[s] to be given out as bonuses, then this could be in the form of resources to research group - that way Aalto would put resources to places that give the best performance (in indicators Aalto thinks as relevant).*

This was explicitly stated in nine of the comments, and the reasons for this emerge from inequity aversion[9] and the appreciation of academic freedom while with additional resources, successful teams will gain more flexibility and autonomy over their research and work. This would also not feel like an inequitable distribution of a department's money since it would concern a larger group of people who have contributed to the results and the reward would further benefit the university while it would be used to advance research. Furthermore, time for research can be understood as a resource as well, which supports the idea of increasing academic freedom. As an ARTS professor said, many seem to be of the opinion that "the key is to provide resources for liberating time for research & resources for research group".

Recognition, on the other hand, divided opinions between the schools[10]. In ENG and SCI the averages were above 3 (3.75 and 3.19 respectively) whereas in the other schools, the averages remained under 3. However, many professors did express that in their opinion, other recognition is more important than bonuses. Some, in turn, stated that bonuses are also a good way to show recognition for good performance. One way or another, the majority seems to find it important that when they succeed and achieve high performance, it is important that the success is acknowledged by their community. The acknowledgements from both the school level as well as from the Aalto level were seen valuable.

Performance criteria

In addition to how they should be rewarded, it was also asked from the professors what they see as relevant criteria to base the rewarding on. Surprisingly or not, the criteria look somewhat similar to those of the current system. Publication quality was the foremost preferred criteria, reaching almost the average of 4 in importance. Other criteria with an average above 3 were publication activity, competitive funding, thesis supervision, teaching

[9] In this case, the feeling of equitability arises from the idea that instead of one person only getting a bonus for the whole group's success, everybody who contributed to it will benefit as well

[10] The differences were not, however, statistically significant

quality, and research group performance (see Table 8 for importance averages). All the other criteria that got high averages were already included in both the old TKK system and the current Aalto system except teaching quality and research group performance. The latter has not been included in the former nor the current system even though the professors strongly advocated for including it. However, deducing from the comments and the dislike of including any other organizational level performance in the criteria, Aalto professors do not want individuals to be rewarded for the research group performance. It looks like they rather want the whole research group to be rewarded for the team's performance in those schools where research is mostly done in research groups.

Table 8: Merit increase criteria

How important professors find different merit increase criteria, scale 1-5.

	Criteria	ARTS N=6	BIZ N=21-22	CHEM N=18-19	ELEC N=14	ENG N=15-17	SCI N=29-36	Total N=95-114
Research and artistic activities	**Publication quality**	**4.50**	**4.05**	**4.21**	**3.64**	**3.25**	**4.03**	**3.93**
	Publication activity	**3.17**	**3.50**	**4.21**	**3.00**	2.94	**3.34**	**3.41**
	Competitive funding	**3.33**	**3.14**	**3.74**	**3.07**	**3.07**	**3.37**	**3.31**
	International visibility	**3.33**	**3.18**	**3.00**	2.71	2.71	2.86	2.93
	External awards & recognition	**3.00**	2.77	**3.16**	2.86	1.88	2.86	2.75
	Funding from partners	2.00	2.27	**3.05**	2.21	2.13	2.74	2.51
	Interdisciplinary projects	**4.00**	1.86	2.32	1.71	2.35	1.86	2.11
	Artistic productions	**3.33**	2.00	2.08	1.58	2.07	2.07	2.07
Education	**Thesis supervision**	**4.00**	**3.00**	**3.90**	2.86	**3.12**	**3.43**	**3.34**
	Teaching quality	**4.00**	2.91	**3.21**	2.93	**3.00**	**3.83**	**3.32**
	Student feedback	**3.00**	2.59	2.74	2.36	2.53	**3.08**	2.75
	Student performance	**3.67**	2.32	2.53	2.21	2.47	2.46	2.48
	Interdisciplinary teaching	**4.33**	1.57	1.79	1.00	2.06	1.74	1.81
Societal impact	Contribution to the community/industry	**3.00**	2.82	2.84	1.86	2.35	2.89	2.66
	National societal participation	**3.50**	2.59	2.11	1.93	2.24	2.47	2.39
	Partner cooperation	**3.00**	1.83	2.00	1.36	1.75	2.63	2.08
	Spin-offs	2.00	1.50	1.58	1.50	1.35	2.80	1.92
	Media visibility	2.50	2.10	1.32	1.64	1.35	1.80	1.72
Other	**Research group performance**	**4.17**	2.46	**3.68**	2.79	**3.25**	**3.71**	**3.30**
	Administrative tasks	**3.00**	2.09	2.47	2.14	2.00	2.15	2.22
	Department performance	**3.33**	1.77	2.00	2.00	2.44	1.97	2.08
	School performance	2.50	1.46	1.58	1.29	2.00	1.50	1.60
	Aalto performance	2.17	1.41	1.32	1.14	1.44	1.20	1.34

The criteria for research seem to be quite straightforward and agreed by the professors. They are also relatively simple to measure and have been included in the bonus systems for a long time, which means that additional systems for gathering the data would not be needed to establish. In ARTS, also interdisciplinary projects and artistic productions were favored unlike in the other schools, which is explained by the artistic and principally interdisciplinary nature of the school and its projects. The emphasis between the different areas of work divide opinions: on one hand, many professors say that the focus should be on research while "top quality research will also drive teaching" and create a "genuine novelty-based opportunity for societal impact, funding, collaboration etc." (ELEC professor). On the other hand, some professors say that the emphasis has been too much on research and other fields of work should be recognized as well, such as teaching and service. As education is also one of the purposes of universities and a strategic area of Aalto, it would be logical that teaching would be given a more significant role in rewarding as well.

Another element that many professors wanted to include in the criteria was acquiring external funding. Even though it is more of an input rather than a performance output, it was motivated with the following statements, for instance:

> *It is fair to pay bonus to those who do good job based on strategic aims such as in getting funding* -- (SCI professor)

> *The old system was also fair in that sense that those who raised a lot of funding to TKK got some small share of it if they performed well.* (SCI professor)

Furthermore, it was considered fair that the professors who allocated a lot of their time in acquiring external funding get compensated for this effort because it can be extremely time-consuming and was seen to advance freedom of research in the form of increased resources. On the other hand, some professors stated that especially in the TKK system, there was too much emphasis on external funding instead of actual outputs.

When looking at the other end of the list, it is striking that besides including any organizational level performance, most professors do not want to include any criteria that rewards for administrative tasks. For instance, a SCI professor indicated that "there should be no bonus rewards for routine work such as administration, committee work --". These routine tasks are widely seen as part of the job description and therefore rewarding for doing them is considered odd. On the other hand, the motivation to do administration is overall quite low (2.48 on average, see Chart 1 on page 47 for school-specific data) so in that sense it would be

justified to include them in the criteria. This way external motivators would be established to add to the overall motivation. However, many professors feel frustrated with the amount of bureaucracy that steal time from research and teaching and would want it to be reduced to the minimum. This applies especially to routine administrative tasks and bureaucracy that does not advance the community or the strategic goals. Furthermore, the professors see the cutting of wasteful bureaucracy as increased freedom of work, which in turn would increase their overall work motivation.

Nevertheless, there are tasks that are essential for the development of the university, such as having a managerial position or sitting in committees. Most of these tasks are already compensated by paying separately for those who have these positions and do these tasks. Even though they are extremely important for the university and might be strategically crucial, there is little reasoning for double rewarding for them. On the other hand, if a professor makes an exceptional and significant effort for the university in terms of administrative positions, it could be justified to acknowledge that through other recognition. It certainly should not be a reducing factor when evaluating overall performance. For instance, one of the interviewed ARTS professors recalled that some department heads received awful evaluations because managing their position did not leave them time for research or teaching, which was not acknowledged in the evaluation process. Different trust positions can also be seen as a part of the contribution to the community which did not face so much opposition anyhow.

In short, the professors want a reward system that is simple and would not add to the administrative load that is already perceived high and frustrating. They also seem to prefer giving rewards at research group rather than individual level, and specifically giving additional resources for research groups in order to increase the freedom of research and the equitability of the system. At the individual level, short-term or one-time bonuses were not supported but neither was not rewarding for performance at all. Instead, salaries reflecting performance levels, merit increases, or additional career steps seemed appealing to professors, and they were seen as a monetary way of showing appreciation. Recognition at the university and school level was considered important, however it was emphasized that only very extraordinary and top achievements should be rewarded with awards. What comes to performance criteria, elements similar to the existing system arose but the emphasis differ. Furthermore, the strong emphasis on administration was highly criticized in the current system.

5.4.2 Management's point of view

A conspicuous finding from the interviews is that there seems to be hardly any conflicts amongst the opinions of the university and school managers as well as between the management and the professors. This is most likely affected by academic leadership. Thus, they are double-agents, so to say: they are closer to being peers to their subordinates than a usual, private-sector manager is by being able to identify themselves as professors as well. Therefore the goals of the management and the professors are similar to each other, which can be seen in the similarity of the opinions regarding rewarding as well. Naturally, there are differences between the schools depending on the culture and focus areas of the school in question.

Even though most of the interviewees agreed that a main part of professors' motivation derives from something else than extrinsic, monetary rewards, they did see that rewarding can have a role in steering and motivating their performance. In ARTS the role of monetary rewards was strongly questioned, however for instance Deans D and F did emphasize the importance of rewarding for performance. Some benefits of monetary rewarding that were named were recognition of top performance, signaling of strategy through rewarding performance that is strategically important (Dean B), and that "especially engineers are very straightforward in following outcome measures" (Dean F), which leads to a direct steering effect. The differences were indeed biggest between ARTS and the other schools, which can be explained by the differences in the nature of the fields and in the history of using or not using monetary rewards, however acknowledgement of success was seen vital also within ARTS management.

The main tool that the management identified for steering professors' actions was providing **resources** for them. It is very similar to what the professors preferred themselves. This comes back to providing the professors academic freedom: trusting that they are the right persons to decide how to use the resources in the best way and simultaneously fostering their self-efficacy. This was not, however, seen as individual rewarding but more of a group rewarding element: the resources would be given to high-performing research group according to their performance. As one of the Aalto-level managers said, resources are a much more motivating way to reward than individual bonuses. Furthermore, the same manager said that a way to steer the professors' actions has already traditionally been providing resources for projects that are important strategy-wise. Ergo, resources are seen as a better and more efficient way to both motivate and steer professors, i.e. what usually are the objectives of monetary incentives.

What comes to individual performance-based rewarding, it was seen as an important element of motivating, steering, and acknowledging professors in both the university-level management and all the other schools except ARTS, yet not the main method. Bonuses or short-term incentives, however, did not gain much support by the management either because a "bonus received from yearly performance is somehow a troublesome couple with the professor's function" (Top manager B at Aalto level), referring to the multidimensionality and long-term nature of professors' work. Dean F also stated that the multidimensional values of the university are extremely difficult to frame as a functional and easily measurable instrumentation so that the administrative load would not become excessive. Therefore, a more straightforward system of rewarding for performance that takes the different dimensions and the long-term nature into account was called for also by the management. Furthermore, again all but one Dean favored **merit increases** better than bonuses. One option to execute this was to connect merit increase with more career steps after reaching the Full Professor level in order to add goals similar to those in the existing tenure track after the tenure decision as well. In ARTS, however, the whole concept of connecting rewarding with performance was perceived strange and therefore neither bonuses nor merit increase was seen very attractive.

In addition to providing resources for research groups and supporting a merit-based salary system, the management considered **recognition** as an important element of overall rewarding, for instance in the form of awards. This was also seen as a way to create a culture that acknowledges the success of others and where celebrating for extraordinary achievements is encouraged. Especially ARTS saw the monetary element of recognition or awards as secondary, the main purpose being in making success visible and known to the community. This would be a direct way of steering the professors: rewarding for successful performance that is in accordance with Aalto's strategy and this way making it visible which kind of performance is encouraged. It is also a way of creating supportive extrinsic rewards and consequently creating a crowding-in effect.

The management interviews also covered the level of centralization on which the rewarding would be managed. There was a consensus that the structure of the reward system should be the same in all the schools; however, it was emphasized that the differences between the schools should be taken into account. This would be the easiest to do by giving the tools for each school to use but allowing different ways of using them. For instance, different aspects or criteria could vary and be given different weighs or different kinds of achievements could

be rewarded by recognition awards, depending on the current strategic needs of each school. Yet these different emphases would have frames that were defined at the university level. Especially the basic principles of the merit system should be the same as "it would feel strange if they were not" (Top manager A at Aalto level). With rewards, the differences between schools can be better taken into account and more flexibility allowed.

What the management also pointed out is that the system should allow specialization in one area of work and should not punish for being a top researcher or top teacher, for instance. Furthermore, at the moment most if not all of the tenure decisions are based on research achievements and do not take achievements in teaching or service to the university into account. It was also called for that these aspects of professors' work would be given a stronger emphasis on and specialization in them would be encouraged. It might be difficult to do that with a completely objective system that is based on exact measures. On the other hand, if a subjective element is included, especially in a merit system, there might be a danger that the increase would be granted based on the supervisor's personal preferences instead of performance. Furthermore, other problems of subjective evaluation that the managers identified are that subjective evaluation is difficult and determining who would be the one deciding about it is problematic in itself. There is also a possibility that tensions at work would increase if evaluation was mainly subjective and there were no objective criteria that could be used to motivate the decisions.

To conclude, both the professors and the management clearly preferred similar elements to be included in the overall reward system, them being merit increase or further career steps after the promotion to Full Professor for individuals; additional resources for well-performing research groups; and different recognition elements such as awards in order to mace success visible inside the schools and the university. In the following chapter, I will introduce my proposal for the new reward system based on these findings, including the structure of the system as well as some criteria on which the rewards should be based.

6 NEW REWARD SYSTEM

In Chapter 6.1 I will introduce a proposal for the new reward system. It is based on the analysis in the previous chapter as well as the suggestions of the steering group members for their own schools. Even though the data used in the thesis and the project are the same and the discussions within the project team are used as complementary data in this thesis, the model that I propose is different from that of the actual project. This is mainly because the project continued after the completion of the thesis and therefore the final model cannot be described here.

The proposal will first take a stand on the elements of which the system consists. After that, I will take a closer look at each of the elements and describe how they would be used. The suggestion is at the university level; however, I will discuss how they can be varied at the school levels and how the different preferences can be taken into account. Chapter 6.2 consists of the discussion and links the model with the theory.

6.1 New system

6.1.1 Rewarding elements

Based on the analysis in the previous chapters, the elements of the new system seem rather straightforward. Both the professors and the management are rather unanimous that, besides the fixed salary, there should be a system of merit increases. In addition, rewarding research groups for their achievements was considered extremely important, and this was suggested to be done through allocating additional resources for well-performing research groups. They can also be granted for individuals if research is mainly done individually. Finally, especially the management raised other recognition for extraordinary achievements as an important rewarding element. An important notion about the elements is that they should not be fixed but can be updated if changes in strategy or the environment require different emphasis.

Because they are supported by the majority of the organization, the proposal of the overall reward system is built around these three elements. Together they form a reward system that rewards individual professors for their long-term performance, give additional resources for either groups or individuals according to their performance and therefore increases their autonomy, and make excelling accomplishments both recognized and visible to others.

However, because the differences between the schools have been raised in different contexts[11] it is natural that some variation in rewarding between the schools is allowed. While the structure of the system is good to be the same in all the schools, the differences can be taken into account by changing the emphasis of different elements. Furthermore, it should be allowed for the schools to modify the criteria as well as include a subjective 'common sense' factor in order to achieve a holistic picture.

Merit increase

First of all, two options for linking salaries to performance emerged in the data: it was suggested either a merit increase system to be introduced or the current Tenure Track (Figure 4, page 39) to be extended so that there were further career steps after reaching the Full Professor level and therefore being tenured. For both of the options, the reasoning was that there were no formal steps after reaching the Full Professor level, and further goals could be introduced by either means. The mechanism for both of the options looks very similar: there are certain criteria to be fulfilled and when that happens, a merit-based salary increase or a promotion shall be given. The difference seems to be more in the way these steps are communicated and implemented: in the case of merit increases, the salary raises are not visible to others but if there are further career steps for Full Professors, they are visible to the whole community through the title. Furthermore, formal career steps would require more administrative efforts whereas merit increase would be lighter to implement.

Because one goal of the new system is to keep the level of administration as low as possible, merit increase is a better option than formal career steps. Furthermore, if many visible career steps are added to the current system (e.g. Full Professor 1, 2, 3, 4…), it might undermine the perceived value of these steps and therefore decrease the desired motivational effects[12]. The merit increase would be a rewarding element for the top performers so in order to keep it that way, it should be clearly distinctive from the regular salary raises that are negotiated individually under normal circumstances. This way a situation where the majority of the professors remains with low salaries while a small part reaches high salaries would be avoided and the merit increase would still keep its status as a reward for exceptional achievements.

[11] E.g. by the management, in the steering group meetings, by the professors

[12] See Formula (2) from expectancy-valence theory: M = E x V (p. 21)

When merit increase is chosen as the rewarding element that takes long-term individual performance into account, the process of giving the increase should be determined. First of all, each professor applies the increase individually in order to maintain a low level of administration. This way there would be no need to create a formal regular evaluation process that covers all the professors. Any Full Professor that performs highly could apply for the increase based on certain pre-set, indicative performance levels that cover the different core performance areas: research, education, and impact. The performance levels would be set in each school in a way that they are reached with extraordinary performance, and if the pre-set criteria are met, an increase of an agreed percentage of the current salary will be granted. The general performance criteria should be the same for all the schools in order to create integrity that the management called for but the exact measures and measure levels should be determined at the school level because the best knowledge of the work is in the schools. This way the system would be easy to communicate, clear to everyone, and a certain level of objectiveness would be included in order to keep it fair. The criteria will be discussed in more detail in Chapter 6.1.2.

The merit increases should not be revised too often because professors' merits are long-term in nature. The management was quite unanimous that a proper time frame for merit increase would be 3-5 years. However, it would feel somewhat artificial if the review was done even on three-year regular basis if in some cases there was no progress and in others the progress was much faster. Therefore, the performance levels for an increase should be set so that on average, a professor meets them in a 3-year time frame with extraordinary performance and whenever the criteria are met, the professor can apply for the increase themselves. However, the levels have to be high enough to ensure that the increase is a reward for exceptional achievements. The application process could be done in connection with the yearly development discussions so that there would not be major additions to the administrative load of the decision-makers. If the check-up shows that the criteria are met, the corresponding increase will be granted. The final decision level would be logically set to be at the school level and the increase to be decided by the Dean of the school eventually since they have the responsibility for the school's budget (Dean F).

Additional resources

The second element of overall rewarding that was supported by the majority of the respondents and the management was additional resource**s**. It was called differently in different schools and by different individuals but the basic idea behind the resources was the

same: instead of a bonus given to an individual perhaps due to performance that is affected by several other individuals, the 'bonus' should be given to a research unit instead in the form of additional resources. A research unit is often a group but in some schools it can be an individual professor as well. Resources were referred to as monetary or material components or non-monetary elements that allow more flexibility and opportunities for research, for instance hiring more people to the research group, e.g. a post doc; new equipment; or time for research, i.e. research leave or less administration taking time from research. The resources would be applied as well in order to avoid having to evaluate every research group or researcher separately.

While this would not the element that primarily rewards individuals for their long-term, holistic performance but one that rewards a unit that is creating concrete outcomes, whether it was a research group or an individual professor doing research, the time frame of granting additional resources can be shorter than that of the merit increase. The assessment of the performance of the units in question would be done by yearly assessment in each school. The units, again, are the most logical to define at the school level while the schools know their natural units. Furthermore, the Dean would assess the top performers based on reviews from the departments and grant them with relevant, additional resources. Top performers can be determined in each school based on certain criteria which will be discussed in the next chapter as well.

The allocation of resources would be done through a resource bank that each school has for this purpose; this because the Dean again has the budgetary responsibility and should therefore have the control as well. Also because taking the decision-making at the entire university level would increase undesirable bureaucracy and diminish the autonomy and academic freedom of the schools. Furthermore, the emphasis is on the word *additional*: it has to be clear that the resources are not taken from other units but are purely complementary instead. This avoids creating harmful competition and frustration among other academics. However, there could be a resource bank at Aalto level in addition to the school-specific resource banks. In this case the resources would be allocated by Aalto-level management and granted for outcomes that are significant for the university as a whole.

Recognition

As for rewarding for extraordinary, one-time achievements, a system of making them visible to the whole community was called for especially by the management but also by many of the

professors. It was acknowledged that a culture of celebrating success is missing in Finland and in Aalto, which was also visible in the professors' answers: they are not very familiar with these kinds of acknowledgements. However, the majority of the management was hoping to create such culture and to have a recognition element to create a supportive environment. In addition, by making certain outcomes and achievements visible it is possible to give signals about what kind of performance is desired.

Recognition of exceptional accomplishments is an efficient way to avoid the time-discounting problem. Recognition can be done in shorter periods of time and therefore be closer to the performance than longer-term performance-based rewarding. It can also be done at different organizational levels: for instance, it was suggested that extremely noteworthy achievements that are strategically important for the whole university and significant for the whole scientific community should be rewarded at Aalto level (ELEC professor). These rewards would be granted by the President or the Provost of Aalto. Additionally, other successes that might be significant school- or department-wise were to be rewarded at the school level where the Dean would be the one making the decisions. The former could be done on yearly basis while the latter can be done more often, e.g. twice or four times a year or even continuously, depending on the need. The recognition could include a small monetary element but the main value for the rewarded would arise from appreciation of one's work.

Since this would be an element recognizing one-time successes, the subject for rewarding could be either an individual staff member or a group that has reached an exceptional outcome. The individual can be a professor regardless of the status or other staff member such as a lecturer since a "bonus system where only professors are reward[ed] harms team spirit and is clearly unfair to other personnel groups" (SCI professor). Therefore it should not be limited to Full Professors only because in that case, over a third of the professors (see Table 3, page 39) and even more of the other personnel would be excluded and possible negative effects could arise due to inequity aversion.

The summary of the three elements of the proposed system described above can be found in Table 9, including the target of the rewarding element, the time frame, the decision levels, and the process of rewarding of each element. The criteria for the different elements are described next.

Table 9: Proposed reward system
A summary of the elements in the new reward system and their time frames and decision levels.

	Merit increase	**Resources**	**Recognition**	
Who are rewarded	Individual (Full) professor	Research group (or individual)	Individual professor (all levels) or group	Individual professor (all levels) or group
Time frame	Every 3 years	Yearly	A few times a year or continuously	Yearly or continuously
Decision level	School (Dean from Dept head's proposal)	School (Dean from Dept head's proposal)	School (Dean)	Aalto (President or Provost)

6.1.2 Rewarding criteria

Merit increase

What comes to the criteria regarding merit increase, the evaluation would start principally on objective criteria in order to maintain the comprehensibility and transparency of the system that was important especially for the professors. For the same reason, it is important that the criteria is known *ex ante*. Objective criteria would also help the professors to understand what is required to get the increase and therefore make the motivational and steering effects more distinct. However, I would include a holistic subjective element in the evaluation because of the multidimensionality and the qualitative aspects of academic work. The measures should reflect the strategy and KPI's of Aalto (Lawler & Jenkins, 1992; Table 5, page 45), which makes it reasonable to include measures from the strategic areas: research excellence, pioneer in education, trend-setting art, and societal impact. Nonetheless, if there is something to learn from the criticism towards the current system, it is that the professors did not appreciate the fact that they had to perform evenly well in each performance area and that an exceptional contribution to one area was not acknowledged. To take this into account, the increase could be given primarily based on performance on one or some of the areas of work (research and artistic activities, education, and impact) and the other areas would be evaluated holistically.

As the measures for merit increase look rather clear based on the opinions of the management and the professors (for the latter see Table 8, page 61), the most preferred measures should be included: publication quality and quantity, thesis supervision, and teaching, at the fewest. Whether to include measures for administration and external funding is a more complex problem: administration because it was generally considered as part of the job description and thus not as something that should be rewarded separately; and external funding because even

though it is important to the university and research and certain professors spend a significant amount of their time acquiring it, it is technically an input rather than a performance output.

As for the measures regarding research, artistic activities, and education, the current measures seem to be fine with the majority if the complex calculation models are abandoned. Therefore publication quality and quantity can be measured by the number of publications in quality forums, the forums being identified within schools because different fields have different measures for quality. Artistic activity can be measured likewise, the measure being the number of reviewed artistic productions. For education, thesis supervision is a preferred and reasonable measure but does not reflect teaching quality much. Therefore, it is justified to include student feedback as an indicator together with the number of Master's and Doctoral thesis supervised while it signals teaching quality quite directly. Additionally, teaching quality reached an average of 3.32 among professors when asking about the preferred criteria (Table 8). It would also cover the lack of teaching in the current (and the former TKK) system, which was mentioned as a shortcoming in the survey.

Because administration is generally seen as a part of the job description, there should not be additional salary for doing it and therefore it should not be included in the merit increase criteria. Because of that, it should be left out even though professors' motivation to do administrative tasks was low, 2.45 on average (see Chart 1 on page 47 for school-specific motivation averages), which would indicate that an extrinsic motivator could be justified for administrative tasks. On the other hand, different positions are often compensated separately, which should give sufficient extrinsic reward for these tasks, and no further reward should be given. It can also be discussed whether the motivation to do administrative tasks should be increased at all since it is not in the essence of professors' work anyhow. It does not seem sensible to motivate professors to perform tasks that will not eventually bring additional value to the implementation of strategy.

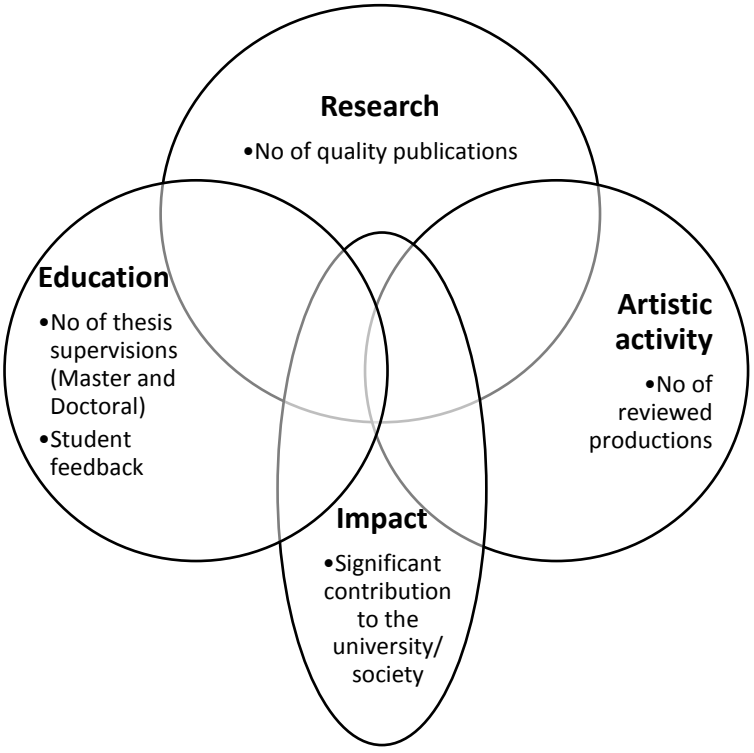
However, some professors can devote a significant amount of their time for developing the university and thus contribute to its strategic goals. This kind of impactful contribution to the university could be taken into account in the merit increase together with significant contribution to the society and it can include having certain positions within the university. Here again the output, *significant* contribution, is the key, not only being in a certain position. Significant contribution could be for instance not only working as a Department Head while it is also paid separately but substantially developing and advancing the department while

working as a Department Head. Here as well as with contribution to the society, extraordinary output is a key and some subjectivity cannot be avoided while there are no relevant quantitative measures for developing the university environment.

External funding is an even more complex question because professors are used to getting rewarded for acquiring it as it has traditionally had a significant role in the bonus system especially in TKK. However, it is not exactly a performance output even though it is crucial for the university. If it was not compensated, some professors stated that they would substantially decrease the efforts that they have put in it, which could have negative effects on the university as a whole. Therefore, I would not include it in the application criteria but it can be taken into account when assessing the professors' holistic performance after the application is received.

Figure 6 presents the performance areas that determine the merit increase criteria. The primary criteria that were explained above are consequently assigned to each performance area. The circles indicate the relationship between different types of performance: principally, the increase can be given according to performance within one area, for example research, but it also possible to gain by different combinations of work. That way specialization will be allowed as hoped by the professors but also extraordinary performance throughout the whole work scale of professors will be recognized.

Figure 6: Performance areas and respective criteria for merit increase



Additional resources

Since additional resources for research are basically a way to reward top-performing research units (individuals or research groups) by granting resources for the unit, they should be allocated for the top-performing units within each school. Therefore, the allocation criteria should be decided in each school for the same reasons as those of the merit increase: the knowledge of what is good performance is in the schools. The criteria could include e.g. published (quality) papers or a scientific breakthrough. Furthermore, it would be logical to reward the units for the external funding they acquire by giving them better premises to conduct their research. Therefore, external funding could be included in the criteria for granting additional resources as well. Since the resources in the resource bank would be limited, I would grant the additional resources for a certain number of the best research units based on the criteria and with a necessary amount of subjectivity. The number of the rewarded units would be determined when the available resources are known so that the value of the reward will be meaningful and that way have a motivational effect.

Recognition

For the recognition element, certain measures should not be defined because one-time achievements with different profiles can be very extraordinary. Instead, there could be verbal criteria defining what is classified extraordinary. Yet the Dean would have the main decision making power for the school-level recognition and the President or Provost for the Aalto-level recognition and they would use mainly subjective criteria based on their judgement and the current strategic need also. The recognition would, anyhow, acknowledge achievements in all the strategic areas without forgetting societal impact or administrative contribution which have been neglected historically. This would also be an excellent channel to reward for internalization and interdisciplinarity while they are in the core of Aalto's strategy but extremely difficult to measure by objective, numerical measures.

6.2 Discussion

The analysis of the case organization confirms the same observation as many scholars studying public sector organizations have discovered: New Public Management has found its way to universities (Pollitt, 1995). This is clearly visible through the linkage from the governmental regulations to an individual professor's performance evaluation in Aalto University. The linkage starts from the Universities Act and continues through the universities' Funding Model, the contract between the Ministry of Education and Culture all

the way to Aalto University's internal Funding Model and performance measures. Consequently, managerial practices seem to be something that the university staff has to live with. Even though NPM has been heavily criticized by academics (e.g. Sehested, 2002) and many Aalto professors perceived incentive systems as a hostile way to control their work, I think that positive effects can be gained from it if the adaptation of the practices is done in a way that respects professors as professionals.

One of the reasons why many of the Aalto professors are strongly against short-term bonuses seems to be the poor execution of the current incentive system. It is a good example of interpreting NPM too literally and not transferring the practices to the context properly. When models and practices that work in corporate organizations are transferred into the public world as such, the effects are most likely not the same as in private organizations (Sehested, 2002). In the case of Aalto, the top management was formed from corporate leaders with little experience in the academic world when it was founded. This is probably one reason why the adaptation did not succeed very well and the professors are extremely dissatisfied and frustrated with the bonus system. However, I would not say that NPM by definition is evil but its wrong implementation causes problems. Many professors did express that they do want to be rewarded but even a stronger opinion was that the current system as such does not bring benefits to anybody. The fact that even those professors who had received a bonus from the current system were extremely dissatisfied with it highlights the problems of the system even more.

One of the most prominent features of professors as agents is that they are motivated agents (Besley & Ghatak, 2005). The survey results in this study fully confirm this statement as the motivation averages reached extremely high levels with especially research, teaching, and artistic activities within ARTS (Chart 1, page 47). Even though the other tasks might not have reached as high motivation levels, it does not mean that professors would not be motivated. On the contrary, they are motivated to do the things that are in the essence of their work. As the motivation drivers indicated, the high motivation levels are primarily due to high intrinsic motivation with respect to the core tasks. Therefore it can be concluded that *professors are primarily driven by intrinsic motivators such as curiosity, science itself, a constant drive to do research, love of knowledge, and simply joy*. They might also be motivated by external motivators such as rewards but to a lesser extent.

Another peculiarity in the principal-agent relationship between professors and university management is that their interests are closer to each other than in traditional private sector corporations (Besley & Ghatak, 2005). This arises partly from the fact that professors are motivated agents and have chosen a career where they can fulfil their ambitions. Besides that, also the management seems to be closer to the interests of professors because of academic leadership (Ramsden et al., 2007). This was clearly visible in the interviews: the management had extremely similar ideas to those of the professors, based on both the survey and the opinions expressed by the professor members of the steering group. All of the interviewed management representatives did indeed have a professor background and many of them also expressed it in the interviews. Therefore it can be concluded that there is so-called natural alignment from two directions in the professor-management relationship: on one hand alignment that derives from the professors being motivated agents and on the other alignment that is due to academic leadership.

Because of professors' high intrinsic motivation, the effects of rewarding on overall motivation should be considered. The worst case scenario would be that the reward system causes crowding-out (Frey & Jegen, 2001), yet the optimal scenario, crowding in, is challenging to achieve with such high motivation levels especially in research. It could be possible in other areas of work where motivation still has reserves to increase but it seems a good goal in itself to have a system that maintains the high level of intrinsic motivation, especially when NPM is already entrenched in the organization. The current system seems to have caused crowding out, at least judging on the professors' comments. One factor that might have even strengthened the negative effect for many professors is the drastic change from the high bonus levels in the TKK system to the rather insignificant levels in the Aalto system. Therefore the crowding-out effect is a consequence of impaired self-esteem (ibid.) while professors perceived the decrease in total compensation as a decreased appreciation of their work.

Another clear finding from the survey was the high level of inequity aversion that prevailed strongly among Aalto professors. The statement of Englmaier and Wambach (2010) that paying equitably within an organization is an effective incentive instrument was confirmed by the survey. It was most visible in the opinions about the fact that a professors' personal bonus is paid from the department's money and thus decreases the resources for other activities in the faculty. It was found that even the professors who had received a bonus were not satisfied with the system and probably experienced a decrease in their personal motivation because

they found the redistribution inequitable. It was also perceived inequitable that only certain professors were eligible to the bonus while the results that they were rewarded for were often an achievement of a whole research group. Therefore many professors felt strongly for rewarding the whole research group instead of only one individual from the group. Giving additional resources was a preferred way to reward research units, groups or individuals. It is reasonable because of both of the arguments above: firstly, even though departments' money was distributed as a reward, it would eventually contribute to the community in the form of new research. Secondly, the reward would be given to all the individuals that contributed to the output. It is also a rational way to allocate funds while the most productive research units will more probably be productive in the future as well.

As inequity averse individuals may experience a decrease in their intrinsic motivation as a result of inequitable rewarding, reward systems can cause crowding out in other ways as well. Professors highlighted that a system that limits their work too much is highly demotivating and that a system that is more guiding than controlling is more preferable. Such system goes in line with the ways to avoid impaired self-determination: by highlighting the informative aspects of the reward system rather than trying to control the employees supports self-determination and consequently intrinsic motivation (Deci, 1980). Similarly, many of the professors expressed that for them, acknowledging their achievements by the school or university is much more rewarding than receiving monetary compensation which was in many cases seen hostile. These findings support the literature that argues that money often decreases intrinsic motivation while positive feedback increases it (Frey & Jegen, 2001).

The three elements of rewarding that construct the holistic reward system introduced in chapter 6.1 form an entity that support professors' self-determination and consequently intrinsic motivation by supporting their *autonomy*, *competence*, and *relatedness* (Ryan & Deci, 2000a). *Merit increase* is an individual reward for a professor and the objective performance levels set personal goals for Full Professors after getting tenured. The criteria should be designed to give information about what kind of performance is desired in order to maintain professors' autonomy over their work and consequently their intrinsic motivation. Reaching the objective goal and receiving the increase supports the feeling of competence, in turn. The *recognition* element increases the feeling of relating to the university and the school by bringing out successes and making them visible to the whole community. *Additional resources* for research units contribute directly to the autonomy over work by giving the unit decision power over the resource, whether it was equipment, research leave, or a new Post-

Doctoral student. This way the elements that both the professors and the management identified complement each other in terms of supporting intrinsic motivation.

Of the three elements, recognition supports self-efficacy by setting example and providing social verbal persuasion (Staples;Hulland;& Higgins, 1998) while the idea is to make success visible to the whole organization. It also helps reducing the time-discounting problem because it can be given within shorter periods of time. However, the long-term nature of professors' work will be taken into account in the merit increase more naturally while the cycle of the increase cannot be very short, otherwise it would become administratively insupportable.

Especially what comes to merit increase and recognition, expectancy-valence theory ought to be taken into account. If we look at the motivation formula (2) of expectancy-valence theory (Kominis & Emmanuel, 2007; page 21), it can be seen why the existing model did not add to motivation: professors' expectancy of how probably they will achieve the goals was low since reaching excellence in all the areas is extremely difficult. This, consequently, lowers the factorial, motivation. The other element, valence, also influences overall motivation and should therefore be set at a level that is high enough to at least maintain motivation. This explains why the motivational effect of the Aalto system remained low for many professors: they did not see fulfilling all the criteria very probable – low expectancy – and they did not perceive the value worth enough to be properly motivated by it. Thus, allowing specialization with the merit increase criteria does not decrease the expectancy levels and setting the merit increase high enough to have significance should both contribute positively to overall motivation. The significance of the value of the additional resources has a similar effect.

With allowing specialization another common problem in performance measurement in multidimensional organizations can be avoided as well: how to include all the aspects of work in the measurement system (Baker et al., 1988). Based on the survey, Aalto professors are strongly opposing a system where everything is measured. It can be asked if all the aspects have to be included in the first place, especially when an organization has a possibility to build its strength by bringing together people with different strengths and specialization areas. That way requiring excellence in all the possible aspects of work is not even necessary for the organization as a whole. The university should definitely not transfer its KPIs to an individual professors' evaluation and rewarding criteria, not because they are impossible to fulfil as a whole and not because many of them are university- of school-wide and thus are not under the control of an individual professor or a research unit. It is important for the motivational

effects that the rewarding criteria are under the control of the professor (Lawler, 2003), which the professors emphasized as well.

When Aalto professors expressed their opinions about how the new reward system should be, simplicity, clarity, transparency, and fairness were by far the most favored qualities that the system should have. These characteristics are not surprising while they are often considered as the conditions for a successful reward system, at least in knowledge-intensive firms (Van Herpen et al., 2005).

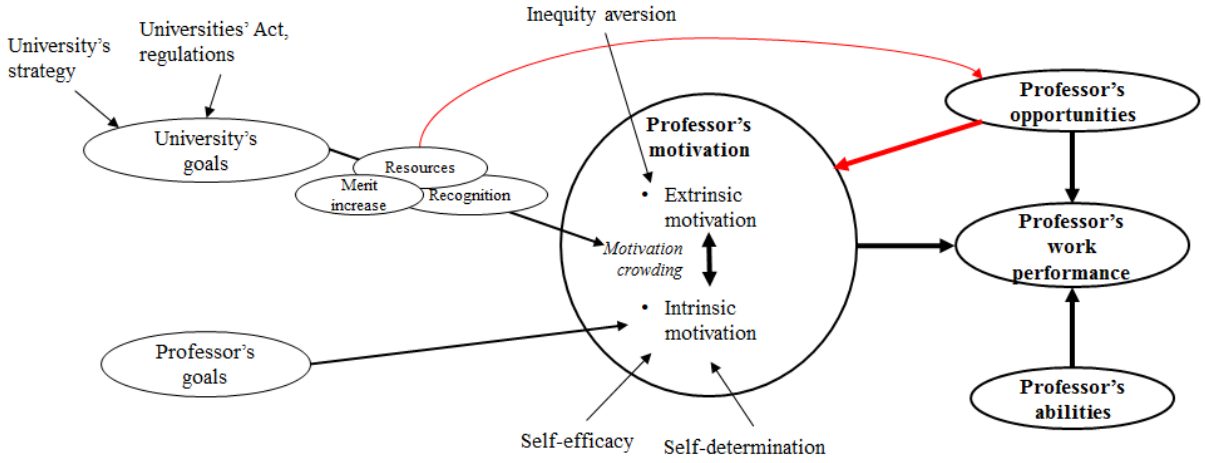
If we look at the theoretical framework of this study, all of the relationships presented in Figure 3 are supported by the empirical data. The management interviews confirmed that one of the goals set to rewarding is communicating Aalto's strategy as well as affect their motivation. It was also clear that professors have their own goals especially with regard to their research and that they want to strive for these goals. Hence, their intrinsic motivation wells from their personal goals. There was also a linkage between professors' extrinsic and intrinsic motivation which was particularly visible in the opinions about the current Aalto system: as it was perceived highly demotivating, it indicates that at least in some cases, crowding out occurred.

The new reward system attempts to maintain professors' intrinsic motivation through fostering both their self-efficacy and self-determination. The former is done by emphasizing success and creating a culture where achievements are verbally acknowledged through recognition. The latter, in turn, is done by the system as a whole: by supporting professors' autonomy, competence, and relatedness, as was stated above. With regard to extrinsic motivation, a way to avoid crowding out is to pay attention to inequity aversion: by making the system fair and equitable, the harmful effects of extrinsic rewards on intrinsic motivation can be minimized.

The original framework is revisited in Figure 7. Rewarding is further specified and replaced by the three elements that were found to support professors' intrinsic motivation, and more precisely the relationship between extrinsic and intrinsic motivation. Furthermore, the motivation crowding relationship between the two types of motivations was added in the original framework because it is influenced by the rewarding elements to a great extent. Consequently, motivation crowding affects the balance between extrinsic and intrinsic motivation and similarly the overall level of motivation.

In addition to the important role that motivation plays in the framework, it seems that rewarding can be extended to affect professors' opportunities as well (see Formula (1), page 17). This is done by giving additional resources for the top performers. More interestingly, it appears that advancing professors' opportunities by providing them more resources enhances their motivation as well. This might result from inequity aversion in professors' case: by rewarding all those who contributed to the outputs and giving them more opportunities to carry out their personal goals the reward is perceived more equitable. Therefore, I would suggest introducing two additional connections in the framework: a connection between the agent's opportunities and motivation as well as resources and opportunities. Since resources were seen as such an important form of rewarding by professors, it can be assumed to have a positive effect on professors' overall motivation even though the managers did not necessarily even consider it as a reward.

Figure 7: Revisited framework



7 CONCLUSIONS

The purpose of this thesis was to design a new, holistic reward system for Aalto University. More specifically, the research question concerned rewarding professors based on their performance in order to maintain their intrinsic motivation and to create external motivators to perform towards the university's strategic goals. In order to design a contextually suitable reward system, two secondary objectives for the thesis were defined: finding out what drives professors' motivation and what kind of rewarding supports their intrinsic motivation. The research was approached through combining three theoretical fields: public sector research, motivation theories, and rewarding literature. The context was created by using public sector literature and especially the concept of New Public Management. While it seemed evident that professors' performance is affected by their motivation and specifically intrinsic motivation to a great extent, Behavioral Agency Theory was chosen to link different motivation theories and human behavior to performance. Finally, different ways of rewarding were assessed in the academic context to illustrate what the rewarding mix can consist of and which ways of rewarding seem most suitable for professors in terms of motivational effects.

The empirical research was conducted as a case study in Aalto University and the data was collected principally by a survey to Aalto's professors and eight interviews of management representatives as well as two ARTS professors. The survey was chosen because it was important to include the professors in the preparation phase and get their perceptions as comprehensively as possible. Therefore it was sent out to all the professors at Aalto; it would not have been possible to reach the same level of information with interviews only and simultaneously give every professor the chance to contribute with their opinions. It was also important to find out the management's objectives for rewarding. Interviews were chosen as the most suitable method because it was easy to identify which managers provided the information needed for the study and interviews gave them more freedom to express their opinions.

The data provided rich findings about the opinions of Aalto University's professors as well as the management and they were found to support the theoretical assumptions. It was apparent that *professors are intrinsically driven* to do their work, especially research, as was expected (Chen et al., 2006). They were motivated to teach and interact with society as these are part of what is in the essence of professors' work. The dissatisfaction towards the current incentive system at Aalto University arose mainly from its complexity, perceived inequitability, and

opaqueness. The dissatisfaction seemed to cause crowding out (e.g. Ryan & Deci, 2000a) for several professors based on their responses. They requested a system that is fair and available for all [Full] professors and would not cause harmful competition and reward only one person for the achievements of a larger group.

As a result of the analysis, a reward system was constructed for Aalto University. *The system consists of three parts: merit increases, additional resources for research units, and recognition*, and these parts were supported by both the professors and the management. These elements support professors' self-determination (Ryan & Deci, 2000b) together and take the different challenges of evaluating and rewarding multidimensional and qualitative work into account: time-discounting problem (Steel & König, 2006) is avoided by recognition that can be provided in a shorter time frame while the long-term nature of professors' work is included in the merit increase. Assessing the quality of work is done through introducing subjective evaluation to support the objective criteria. Another important feature of the system is that it should promote a culture of empowering professors and especially celebrating and acknowledging success and extraordinary achievements within the whole university. This can be done by emphasizing the informing aspect instead of that of the controlling when communicating the system (Deci, 1980).

What comes to the goals and incentives of the university and the professors, the analysis showed that their opinions are indeed close to each other. Therefore the traditional agency problem (Tosi et al., 1997) is smaller than in corporations: the professors' and the management's goals are quite well aligned. The research seems to support at least two possible reasons for the alignment: firstly, professors are motivated agents (Besley & Ghatak, 2005) and the majority of the management has a professor background themselves and thus understand both points of view. It was also found that professors can also be motivated by external interventions, yet they do not always want to be or think that they are. What was surprising was that even though it was known that the opportunities professors have affect their overall performance (Pepper & Gore, 2012), it seems that they contribute to their motivation as well, and specifically intrinsic motivation. Related to the opportunities, it was somewhat surprising that the professors rated additional resources as the most preferred element of rewarding even though further resources bring more responsibilities as well. It was also unexpected that over 70 % of the professors thought a bonus system is needed, even though the result can be partly explained by the different ways of understanding the concept of bonus.

Even though the overall response rate of the survey was good, 30.5 %, the low response rates in some schools, especially ARTS, decreases the reliability of certain conclusions from the school-specific data. This problem was tried to be solved by conducting two additional interviews in ARTS; however, the results are not fully as reliable as with a higher response rate. Another factor that might bias the results of the survey is that it might have attracted those professors to answer who are the most dissatisfied with the current situation and want to express their resistance towards it. What the thesis does not take a stand on is how the renewal of the reward system will eventually work and what kind of effects it will have on the professors' motivation. In an optimal case, the sample would have covered every Full Professor in Aalto University in order to avoid any bias; however, this situation would be highly unlikely to achieve. Additionally, the management's point of view could have been given more emphasis on even though the primary focus was on the professors.

For further research, it would be a good topic to assess the realized success of the new model and the changes it cases in professors' motivation after its implementation. Furthermore, it would be interesting to study several universities simultaneously and compare universities that are using performance-based rewards to those that are not and see if rewards actually have a positive effect on performance. In addition, since this thesis concentrated mostly on the structure of a reward system, further research could evaluate how to communicate such system in order to have positive effects.

To conclude, this thesis provides a fresh framework for approaching a topic that has on the other hand been discussed but that is not yet very diversely researched. The framework proved to give a good basis for building a reward system for professors and evaluating its effects on their extrinsic and intrinsic motivation and consequently performance. The study was conducted with a unique opportunity to collect information about professors' opinions about how they are rewarded at the moment and how they would want to be rewarded, knowing that there will most likely be a change in the system and that they can express their expectations towards the project. In addition, the results provide insightful information about professors' motivation and how different forms of rewarding would affect it. While specific criteria for rewarding might not be very generalizable because they were constructed for the case organization, the elements of rewarding and their connection to motivation can be better applied at a general level because they were evaluated based on previous literature at a more general level.

REFERENCES

Aaltio-Marjosola, I. (1999). *Casetutkimus metodisena lähestymistapana*. Retrieved March 10, 2014, from www.metodix.com.

Aalto University. (2014a). *About us: Aalto University*. Retrieved August 5, 2014, from http://www.aalto.fi/en/about/reports_and_statistics/

Aalto University. (2014b). *Aalto University front page*. Retrieved August 5, 2014, from http://www.aalto.fi/en/

Aalto University. (2014c). Retrieved June 30, 2014, from Tenure Track: http://www.aalto.fi/en/about/careers/tenure_track/

Aalto University. (2014d). Main principals of the TKK incentive model. Internal Material. Received from Hanna Nurmela, February 11, 2014.

Aalto University. (2014e). Aalto University Strategy. Internal material. Received from Hanna Nurmela, March 3, 2014.

Aalto University Funding Model 2013 and Schedule for Autumn 2012. (2012).

Aalto University News. (2012). Retrieved March 3, 2014, from Aalto University: http://web.aalto.fi/en/current/news/2012-04-02/

Adcroft, A., & Willis, R. (2005). The (un)intended outcome of public sector performance measurement. *International Journal of Public Sector Management*, 18(5), 386-400.

Amabile, T. M. (1993). Motivational synergy: Toward new conceptualizations of intrinsic and extrinsic motivation in the workplace. *Human Resource Management Review*, 3(3), 185-201.

Ariely, D. (2010). You Are What You Measure. *Harvard Business Review*, 88(6), 38.

Bailey, J. G. (1999). Academics' Motivation and Self-efficacy for Teaching and Research. *Higher Education research and development*, 18(3), 343-359.

Baker, G. P.;Jensen, M. C.;& Murphy, K. J. (1988). Compensation and incentives: Practice vs. theory. *The journal of Finance*, 43(3), 593-616.

Bandura, A. (1994). Self-efficacy. In S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (pp. 71-81). New York: Academic Press.

Bartol, K. M.;& Srivastava, A. (2002). Encouraging knowledge sharing: the role of organizational reward systems. *Journal of Leadership & Organizational Studies*, 9(1), 64-76.

Benabou, R.;& Tirole, J. (2003). Intrinsic and extrinsic motivation. *The Review of Economic Studies*, 70(3), 489-520.

Berdahl, R. (1990). Academic freedom, autonomy and accountability in British universities. *Studies in Higher Education*, 15(2), 169-180.

Besley, T.;& Ghatak, M. (2005). Competition and incentives with motivated agents. *American economic review*, 95(3), 616-636.

Bess, J. L. (1998). Contract Systems, Bureaucracies, and Faculty Motivation: The Probable Effects of a No-Tenure Policy. *Journal of Higher Education*, 69(1), 1-22.

Blaxter, L.;Hughes, C.;& Tight, M. (1998). Writing on academic careers. *Studies in Higher Education*, 23(3), 281-295.

Bonner, S. E.;& Sprinkle, G. B. (2002). The effects of monetary incentives on effort and task performance: theories, evidence, and a framework for research. *Accounting, Organizations and Society*, 27, 303–345.

Buelens, M.;& Van den Broeck, H. (2007). An analysis of differences in work motivation between public and private sector organizations. *Public Administration Review*, 67(1), 65-74.

Carmichael, H. L. (1988). Incentives in academics: Why is there tenure? *Journal of political Economy*, 96(3), 453-72.

Chen, Y.;Gupta, A.;& Hoshower, L. (2006). Factors that motivate business faculty to conduct research: An expectancy theory analysis. *Journal of Education for Business*, 81(4), 179-189.

Chenhall, R. H.;& Langfield-Smith, K. (2003). Performance measurement and reward systems, trust, and strategic change. *Journal of management accounting research*, 15(1), 117-143.

Clark, B. R. (1998). The entrepreneurial university: Demand and response 1. *Tertiary Education & Management*, 4(1), 5-16.

Cole, S.;& Cole, J. R. (1967). Scientific output and recognition: A study in the operation of the reward system in science. *American sociological review*, 377-390.

Contract between Minedu and Aalto University 2013-2016. (2012). Retrieved February 12, 2014, from Ministry of Education and Culture: http://www.minedu.fi/OPM/Koulutus/yliopistokoulutus/hallinto_ohjaus_ja_rahoitus/yliopistoj_tulossopimukset/?lang=fi

Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18(1), 105-115.

Deci, E. L. (1980). *The psychology of self-determination.* Lexington, Massachusettes: D. C. Heath and Company.

Denman, B. D. (2005). What is a University in the 21st Century? *Higher education Management and policy*, 17(2), 9-26.

Dixit, A. (2002). Incentives and organizations in the public sector: An interpretative review. *Journal of human resources*, 37(4), 696-727.

Eccles, J. S.;& Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual review of psychology*, 53(1), 109-132.

Eisenhardt, K. M. (1989a). Agency theory: An assessment and review. *Academy of management review*, 14(1), 57-74.

Eisenhardt, K. M. (1989b). Building Theories from Case Study Research. *Academy of Management Review*, 14(4), 532–550.

Englmaier, F.;& Wambach, A. (2010). Optimal incentive contracts under inequity aversion. *Games and Economic Behavior*, 69(2), 312-328.

Fehr, E.;& Falk, A. (2002). Psychological foundations of incentives. *European Economic Review*, 46(4), 687-724.

Fehr, E.;& Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *The quarterly journal of economics*, 114(3), 817-868.

Frey, B. S.;& Jegen, R. (2001). Motivation crowding theory. *Journal of economic surveys*, 15(5), 589-611.

Fryer, K.;Antony, J.;& Ogden, S. (2009). Performance management in the public sector. *International Journal of Public Sector Management*, 22(6), 478-498.

Gerhart, B.;Milkovich, G.;& & Murray, B. (1992). Pay, performance and participation. Teoksessa D. Lewin;O. Mitchell;& P. Sherer (Toim.), *Research frontiers in industrial relations and human resources*. Madison, WI: IRRA.

Geuna, A.;& Martin, B. R. (2003). University research evaluation and funding: an international comparison. *Minerva*, 41(4), 277-304.

Gibbs, M.;Merchant, K. A.;van der Stede, W. A.;& Vargus, M. E. (2004). Determinants and effects of subjectivity in incentives. *The Accounting Review*, 79(2), 409-436.

Gomez-Mejia, L. R. (1992). Structure and process of diversification, compensation strategy, and firm performance. *Strategic management journal*, 13(5), 381-397.

Gomez-Mejia, L.;& Wiseman, R. M. (1997). Reframing Execufive Compensation: An Assessment and Outlook. *Journal of Management*, 23(3), 291-374.

Graham, S.;& Weiner, B. (1996). Theories and principles of motivation. *Handbook of educational psychology*, 4, 63-84.

Handolin, V. (2004). Systeemiälykäs palkitseminen. In R. Hämäläinen, & E. Saarinen (Eds.), *Näkökulmia vuorovaikutukseen ja kokonaisuuksien hallintaan. Helsinki University of Technology. Systems Analysis Laboratory Research Reports* (pp. 51-68).

Hansen, D. G. (1997). Worker performance and group incentives: A case study. *Industrial and Labor Relations Review*, 51(1), 37-49.

Heimonen, M. (2011). *Organizational inertia in a strategic public sector merger: case Aalto University.* Aalto University School of Science, Department of Industrial Engineering and Management. Helsinki: Aalto Print.

Helsinki School of Economics history. (2014). Retrieved March 3, 2014, from Aalto University: http://www.aalto.fi/en/about/history/biz/

Heneman, R. L.;& Cohen, D. J. (1988). Supervisory and employee characteristics as correlates of employee salary increases. *Personnel Psychology*, 41(2), 345-360.

Henri, J. F. (2006). Management control systems and strategy: a resource-based perspective. *Accounting, organizations and society*, 31(6), 529-558.

Herzberg, F.;Mausner, B.;& Snyderman, B. B. (1959). *The motivation to work.* New York: Wiley.

Hicks, D. (2012). Performance-based university research funding systems. *Research Policy*, 41(2), 251-261.

Hirsjärvi, S.;& Hurme, H. (2008). *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö.* Helsinki: Gaudeamus Helsinki University Press.

Hood, C. (1991). A public management for all seasons? *Public administration*, 69(1), 3-19.

HSE Foundation. (2014). Retrieved July 8, 2014, from Aalto University School of Business: http://biz.aalto.fi/en/cooperation/foundation/

Hsieh, Y. H.;& Chen, H. M. (2011). Strategic fit among business competitive strategy, human resource strategy, and reward system. *Academy of Strategic Management Journal*, 10(2), 11-32.

Hölttä, S. (1998). The funding of universities in Finland: Towards goal-oriented government steering. *European Journal of Education*, 55-63.

Jensen, M. C.;& Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.

Kalleberg, A. L. (1977). Work values and job rewards: A theory of job satisfaction. *American sociological review*, 42 (1), 124-143.

Kallio, K.-M. (2014). *"Ketä kiinnostaa tuottaa tutkintoja ja julkaisuja liukuhihnaperiaatteella...?" - Suoritusmittauksen vaikutukset tulosohjattujen yliopistojen tutkimus- ja opetushenkilökunnan työhön.* Doctoral Thesis, University of Turku, Turku.

Kaplan, R. S.;& Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part II. *Accounting Horizons*, 15(2), 147-160.

Kasanen, E.;Lukka, K.;& Siitonen, A. (1993). The constructive approach in management accounting research. *Journal of management accounting research*, (5), 243-264.

Kasten, K. L. (1984). Tenure and merit pay as rewards for research, teaching, and service at a research university. , . *The Journal of Higher Education*, 55(4), 500-514.

Kauhanen, A.;& Piekkola, H. (2006). What makes performance-related pay schemes work? Finnish evidence. *Journal of Management & Governance*, 10(2), 149-177.

Kominis, G.;& Emmanuel, C. R. (2007). The expectancy–valence theory revisited: Developing an extended model of managerial motivation. *Management Accounting Research*, 18(1), 49-75.

Kreps, M. D. (1997). Intrinsic motivation and extrinsic incentives. *The American Economic Review*, 87 (2), 359-364.

Kuoppala, K. (2005). Management by results at Finnish universities. *Journal of Higher Education Policy and Management*, 27(3), 345-355.

Labaree, D. F. (2010). Understanding the rise of American higher education: How complexity breeds autonomy. , 3, 007. *Peking University Education Review*, 31(3), 24-38.

Lawler, E. E. (1993). Effective Reward Systems: Strategy, Diagnosis, Design, and Change. *CEO Publication.*

Lawler, E. E. (2003). Reward systems in knowledge-based organizations. In S. E. Jackson, A. Denisi, & M. Hitt (Eds.), *Managing knowledge for sustained competitive advantage: Designing strategies for effective human resource management* (pp. 274-302). San Fransisco: Jossey-Bass.

Lawler, E. E., & Jenkins, G. D. (1992). Strategic reward systems. In M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of Industrial & Organizational Psychology* (2nd ed., pp. 1009-1055). Palo Alto, CA: Consulting Psychologist Press.

Lee, J. (2001). Instructional support for distance education and faculty motivation, commitment, satisfaction. *British Journal of Educational Technology*, 32(2), 153-160.

Locke, E. A.;& Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American psychologist*, 57(9), 705.

Locke, E. A.;& Latham, G. P. (2006). New directions in goal-setting theory. *Current Directions in Psychological Science*, 15(5), 265-268.

Locke, E. A.;Shaw, K. N.;Saari, L. M.;& & Latham, G. P. (1981). Goal setting and task performance: 1969–1980. *Psychological bulletin*, 90(1), 125.

London, M.;& Oldham, G. R. (1977). A Comparison of Group and Individual Incentive Plans. *Academy of Management Journal*, 20(1), 34-41.

Lukka, K. (1991). Laskentatoimen tutkimuksen epistemologiset perusteet. *Liiketaloudellinen aikakauskirja*, 40(2), 161-186.

Malmi, T.;& Brown, D. A. (2008). Management control systems as a package—Opportunities, challenges and research directions. *Management accounting research*, 19(4), 287-300.

Marginson, S. (2000). Rethinking academic work in the global era. *Journal of Higher Education Policy and Management*, 22(1), 23-35.

Maslow, A. H.;Frager, R.;& Fadiman, J. (1970). *Motivation and personality* (2nd p.). New York: Harper & Row.

McPherson, M. S.;& Schapiro, M. O. (1999). Tenure issues in higher education. *Journal of Economic Perspectives*, 13, 85-98.

Miner, J. B. (1980). The role of managerial and professional motivation in the career success of management professors. *Academy of Management Journal*, 23(3), 487-508.

Mitchell, T. R. (1982). Motivation: New directions for theory, research, and practice. *Academy of management review*, 7(1), 80-88.

Modell, S. (2003). Goals versus institutions: the development of performance measurement in the Swedish university sector. *Management Accounting Research*, 14(4), 333-359.

Modell, S. (2005). Triangulation between case study and survey methods in management accounting research: An assessment of validity implications. *Management Accounting Research* , 16, 231–254.

Mohrman, S. A. (2003). Designing work for knowledge-based competition. In S. E. Jackson, A. Denisi, & M. Hitt (Eds.), *Managing knowledge for sustained competitive advantage: Designing strategies for effective human resource management* (pp. 94-123). San Fransisco: Jossey-Bass.

Myllyoja, N. (2008, August 31). Aalto-yliopisto ja sen lyhyt historia. *tekniikka & talous*.

Nir, A. E.;& Zilberstein-Levy, R. (2006). Planning for academic excellence: tenure and professional considerations. *Studies in Higher education*, 31(5), 537-554.

OKM. (2014). *Governance, control, and financing of universities*. Retrieved February 12, 2014, from Ministry of Education and Culture: http://www.minedu.fi/OPM/Koulutus/yliopistokoulutus/hallinto_ohjaus_ja_rahoitus/?lang=fi

One of Finland's most international schools. (2012). Retrieved March 3, 2014, from Aalto University School of Arts, Design, and Architecture: http://arts.aalto.fi/en/about/international_networks/

Oxford Dictionaries. (2014). Retrieved June 27, 2014, from http://www.oxforddictionaries.com/definition/english/university

Pal, L. A.;& Ireland, D. (2009). The public sector reform movement: mapping the global policy network. *International Journal of Public Administration*, 32(8), 621-657.

Pepper, A.;& Gore, J. (2012). Behavioral Agency Theory New Foundations for Theorizing About Executive Compensation. *Journal of management*.

Pfeffer, J.;& Lawler, J. (1980). Effects of job alternatives, extrinsic rewards, and behavioral commitment on attitude toward the organization: A field test of the insufficient justification paradigm. *Administrative Science Quarterly*, 38-56.

Pinto, G.;& Pulido, E. (1997). Motivation of faculty members at a Latin American university: A case study. *European journal of engineering education*, 22(4), 421-426.

Pollitt, C. (1995). Justification by works or by faith? Evaluating the new public management. *Evaluation*, 1(2), 133-154.

Ramsden, P.;Prosser, M.;Trigwell, K.;& Martin, E. (2007). University teachers' experiences of academic leadership and their approaches to teaching. *Learning and Instruction*, 17(2), 140-155.

Rantanen, H.;Kulmala, H. I.;Lönnqvist, A.;& Kujansivu, P. (2007). Performance measurement systems in the Finnish public sector. *International Journal of Public Sector Management*, 20(5), 415-433.

Ryan, R. M.;& Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, 25(1), 54-67.

Ryan, R. M.;& Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Saarikivi, J. (2014, July 14). Kun puhumme maailman parhaasta. *Helsingin Sanomat*, p. Tiede.

Scapens, R. W. (1990). Researching management accounting practice: The role of case study methods. *British Accounting Review*, 22, 259–281.

Sehested, K. (2002). How new public management reforms challenge the roles of professionals. *International Journal of Public Administration*, 25(12), 1513-1537.

Smeemk, S.;Teelken, C.;Eisinga, R.;& Doorewaard, H. (2009). Managerialism, organizational commitment, and quality of job performances among European university employees. *Research in Higher Education*, 50(6), 589-607.

Staples, D. S.;Hulland, J. S.;& Higgins, C. A. (1998). A self-efficacy theory explanation for the management of remote workers in virtual organizations. *Journal of Computer-Mediated Communication*, 3(4), 0-0.

Steel, P.;& König, C. J. (2006). Integrating theories of motivation. *Academy of Management Review*, 31(4), 889-913.

Steers, R. M.;Mowday, R. T.;& Shapiro, D. L. (2004). Steers, R. M., Mowday, R. T., & Shapiro, D. L. (2004). Introduction to special topic forum: The future of work motivation theory. *The Academy of Management Review*, 29(3), 379-387.

Stelwagen, M. (2013). Rewarding at Aalto University. Presentation in Roadshow of Rewarding for Aalto staff on 28th of November 2013. Helsinki School of Business, Helsinki.

Sutton, T. P., & Bergerson, P. J. (2001). *Faculty Compensation Systems: Impact on the Quality of Higher Education* (Vols. ASHE-ERIC Higher Education Report, 28(2)). San Francisco: Jossey-Bass.

ter Bogt, H. J.;& Scapens, R. W. (2012). Performance management in universities: effects of the transition to more quantitative measurement systems. *European Accounting Review*, 21(3), 451-497.

Thorsen, E. J. (1996). Stress in academe: What bothers professors? *Higher Education*, 31(4), 471-489.

Tikkanen, H. (21. May 2014). Yliopistouudistuksen totutus vaatii rohkeutta. *Helsingin Sanomat*.

Tosi, H. L.;Katz, J. P.;& Gomez-Mejia, L. R. (1997). Disaggregating the agency contract: The effects of monitoring, incentive alignment, and term in office on agent decision making. *Academy of Management Journal*, 40(3), 584-602.

Tullock, G. (1996). Corruption theory and practice. *Contemporary economic policy*, 14(3), 6-13.

Universities Act 558/2009. (n.d.).

Universities Funding Model. (2012). Retrieved February 11, 2014, from Ministry of Education and Culture: http://www.minedu.fi/export/sites/default/OPM/Koulutus/yliopistokoulutus/hallinto_ohjaus_ja_rahoitus/liitteet/OKM_rahoitusmalli-muistio.pdf

Vaivio, J. (2008). Qualitative management accounting research: rationale pitfalls and potential. *Qualitative Research in Accounting and Management*, 5(1) 64–86.

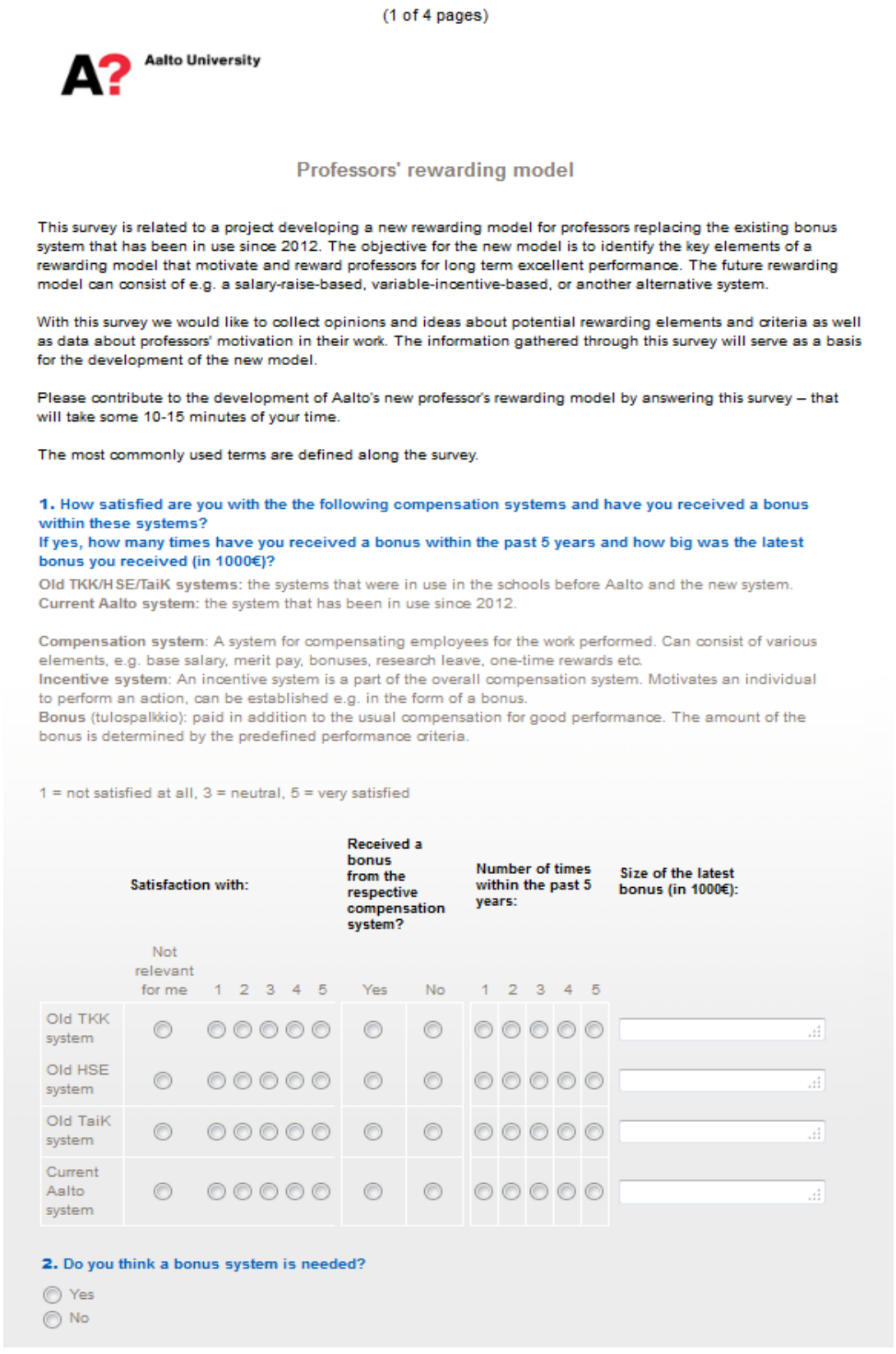
Van Herpen, M., van Praag, M., & Cools, K. (2005). The effects of performance measurement and compensation on motivation: An empirical study. *De Economist*, 153(3), 303-329.

Wiseman, R. M.;& Gomez-Mejia, L. R. (1998). A behavioral agency model of managerial risk taking. *Academy of management Review*, 23(1), 133-153.

Wright, B. E. (2001). Public-Sector Work Motivation: A Review of the Current Literature and Revised Conceptual Model. *Journal of Public Administration Research and Theory*, 4, 559-586.

APPENDIXES

Appendix 1: Professors' rewarding model survey



(1 of 4 pages)

Aalto University

Professors' rewarding model

This survey is related to a project developing a new rewarding model for professors replacing the existing bonus system that has been in use since 2012. The objective for the new model is to identify the key elements of a rewarding model that motivate and reward professors for long term excellent performance. The future rewarding model can consist of e.g. a salary-raise-based, variable-incentive-based, or another alternative system.

With this survey we would like to collect opinions and ideas about potential rewarding elements and criteria as well as data about professors' motivation in their work. The information gathered through this survey will serve as a basis for the development of the new model.

Please contribute to the development of Aalto's new professor's rewarding model by answering this survey – that will take some 10-15 minutes of your time.

The most commonly used terms are defined along the survey.

1. How satisfied are you with the the following compensation systems and have you received a bonus within these systems?
If yes, how many times have you received a bonus within the past 5 years and how big was the latest bonus you received (in 1000€)?

Old TKK/HSE/TaiK systems: the systems that were in use in the schools before Aalto and the new system.
Current Aalto system: the system that has been in use since 2012.

Compensation system: A system for compensating employees for the work performed. Can consist of various elements, e.g. base salary, merit pay, bonuses, research leave, one-time rewards etc.
Incentive system: An incentive system is a part of the overall compensation system. Motivates an individual to perform an action, can be established e.g. in the form of a bonus.
Bonus (tulospalkkio): paid in addition to the usual compensation for good performance. The amount of the bonus is determined by the predefined performance criteria.

1 = not satisfied at all, 3 = neutral, 5 = very satisfied

	Satisfaction with:						Received a bonus from the respective compensation system?		Number of times within the past 5 years:					Size of the latest bonus (in 1000€):
	Not relevant for me	1	2	3	4	5	Yes	No	1	2	3	4	5	
Old TKK system														
Old HSE system														
Old TaiK system														
Current Aalto system														

2. Do you think a bonus system is needed?

- Yes
- No

3. You can motivate or clarify your answers in questions 1-2 below if you like.

4. What is your opinion on rewarding elements - which ones should be part of the overall rewarding model and how important do you find these elements?

Merit increase: increase in salary based on individual performance
Additional resources: monetary for research; e.g. for equipment, hiring research personnel
Short-term: based on performance within a year
Long-term: based on performance for over a year
Group-specific bonus: for a research group, will be then divided within the group members
Distinct one-time bonuses: eg. publication reward, reward for exceptional teaching, reward for thesis guidance
Recognition: researcher of the year, teacher of the year etc. awards

Please rate the ones you think should be part of the overall rewarding system.
1 = not very important, 5 = very important, or mark "should not be included".

	should not be included	1	2	3	4	5
merit increase	○	○	○	○	○	○
additional resources	○	○	○	○	○	○
short-term individual bonuses	○	○	○	○	○	○
long-term individual bonuses	○	○	○	○	○	○
group-specific bonuses	○	○	○	○	○	○
distinct one-time bonuses	○	○	○	○	○	○
research leave	○	○	○	○	○	○
recognition	○	○	○	○	○	○
other, what?*	○	○	○	○	○	○
other, what?*	○	○	○	○	○	○
other, what?*	○	○	○	○	○	○
other, what?*	○	○	○	○	○	○

*ticking the button releases the text box in the open options

5. Which elements should be included in the evaluation criteria of a possible merit increase and bonus system?

Here the idea is to gather information about your opinions about the possible evaluation elements of the respective systems, not yet how they are measured. Please give your opinion about the importance as well.

1 = little importance, 3 = moderate importance, 5 = high importance

	Merit increase						**Bonus system**					
	Should not be included	1	2	3	4	5	Should not be included	1	2	3	4	5
Research and artistic work												
Publication quality	○	○	○	○	○	○	○	○	○	○	○	○
Publication activity	○	○	○	○	○	○	○	○	○	○	○	○
Competitive funding	○	○	○	○	○	○	○	○	○	○	○	○
Funding from partners	○	○	○	○	○	○	○	○	○	○	○	○
External awards & recognition	○	○	○	○	○	○	○	○	○	○	○	○
Interdisciplinary projects	○	○	○	○	○	○	○	○	○	○	○	○
International visibility	○	○	○	○	○	○	○	○	○	○	○	○
Artistic productions	○	○	○	○	○	○	○	○	○	○	○	○
Education												
Teaching quality	○	○	○	○	○	○	○	○	○	○	○	○
Student feedback	○	○	○	○	○	○	○	○	○	○	○	○
Student performance	○	○	○	○	○	○	○	○	○	○	○	○
Thesis supervision	○	○	○	○	○	○	○	○	○	○	○	○
Interdisciplinary teaching	○	○	○	○	○	○	○	○	○	○	○	○
Societal impact												
National societal participation	○	○	○	○	○	○	○	○	○	○	○	○
Media visibility	○	○	○	○	○	○	○	○	○	○	○	○
Contribution to the community/industry	○	○	○	○	○	○	○	○	○	○	○	○
Spin-offs	○	○	○	○	○	○	○	○	○	○	○	○
Partner cooperation	○	○	○	○	○	○	○	○	○	○	○	○
Other												
Administrative tasks	○	○	○	○	○	○	○	○	○	○	○	○
Aalto performance	○	○	○	○	○	○	○	○	○	○	○	○
School performance	○	○	○	○	○	○	○	○	○	○	○	○
Department performance	○	○	○	○	○	○	○	○	○	○	○	○
Research group performance	○	○	○	○	○	○	○	○	○	○	○	○
Other, what?*	○	○	○	○	○	○	○	○	○	○	○	○
Other, what?*	○	○	○	○	○	○	○	○	○	○	○	○
Other, what?*	○	○	○	○	○	○	○	○	○	○	○	○
*ticking the button releases the text box in the open options												

Next -->

(2 of 4 pages)

Aalto University

Professors' rewarding model

6. How motivated are you to perform the following tasks? What are your key motivational drivers regarding these tasks?

1 = not very motivated, 3 = neutral, 5 = very motivated

	Motivation regarding:						Key motivation drivers?
	1	2	3	4	5	not applicable	
Research	○	○	○	○	○	○	
Artistic activity	○	○	○	○	○	○	
Teaching	○	○	○	○	○	○	
Interaction with society	○	○	○	○	○	○	
Administrative tasks	○	○	○	○	○	○	

7. What is your total working time annually?

choose...

8. How is your working time divided between the following tasks (approximate % of the total time)?

	0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%
Research	○	○	○	○	○	○	○	○	○	○
Artistic activity	○	○	○	○	○	○	○	○	○	○
Teaching	○	○	○	○	○	○	○	○	○	○
Interaction with society	○	○	○	○	○	○	○	○	○	○
Administrative tasks	○	○	○	○	○	○	○	○	○	○
Other, what*	○	○	○	○	○	○	○	○	○	○

*ticking the button releases the text box in the open option

9. Which issues affect your use of time?

e.g. own preferences, Aalto requirements, other commitments.

<-- Previous Next -->

(3 of 4 pages)

Aalto University

Professors' rewarding model

10. Free word

Here you can give general or specific comments, opinions, and/or suggestions that you find important regarding professors' rewarding.

<-- Previous Next -->

Aalto University

Professors' rewarding model

Demographic information

11. How old are you?

choose

12. What is your gender?

- Female
- Male
- Other

13. What is your school at Aalto primarily?

What school do you work for? If you work for more than one school, please mark the primary school.

- ARTS
- BIZ
- CHEM
- ELEC
- ENG
- SCI

14. What is your current position at Aalto?

- Full professor
- Professor of Practice
- Associate professor
- Assistant professor 2
- Assistant professor 1
- Other, what?

15. Do you have any managerial or other special role at Aalto? If yes, which?

- [ ] Dean
- [ ] Vice Dean
- [ ] Head of Department
- [ ] Vice Head of Department
- [ ] Programme Manager
- [ ] Other, what?
- [ ] No, I don't have any

16. How long have you been working at Aalto, including its predecessors (in years)?

Please fill in both the years you have worked at Aalto (incl. its predecessors) in total as well as the time you have worked in a professor position at Aalto, including assistant, associate, and full professors.

At Aalto, incl. predecessors:	As a professor:
choose...	choose...

17. What is your monthly salary level?

choose...

18. What is your actual performance regarding the following?

Number of publications in 2011-2013:	Number of completed master's thesis instructions in 2011-2013:	Number of completed PhD instructions in 2011-2013:	Amount of external funding in 2011-2013:	Number of artistic productions in 2011-2013:
choose...	choose...	choose...	choose...	choose...

19. What previous working experience do you have outside of Aalto?

List the organization, position, and years of your most relevant work experiences. (Max. 3)
Please use a semicolon to separate the different parts.

e.g. *Helsinki University; Professor; 2000-2001*

1.
2.
3.

Thank you for answering the survey! If you want to check your answers, click '**previous**'; if you are ready and don't want to change your answers, click '**submit**' to send the answers.

<-- Previous | Submit

Appendix 2: Structure of the management interviews

Goals and achieving them:

- What are the goals of Aalto/the individual schools? What are the primary objectives?
- How do you think the professors could be guided and motivated towards achieving these goals?

Rewarding:

- Which rewarding elements should the overall rewarding consist of?
- Do you think an incentive system is a good way to steer and motivate professors? Is it needed?
- How do you think merit increase and bonus/incentive systems relate to each other?
- Which measures do you think a bonus system should consist of (taking the Aalto and School objectives into account)?
- What about merit increase?
- In which form should the bonus be paid? Should it be paid individually or to the research group?
- What other ways of rewarding could be possible to instead of an incentive system?
- Should each school have a distinctive incentive system?

Reward systems:

- How good do you think the current incentive system at Aalto is?
- What about the old TKK system?

Appendix 3: Structure of the ARTS interviews

Background:

- What is your work history like? How have you gotten to ARTS?
- What expectations do you have regarding your future career?
- Do you have working experience from other universities?
- Are you a full-time professor at the moment?

Work and motivation:

- What is important for you in your work?
- What motivates you as a professor? How has this evolved during your career?
- What motivates you for the following:
    - research
    - teaching
    - artistic activities
    - societal impact
    - administration
- Which areas of work are you concentrated on in Aalto? Research, teaching, arts?
- What other possible projects/work do you have outside Aalto?

Goals (Aalto and own):

- Which goals of Aalto are important for you and your work?
- How do your personal goals differ from those of Aalto? How could the possible difference be decreased?
- Could rewarding have influence in this?
- What kind of holistic rewarding would affect aligning the goals?

Rewarding:

- How would an ideal reward system be like in your opinion?
- What kind of reward system would motivate you to work according to Aalto's goals?
- If you think about your work in Aalto, do you think the current rewarding is at a sufficient level and that the ways of rewarding are suitable?
- What would be the best ways of rewarding for you? What about ARTS in general?
- Do you think that a bonus in some form would be relevant? (e.g. for motivating, recognition..)
- If not: Could there be another way to acknowledge great performance? Recognition?
- If yes: What area of work would be relevant for ARTS to reward? (what takes a lot of time, is aligned to Aalto's goals)
- Interdisciplinarity is strength in ARTS; how could it be considered in rewarding?
- Do you think an Aalto-wide reward system could work? Including an option to vary the system at the school level.

Appendix 4: Timetable of the interviews

Date	Interviewee
Wed May 28	Top manager A at Aalto level
Tue June 3	Dean A
Tue June 3	ARTS professor A, Department of Architecture
Mon June 9	Top manager B at Aalto level
Mon June 9	Dean B
Wed June 11	Dean C
Fri June 13	Dean D
Fri June 13	ARTS professor B, Department of Design
Fri June 13	Dean E
Mon June 16	Dean F