

**PERFORMANCE MANAGEMENT OF ACADEMIC STAFF AND
ITS EFFECTIVENESS TO TEACHING AND RESEARCH –
BASED ON THE EXAMPLE OF ESTONIAN UNIVERSITIES**

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Abstract. The aim of the research is to identify options for developing performance management (PM) of the academic staff (AS) based on the example of Estonian universities (economics faculties). We want to find out more about PA and its interaction with other elements of performance – the effectiveness of teaching and research are studied. The analysis includes a review on how the PM system has developed over time, ascertaining special features with respect to the economic crisis. Methods included three questionnaire-based surveys of AS carried out in 2013, interviews with nine academic leaders and seven focus group interviews were conducted. Qualitative methods involved the analysis of documentation universities, interviews and participatory observations within a case study. A detailed PA system enables the AS to achieve higher results specifically during periods of restructuring and change at universities, but causes a negative impact for quality and motivation of AS in times of crisis. During the stage of further development of the faculties, it would be necessary to pay more attention to qualitative indicators and reduce the number of quantitative indicators. It is necessary to develop the PM to be applied in conjunction with other management instruments (qualitative management, personnel management).

Keywords: performance management, academic staff, university, performance appraisal, remuneration, pay for performance, effectiveness

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1. Introduction and method

The aim of the research is to identify options for developing performance management (hereinafter PM) of the academic staff (hereinafter AS) based on the example of Estonian universities. For the purposes of this research, the scope of PM is limited to the performance appraisal (hereinafter PA) and remuneration systems of AS, enabling more analyses of interplay between those two components. The transition from the traditional university to the modern university after

the economic crisis has brought several changes in the management of universities in the last decade. There have been significant decreases in student numbers and the end of private funding for studying in Estonia too.

The objects of the research are the PM systems for AS in the three leading universities and their subunits in Estonia: the Faculty of Economics and Business Administration at the University of Tartu (hereinafter U1); the School of Economics and Business Administration at the Tallinn University of Technology (hereinafter U2); and the private Estonian Business School (hereinafter U3). The main focus is the PM of the AS in the Economics and Business Administration faculties, where there were the biggest changes in teaching and research. The research question is to identify the effectiveness of PA and remuneration systems and to investigate the options for developing PM in the universities. The management of university faculties has been changing and has increasingly used management instruments of the private sector, which need professional managers.

The research methodology was developed incorporating exploratory methods, including questionnaire-based surveys and interviews. Exploratory analyses and qualitative methods were conducted involving the analyses of documentation universities had on their PA and remuneration systems (Remuneration and benefits, Salary Rules, Staff recruitment etc.), focus group and semi-structured interviews with academic leaders, and participatory observations within a case study in U1. The case study holistically analyses PM policies in U1 by using several methods and includes quantitative and qualitative evidence.

Quantitative methods included a questionnaire-based survey of AS in three university subunits – 13 questions and open questions (see Table 4). The author used the Kruskal-Wallis test for finding the differences in opinions of AS at different universities. The data from U1 was gathered over a period of 10 years, similar surveys were carried out in 2004, 2007 and 2013. The same survey was gathered at U2 and U3 in 2013. To determine the particularities of the aforementioned systems, a total of 108 AS were surveyed in 2013 and nine academic leaders were interviewed at their universities (subunits). Seven focus group interviews (the type of Delphi method discussions) were also conducted at U1. Descriptive statistics and correlation analysis were used to analyse the results obtained.

2. Literature review

2.1. PM in general

There are many definitions of PM. However, in principle it is defined as a process of measuring and developing the individual and the team performance; a set of PM practices with goal setting and planning, monitoring and feedback, appraising and remunerating of employees (Aguinis and Pierce 2007, De Andres et al. 2010). Some scientists have taken an even broader approach, incorporating topics like managing by values, empowerment and participative management (Mone et al. 2011, Biron et al. 2011), or organisational performance and leadership (Kivipõld and

Vadi 2013), or have associated it with creating a shared vision of the aims of the organisation (Decramer 2013), or emphasise the need to give equal prominence to leadership and management to achieve their objectives in schools and colleges (Bush and Middlewood 2013). PM is also an integral part of the managerial control system aimed at employee work activities and work results. It has developed into an exchange system of work-related information, where both employer and employee express their wishes and ideas towards creating mutually beneficial relationships. Special emphasis is on informal communication, which assumes a development of corresponding organisational culture (Miah and Hossan 2012).

The latest academic literature on PM has moved from the employee PA to a variety of HRM activities, where the importance of employee development and self-assessment are emphasised, which requires the creation of a suitable work environment (Decramer 2013, Gravina and Siers 2011, Edler et al. 2012, Haines and St-Onge 2012, Soss et al. 2011). Modern approaches of PM enable open and collective leadership and allow administrative control to be replaced with a system of feedback oriented to development. We can see a variety of approaches to the PA (see Table 1), but we want to concentrate on PA and remuneration and its interaction.

Table 1. PM components and relation to organisation performance (compiled by the author, sources presented in the table)

PM components and organisation performance	Author, year, survey
PM has moved from the PA to a variety of HRM activities and started the role of employee development; PM practices include goal setting and planning, feedback, appraising and remunerating of employees.	Aguinis and Pierce 2007, De Andres et al. 2010, Walker et al. 2010
PM is positively related to organisational performance; such relationship is stronger with adaptive capability.	Wang and Wang 2008 (103 Chinese firms)
PM associated with creating a shared vision, organisational leadership, managing by values, empowerment and participative management; the goal of PA is to increase performance and align the means of PA with strategic goals.	Decramer 2013, Edler et al. 2012, Gravina and Siers 2011
Results indicate positive associations between employee recognition and PM effectiveness; organisation culture, climate and strategic integration of HRM are also related to positive PM outcomes.	Haines and St-Onge 2012; 312 (Canadian private and public organisations)
PM system facilitators include strategic and tactical elements, involving senior managers in the process, clearly communicating performance expectations and formally training performance raters.	Biron et al. 2011 (16 world-leading firms)
Major activities include setting performance and development goals, providing feedback and recognition, building a climate of trust and empowerment, PM can be used to increase employee engagement.	Mone et al. 2011 (large corporation, other research)
Informal performance reviews have stronger relation to PM system effectiveness than formal performance reviews; the manner in which PM systems are shaped is very important for their effectiveness.	Dewettinck and Van Dijk 2013 (cross-industry, 3192 employees, Belgium)

The goal for measuring performance is to increase performance and align the means of PA with strategic goals of an organisation and to include goal setting and PA under the domain of PM (Walker et al. 2010, Stanton and Nankervis 2011). It also lays the foundations to strategic management and provides support to quality management and the creation of a learning organisation environment (Brudan 2010). PA enables the consolidation of work effort of individuals and teams for achieving strategic goals and must operate as a balanced system integrating the individual PM and strategic management on using a balanced scorecard approach also in education (Moreland 2009).

PA is a significantly narrower concept than PM, focusing on evaluating employee work activities and results in order to improve employee performance. Annual PA is an integral part of the managerial control system and primarily based on past performance. The latest literature emphasises the need to look beyond the appraisal's evaluative component and look at it as a two-component bundle, where the focus is also on developmental side of the appraisal process (Gravina and Siers 2011, Edler et al. 2012). Mone, Price and Eisinger (2011) have emphasised the need to look beyond measuring end results (outputs), but focus also on inputs and process. This course has replaced administrative control with substantive and multilateral monitoring and thus ensures the information is based on the so-called organisational control, which is defined as "... engineering human behaviour in organisations to be fit for purpose" (Kindsiko 2014:58). Williams, Rayner and Allinson (2012) believe that PM success depends on how competent and committed the leaders of an organisation are and to what extent it can be linked to changes in the organisational support for employees. Studies show that the involvement of senior management and their support to PM is crucial (Biron et al. 2011, Dewettinck and Van Dijk 2013). The author of this paper shares this view, his opinion is based on his research at the U1.

The author poses the following hypothesis **H1**: *The detailed and annual PA of AS is necessary.*

The prevailing trend in PM has been in linking PA with remuneration systems, which are mainly pay for performance (hereinafter PFP) or performance-related pay (PRP) (Heinrich and Marschke 2009). Many studies have shown that employee PM could improve overall organisation performance (Wang and Wang 2008, Crowell, Hantula and McArthur 2011, Haines and St-Onge 2012, Dewettinck and Dijk 2013). Some researchers (Laursen 2002, Atkinson et al. 2009, Gielen et al. 2010, Malik et al. 2014, Feng et al. 2014, Lucifora and Origo 2015) have found a positive effect of PFP systems on individual performance. Besides the motivational aspect, PFP systems are considered to have a signalling function to potential employees, emphasising organisations' willingness to pay higher salaries to those who have the capability to perform (Milanowski 2007, Gerhart et al. 2009). (see Table 2)

PFP systems are considered to have a positive impact on quantitative aspects of work, but a negative impact on the quality of work (Rosenhtal and Frank 2006). It is generally accepted that external fees undermine intrinsic motivation and reduce

Table 2. PA and remuneration relations with organisation performance and outcomes (compiled by the author, sources presented in the table)

PA and PFP relations with organisation performance	Author, year, survey
PRP stimulates labour productivity and maximum effort, and encourages the most able workers to apply for vacancies.	Gielen et al. 2010 (Dutch firms)
PFP results in higher levels of effort but inhibits creativity and innovation; the combination of tolerance for failure and remuneration for long-term success allows innovation.	Ederer and Manso 2012 (experiments)
Intrinsic interest does not appear to be harmed by PFP (PFIP); organisations that place greater emphasis on PFIP plans tend to have employees with motivation orientations matching their PFIP plans – this reduces the detrimental effect of PFIP.	Fang and Gerhart, 2012 (white-collar employees, 8 companies in Taiwan)
Long-term incentives are often ineffective in meeting their objectives; there is weak correlation between managers' remuneration and organisation's performance; wage differences must not be based on productivity but instead differences between individuals.	Pepper et al. 2013 (FTSE executives), Backes-Gellner and Pull 2013 (Germany)

creativity of employees (Fang and Gerhart 2012). The author's survey results indicated the same.

There is strong evidence that PFP has a positive impact on motivation, however, there are also negative implications present which are difficult to avoid (Gerhart et al. 2009). Some researchers have found that those problems can be compensated with other managerial tools if employees have a naturally high level of motivation and creativity (Malik et al. 2014, Atkinson, et al. 2009). (see Table 2) In the author's opinion, these results are controversial; objects and the PM systems are different and varied.

The author poses the hypothesis **H2**: *The PFP system helps to get positive results from individual performance.*

2.2. PM in universities

The education sector has been subject to a growing level of regulation by central government (Egginton 2010) and fundamental changes to academic work by mixing an increased market-driven transparency with accountability in institutional and organisation management, utilizing evidence-informed practice (Browne and Rayner 2015:292). In conditions of declining budgets and scarce resources in the public sector (and in the educational sector), there has been a need to implement more effective PM methods to control outputs and results.

The focus in managing universities is to improve their performance, but at the same time the autonomy of institutions is decreasing and the power of central institutions is increasing (James 2014). According to OECD reports, the majority of member countries have implemented PA and remuneration (PFP) systems as management tools in public organisation (Cardona 2007). This led to several positive trends – decentralisation of management, a larger scope of management and autonomy in decision-making, self-management and increased transparency of

activities (Melo et al. 2010, Bogt and Scapens 2012, Browne and Rayner 2015). Estonian universities have great levels of autonomy in selecting and remunerating its AS (similar to high levels found in Sweden, Switzerland and Czech Republic); Estonian universities' financial autonomy and economic independence is one of the highest in Europe, on a par with England and Luxemburg (Estermann et al. 2011).

All aforementioned trends have sharply increased the need for new professional managers and resulted both in increased managerialism and decreased dominance of classical managerial roles (Bogt and Scapens 2012). Several dilemmas have been established in the implementation of PM and PA – verification of performance measures, transparency in public provision of information and actions taken to meet those goals (Zia and Koliba 2011). These problems are magnified if PA is conducted hierarchically and becomes distorted, so that rather than having a motivating effect, it results in demotivation and loss of job satisfaction (Pascal and Marschke 2008).

Some studies have shown that PA inhibits the creativeness of both teaching and research (Bogt and Scapens 2012), and increases the authority and power of non-academic staff (managers) in decision-making and decreases the voice and freedom of AS (Melo et al. 2010). Some studies have shown that PA increases the effectiveness of teaching and research. (see Table 3) In author's opinion, these results are controversial; objects and the PM systems are different and varied.

The traditional approach to PA has been criticised as not keeping pace with the move towards more professional management (Sousa et al. 2010, Maillard and Savage 2012) or the move towards participative organisations, which has led many organisations to adopt newer PA systems that use multiple feedback (e.g. 360-degree) systems. PA requires the creation of a feedback system, including appraisal and development interviews in the organisations. Budworth, Latham and Manroop (2015) recommended the use of a feedforward interview as opposed to a traditional PA interview; feedforward interview should enable to increase the PM of organisations. The author of this paper shares this view, his opinion is based on his research at the U1.

The author poses the hypothesis **H3**: *PA requires the creation of a feedback system, including development interviews.*

The main problems are attributable to the usage of individual-based PA, which have helped to increase the quantitative aspect of work, but at the expense of quality, innovation and commitment of AS. Besides that, the academic atmosphere was weakened as people started to focus on quantitative aspects of their work and were less willing to contribute to other aspects crucial for the development of the university. All this has led to the increased number of publications, especially in journals ranked higher by university performing appraisals and have led, according to Gil-Anton (2011), to a lower quality of those publications. Academic atmosphere may be diluted as people have started to focus on quantitative aspects of their work and are less willing to contribute to other aspects for the development of academia.

Table 3. PA and remuneration (AS and teachers) relations with organisation performance and outcomes (compiled by the author, sources presented in the table)

PA and PFP relations with organisation performance	Author, year, survey
The use of merit pay is increasing in universities; merit pay had a positive effect on faculty performance in teaching, research, and service; relations between teacher incentives (merit pay) with student performance (test scores) could be due to teacher incentives eliciting more effort from teachers.	Schulz and Tanguay 2006, Terpstra and Honoree 2009, Figlio and Kenny 2007 (USA, Canada)
Teachers' experiences may be the dominant influence on attitudes towards PFP; young teachers favour PFP higher than experienced teachers.	Milanowski 2007 (USA university)
PFP can generate powerful motivation effects; PFP depend on the circumstances and the organisation; individual and group PFP may be beneficial for some objectives, but detrimental to others.	Gerhart et al. 2009 (USA, education, metaresearch)
PA and PFP enable motivation of AS (research and teaching) during the growth period of university, and create conflicts and dissatisfaction amongst employees, and decrease innovation.	Türk 2010, Türk 2008 (Estonian universities)
The nature of academic work has undergone substantial change over recent decades; PRP practices are likely to be effective in a higher educational institution.	Harkness and Schier 2011 (Australian universities)
Total teacher effort rose following the introduction of PFP; it is difficult to use one assessment system.	Neal 2011 (metaresearch)
Management-by-results is in conflict with intrinsic motivation and has a negative effect on motivation; creative work in universities is essentially intrinsic motivation.	Kallio and Kallio 2014 (3 Finnish universities)
Fundamental changes to academic work by mixing an increased market-driven transparency; English policy discourse in higher education is putting students at the heart of the PM system.	Browne and Rayner 2015 (England, higher education)

Besides research quantity or quality, many universities also use student assessments as bases for PA and as Browne and Rayner (2015) write “putting students at the heart of the system has led to an increasing use of managing by performance smart-data”.

However, the validity of those evaluations according to Jones, Gaffney-Rhys and Jones (2012) and Clayson (2013) is relatively low and prone to cognitive biases, so the general suggestion is not to use this data as a base for remuneration systems. Research has found that a first impression had a great effect on the score of student evaluation, additionally the use of humour, clarity, appearance and personality of lecturers is of great importance in regards to the results of students' evaluations, thus the quality of these evaluations is highly questionable and they should be handled with care (Symbaluk and Howell 2010). These results are controversial; objects or research are different and varied.

The author poses the hypothesis **H4**: *The student ratings used for evaluating teaching quality are not sufficiently reliable.*

While a business organisation's main objective is profit and it is easy to measure, the goals of universities are not easily measurable. Evaluations of

academic activities and outputs (teaching and research) are based on measurable quantitative measures and the usage of not easily subjectively evaluated qualitative measures. For example Okas et al. (2014) show that experienced teachers placed emphasis on the role of educator – professional teachers must be good communicators and willing to cooperate with colleagues and students. Sutrop (2015) has argued that teacher's professionalism includes a value educator; in order to advise students to reflect those values, the teacher must acquire the same values. The author's survey results indicated the same, but this is difficult to assess. One of the possibilities in appraising AS is in the multitude of goals and targets that academia needs to meet as a result of multitasking, that is, the simultaneous effect of different activities aimed at improving performance (Nannerup and Olsen 2014). In the author's opinion, this is difficult to achieve.

For example Mingers and Willmott (2013) have emphasised that AS do not engage in developing performance, but rather in shaping performance, for example, to publish a needed number of articles. The manifestation of this trend has increased the number of articles with controversial results that in turn reduces the value of the papers. These trends are particularly visible for junior researchers who do not have tenure and who are therefore more exposed to the pressures of distorted PM systems (Lukka 2010). To reduce this negative tendency, indexing of journals has commenced and is adopting different systems in order to calculate the impact of the papers. The author's survey results indicated the same, but this is difficult to assess.

In order to decrease the negative aspects of quantitative measurements, British universities have started to combine PA with a greater degree of academic freedom and development and have introduced qualitative-measures systems, for example, EFQM (Bogt and Scapens 2012). Improving the management of universities, concentrating on competences and quality management systems are a prerequisite for raising the quality of higher education as a whole, including in Estonia (Heidmets and Vilgats 2012). Subunits of universities have great levels of freedom and rights to shape their own quality management systems, taking into account the high standards and publication specifications of the high rated international journals and considering the external opinions given to the specific published articles.

This step, however, calls for an increase in subjectivity in appraising the AS and for the introduction of the judgemental types of PA systems. This in turn enables a reduction in the weight of the objective and quantitative indicators of teaching and research and their negative impact on the quality and innovation. At the same time, some of the objective indicators (for example, grouping of scientific journals based on their level) are seemingly objective, but in practice and essence subjective indicators (Bogt and Scapens 2012), whilst judgemental PA systems are not protected against quantitative evaluation criteria bias towards past performance. New PA systems seem more judgemental, but pose a threat to performance development systems and inhibit creativity and innovation in the teaching and research process. Still, judgemental indicators are seen as one way of

establishing a practical instrument for providing early signals about changes in performance (Hallin et al. 2012). The author's survey results are similar.

The author poses the hypothesis **H5**: *The PA system of AS research based on detailed indicators does not guarantee the quality of the publications and research.*

3. Results and discussion

3.1. AS opinions of PA and PFP at U1

The PM of AS in U1 is based on a work contract (every three to five years) and on the detailed-indicator-based annual PA system, where since 1995 a unique PA and PFP system of the AS has been utilised. While AS are guaranteed the university's minimum salary by contract, the final pay is still determined based on the teaching load, research and publications, and management activity. The performance ratings are directly linked to remuneration, culminating in annual development interviews and salary negotiations. Funding of the U1 subunits and AS appraisal and remuneration policy is transparent; this system has been developed each year in cooperation with AS.

The teaching load is based on the number of papers defended under the supervision of an academic person and the amount of contact hours. The latter is adjusted depending on the level and language of teaching. The number of publications is taken into account during the last three years, adjusted depending on the place of publication, with the aim of appraising the quality of the research (research is grouped into 30 groups; the difference in weights is sixty fold).

The quantitative PA and PFP system has motivated the AS to do more work. In the course of a study in 2011, AS members of U1 estimated their work time as an average of 58 hours a week (taking into account all the activities related to the position), which enabled to pre-emptively increase AS salaries. In this decade, the workload of the AS has decreased due to a reduction in student numbers (due to demographic changes). This development was further influenced by new state policies, which brought about a steep decline in fee-based higher educational places on offer. This change has caused severe budgetary restrictions to U1 and a stabilisation in the salaries of AS. Such a workload causes frustration and a negative effect on the motivation and satisfaction of the work. Some members of the AS adapt quickly to the situation and, for example, seek opportunities to earn extra money with easier publishing. Although annual adjustments of the PA allow the reduction of abuse of the appraisal system, it remains a serious challenge and source of ineffectiveness. For example, some members of the AS shape performance, "play safe" and avoid controversial topics; this finding is similar to that of Mingers and Willmott (2012).

The shortcomings become amplified; AS are increasingly concerned with the complexity, administration and resource-intensity of the system. However, despite the complicated system for PA, it had paid dividends over many years, but it started to slow U1 development, and dissatisfaction with the current system has

increased in this decade. Despite the broad-based discussions and democratic decision-making processes, an increasing number of AS consider it a hindrance to cooperation and prone to incite conflict.

AS criticism of the PM system has increased since the beginning of the economic crisis. AS claim that for many years they have done more work for the same money. Some teachers also decry the high teaching workload and insufficient motivation, which is also negatively influenced by the uneven distribution of academic workloads. The existing PM system motivates spending financial resources, and does not encourage procuring resources. Many members of AS have focused on raising their own performance rating and increasing their remuneration. They have not paid sufficient attention to developing their abilities and that of their subunits; this needs to change. The measures applied for raising the quality of the work have enabled to reduce the one-sided effect of the quantitative evaluation system. These situation are primary due to economic and demographic crisis and these opinions expressed in the AS surveys and interviews.

AS members believe that the annual PA system is necessary and important but that it is "...very detailed and cumbersome and needs to be simplified." Managers should talk more frequently with AS and "...a development interview held once a year cannot replace it". Many AS feel that insufficient attention to quality is a problem, above all with regard to teaching work. Opinions vary diametrically in some cases regarding feedback from students. Twice yearly student feedback tends to be representative; the majority of the AS accept the student ratings as personal feedback and consider these a good source of background information, furthermore, these feedbacks enable to determine the "problem" subjects and teachers. However, some of the AS see the use of student reviews as a component of the PA as a threat to quality of teaching – "...popularity of the teacher and quality of teaching can be different." It is emphasised that drawing specific conclusions and implementing measures requires a deeper analysis in each situation (including direct conversations with students and visits to the lectures by colleagues).

It also became evident that an "...annual review of teaching is considered to be too short a period" and "a reasonable period would be 2-3 years." Constant changes in PA indicators are also disapproved of – we only recently "were ETIS¹ proponents, now we proceed from the impact factor of publications." PA in regard to publications "...has become devalued and the system promotes sloppy work or working to one's own detriment", likewise, "there could be more value placed on high-calibre research articles, not so much chapters in science books."

The measurement of the levels of fulfilment of the qualitative objectives for the purpose of PA is complicated. This includes, e.g. "serving society and top-ranked achievements," which would allow AS to deviate from the main goals. U1 has started to manage indicators and "... the system for evaluating performance has freed managers from actual managing". Directly linking performance to remuneration "... the salary gap among employees is too great" and there is also a need for

¹ Estonian Research Portal, the publications are grouped in 22 groups.

more “recognition and value accorded to employees who work in a dedicated fashion for modest pay.” There is a greater desire to follow “requirements established for different positions” and establish a “ceiling” for teaching for professors and associate professors “so that they would have enough time for R&D”. This would allow deviations from quantitative assessments to be reduced and place more value on quality work in the form of non-monetary recognition. Some members of the AS pointed out the lack of non-monetary motivational techniques, especially in conditions of economic crisis where budgetary limitations have ruled out pay raises.

In addition to the abovementioned shortcomings, several paradoxes (polarised opinion) were expressed. The most conflicting opinions are: 1) the PA system is too detailed, versus all activities and results are not sufficiently considered, and 2) employees’ low sense of job security versus the need for rapid changes. The conflicting opinions point, on the one hand, to different interests and goals, and on the other, they signal frustration among some AS. Some of the AS accuse the PM (PA and PFP) system of causing their workload to increase, but fail to consider the global reasons behind it. At the same time, in both 2007 and 2013 U1 AS continue to support the use of a remuneration system based on quantitative PA, and opinions from AS have become more uniform (see Table 4).

Table 4. Perceptions of PA and PFP systems of AS in U1, U2 and U3 in 2007 and in 2013
(scale: 1 - not; 2 - rather not; 3 - rather yes; 4 - yes)

Questions	U1		U2	U3
	2007	2013	2013	2013
Annual PA of academic staff is necessary	3.5	3.3	3.2	3.5
I am sufficiently informed about the PA system	3.3	2.8	2.4	2.2
The PA system should be further developed based on a quantitative PA system	3.2	2.2	3.3	3.0
PA results should be directly reflected in remuneration decisions	3.0	3.0	3.2	3.0
PA should conclude with development interview	3.3	3.3	2.4	3.1
The significance of qualitative measures of teaching should be increased in remuneration systems	–	3.0	2.8	2.7
The student feedback should be used as a quality-component when making remuneration-related decisions	2.2	2.6	2.2	2.3
The salary-related appraisals should be supplemented with additional criterions measures (e.g. grants received)	2.8	2.9	2.8	3.0
The system for evaluating publications should be simplified	2.3	3.1	2.6	2.6
The system of remuneration should incorporate all aspects of work	–	3.2	3.2	3.1
I am sufficiently informed about the outputs of my performance that are going to influence my salary	–	2.8	2.6	2.8
The remuneration system should be based primarily on nominal work hours and position-based pay	2.4	2.5	2.1	2.3
The remuneration system should be based on significantly simplified PA system	–	3.3	2.8	2.8

Seven focus group interviews were formed to develop the U1 PA system and proposed to prepare a PA system based mainly on qualitative indicators. The latter was used as the basis for developing a new model (indicators) for the PA, for example of professors': (1) the quantity of teaching on the doctoral level, (2) defence of doctoral dissertations and master's theses supervised by the professor, (3) student ratings in all subjects, (4) receiving research grants and taking part in projects, (5) publishing in top-ranked journals, (6) Google Scholar H-index, (7) social visibility and service to society. The same principle would be followed for developing performance review indicators for employees in other academic positions.

When a PA system based on qualitative criteria was proposed in the course of PM and PA reform in 2013, many members of AS changed their opinion and once again supported the quantitative PA system. One reason for this is the increased indefiniteness spawned by the new system in conditions that were already unstable due to the economic crisis and contraction of the education market. The old quantitative PA system was seen as a key guarantee for ensuring one's interests, while qualitative PA was associated with subjective assessment. The increasing of the share of qualitative indicators inevitably led to a significant increase in the subjectivity of PA which most AS did not favour or were not willing to accept as a basis for developing qualitative systems for evaluating the performance of AS.

3.2. The particularities and effectiveness of the PM systems of U1, U2 and U3

The AS professional suitability and performance are evaluated at Estonian universities mainly at the time of the candidate's application. Additional thorough PA systems are rarely utilised – systematic and thorough annual PA of AS is used only in some subunits at Estonian universities and has been organised most comprehensively at U1.

The **first hypothesis**, *the detailed and annual PA of AS is necessary*, was supported. Descriptive statistics and interviews show that AS requires annual PA; this is significant part of evaluation of the AS. The AS attitudes towards the necessity of the PA are positive (averages in U1, U2 and U3 3,2-3.5). (see Table 4)

The attitudes of AS towards PA systems vary, with U2 AS (as opposed to U1) desiring further development of a quantitative indicator-based PA system (averages 3.3 and 2.2 respectively; p-value 0.0). The desire of U1 AS to develop a PA system has diminished sharply – there was a much greater preference for this in 2007 as compared to 2013. U1 AS would like to simplify the quantitative PA and PFP system and have greater reliance upon position-based salary (see Table 4). In the position, where assistants and lectures (versus researchers and senior researchers) are in favour of developing the quantitative evaluation system (averages 2.5 and 1.6 respectively).

PM of the AS requires the PA to be linked with remuneration, and this varies widely from one university/subunit to the next. While the remuneration of U1 AS proceeds directly from their PA, at U2 and U3, the links between PA and remuneration are markedly more modest, where results and quality of work is

generally taken into account only in the process of deciding the appointment to the position. The AS at all university subunits believe that PA should be directly linked to remuneration (average 3.0–3.2). At both U1 and U2 there are significant correlative relationships between the need for development of PFP system (performance rating must be directly related to the remuneration) and quantitative PA system (R 0.52 and 0.45 respectively; see Table 5).

Table 5. Correlations between different aspects of PM of AS in U1 and U2 in 2013

Questions	I am sufficiently informed about the system of PA		I am sufficiently informed about the outputs of my performance that are going to influence my salary		PA results to be directly reflected in salary decisions	
	U1	U2	U1	U2	U1	U2
University						
Annual PA of academic staff is necessary	.46**	–	.42**	–	–	–
System of PA should be further developed based on quantitative PA system	–	–	–	–	.52**	.45**
I am sufficiently informed about the system of PA	x	x			.32*	–
I am sufficiently informed about the outputs of my performance that are going to influence my salary	.86**	.53**	x	x	.31*	–.44**
PA results to be directly reflected in salary decisions	.32*	–	.31*	–.44**	x	x

** Spearman correlation is significant at the 0.01 level;

* Spearman correlation is significant at the 0.05 level.

The second hypothesis, the PFP system helps to get positive results from individual performance, was partly supported via the AS surveys, interviews and participatory observations within the framework of a case study in U1. The quantitative component of PA of AS at U1 enables the measurement of “visible” activities – teaching load (in contact hours) on different stages of study and defence of doctoral, master’s and bachelor’s theses supervised by the AS.

It was evident from the (focus group) interview results that while U1 AS understand and accept past-based PA, the AS at other universities have a markedly lower acceptance of this. In the latter institutions, the lag in remuneration compared to work done is criticised, including also in the case of development activity.

The universities’ AS are most supportive of the implementation of indicators characterising the number of contact hours and the number of papers defended

under academics supervision, depending on the level of study and language (see Table 4). For instance, U1, U2 and U3 AS provide PFP for supervisors of successful defences of doctoral dissertations, at an average rate of more than the monthly salary earned by the supervisor.

To assess the quality of research publications, the publication source is used. Publications receive the most detailed evaluation based on the publication source at U1, while at U2 and U3 the evaluation is limited to the most general ETIS classification. Compared to U3 and U2, U1 AS have a much greater preference for simplifying the publication system used, which shows that excessive detail does not necessarily ensure employee satisfaction. The AS at all investigated universities would like an increase in the weight given to qualitative indicators. AS at U1 favour the implementation of a remuneration system based on salary grades and the development of a much simpler PA system as a basis for remuneration. They want to increase qualitative indicators and have a greater acceptance of objective indicators for assessing teaching quality. (see Table 4)

It is crucial how thoroughly AS have been informed about PA and how salaries (PFP) are determined. There is a very strong correlation between these aspects at U1 in contrast to U2 (see Table 5). The level of information given to AS regarding PA (including ratings assigned to staff) and determination of salary is one requirement for ensuring a sense of justice. Based on the above, the AS desire to use a quantitative PA system for evaluating performance is understandable – above all at U2 and U3, where there is no experience with the negative manifestations of such systems.

The effective implementation of PA requires the AS to participate in developing the systems or that at least they be kept informed of the special nature of the PA system. The extent to which U1 AS are informed regarding the particularities of PA and remuneration is, thanks to their participation in managing the faculty, relatively high compared to staff at other universities and subunits. At the same time, dissatisfaction has increased in the last decade regarding information in the field of PA and remuneration. While data from a survey carried out in 2004 according to Türk (2010) showed that 20% U1 AS were not satisfied with sufficiency of information on PA, in 2007 the figure had risen to 28% and in 2013, 36%.

AS require information about their appraisal system and they require information about the outputs of their work that influence their salary. Informing AS about the PA system is positively related to AS opinions about the need of PA system (*Annual PA of AS is necessary*) in U1 ($R= 0,46$; see Table 5). The correlation analysis did not indicate statistically significant relationships between these aspects in U2, which is due to the lack of annual evaluation of AS in U2. AS involvement in the process of creating PA system are positively related to AS opinions about reliability and openness of PA system in the U1.

The prerequisite for effective implementation of PM is the involvement of the AS in PA and in the development and implementation of the remuneration system and transparent budget policy. The budget process of U1 is more decentralised and

more transparent and has been delegated to the level of subunits. The budget process takes place along the same principle as the evaluation of AS performance and it depends on whether the indicators are for teaching or research.

The **third hypothesis**, *PA requires the creation of a feedback system, including development interviews*, was partly supported via surveys, interviews and participatory observations in U1, U2 and U3.

Much depends on the practices used to conduct the surveys and development interviews on how representative they are. The practices used to implement these methods (qualitative ratings) and the reliability of the results obtained are greater at U1, where the suitability of these methods for PA of remuneration is considered more acceptable than it is by AS at other universities. The results of development interviews should focus above all on staff development and reducing control rather than the role of one-sided interviews. In implementing subjective evaluations, the focus should lie on employee development; however, objective indicators are the best basis for remuneration. Results indicate that at U2, where development interviews are rarely and incidentally used and AS lack positive experiences in regards to these interviews, AS show less desire to use them. (see Table 4)

The **fourth hypothesis**, *the student ratings used for evaluating teaching quality are not sufficiently reliable*, was partly supported via surveys, interviews and participatory observations in U1, U2 and U3. The results of student surveys are not considered trustworthy enough and some of the AS believe that students are not qualified to rate teachers and base their assessment on whether they like the teacher's personality (see Table 4). Rating teachers can also be manipulated and used to "pay back" teachers, such as for lower grades.

The studies conducted at U1 are somewhat more optimistic and allow, provided that a rigorous method is implemented, sufficiently reliable results to be obtained regarding the teaching quality. Such opinions are expressed somewhat seldom at U2, where there are markedly more problems in terms of representativeness of student surveys. The analysis of student ratings results should focus above all on staff development and reducing control, official feedback in providing a guide for AS activities. In implementing subjective evaluations, the focus should lie on employee development.

University student-assigned ratings are the means predominantly utilised for evaluating teaching quality. These should be seen as one possibility, the results are merely an indication and provide necessary input for development; however, no sweeping conclusions should be drawn on their basis. In spite of significant positive developments with regards to student surveys, various studies also point to the unreliability of student ratings (Jones et al. 2014, Clayson 2013), where first impressions and likeability of the teacher's personality play an important part (Symbaluk and Howell 2010).

The **fifth hypothesis**, *PA system of AS research based on detailed indicators does not guarantee quality of the publications and research*, was partly supported via an analysis of documentation, interviews and participatory observations in U1 and U2.

It is difficult to evaluate the quality of the publications of AS, but a clear link between PA of AS and publishing papers or textbooks can be detected (see Table 6). The leaders of university subunits found that recognition and rewarding AS on the basis of their higher publications positively influenced research activity. In order to keep the PM system from dominating and exerting a one-sided (above all quantitative) influence on teaching and research, it will be necessary to use also other management instruments, such as quality management.

The effectiveness of PM systems is difficult to ascertain, as AS performance depends concurrently on many other factors. Still, some relations are evident, for example, research publications and university textbooks and on the other hand, the annual PA and PFP systems of AS. At U1, where since 1995 an annual PA is used, an average of 115 original university textbooks have been published by approximately 50 members of AS. This is markedly greater than by other members of AS at others economics and business administration subunits in Estonia combined.

The higher ratings ascribed to top-ranked publications (through the sharp increase in weights) have ensured a rapid increase in the number of publications at U1 compared to U2 and other universities. According to ETIS classification, the 1.1, 1.2 and 3.1 type research publications (see Table 6) receive the highest rating, which are published in international journals with a high impact factor or as monographs (chapters of monographs) by internationally regarded publishing houses.

It is difficult to evaluate the quality of teaching and research of AS, and as results of the surveys and case study show, quantitative indicators did not guarantee the quality of work. Surveys, interviews and participation observations reflected the positive impact of PA and PFP for teaching and research only in U1.

Table 6. The number of publications published by AS in U1 and U2 in 2013²

Type of publication	1.1*	1.2*	3.1*
U1 1999-2004	6	40	46
U1 2005-2010	59	110	191
U1 2011-2013	45	103	80
U1 total	110	253	317
U2 1999-2004	7	22	30
U2 2005-2010	45	130	93
U2 2011-2013	36	225	108
U2 total	88	377	231

According to ETIS; author's calculations. Number of full-time posts AS in U1 (44 positions) and in U2 (113 position) in 2013.

² 1.1* – Scholarly articles indexed by Thomson Reuters Web of Science and/or by ERIH
 1.2* – Peer-reviewed articles in research journals with an ISSN code or of ERIH category
 3.1* – Articles/chapters in books published by the publishers listed in Annex, including collections indexed by the Thomson Reuters Conference Proceedings Citation Index

4. Conclusions

In the conditions of decreased availability of resources for higher education, the budgets of universities are under strain and they thus need to improve the usage of scarce resources by making steps to improve the effectiveness of management and adopting modern PM practices. By using simple PM systems, AS activities can be managed in a more robust way, which can be negative to internal motivation and the quality of the teaching and research. An extensive use of PA instrument combined with PFP can ensure the external motivation of AS. However, it has created excessive competition between AS that in turn results in reduced cooperation.

PM systems used in Estonian state and private universities have some similarities. These universities use profession-based PM systems that rely on a work contract which takes place in the majority of cases every three to five years. U1 additionally used a detailed quantitative PA and remuneration system for AS, which enabled to measure objective indicators – contact hours and number of master theses or dissertations mentored on different stages of study, the number of articles published in different outlets, etc. Detailed quantitative appraisal offers a solid base for PM and provides control over budgets and resource allocation. However, it is mainly a short-run tool and the introduction of qualitative aspects of appraisal needs to be implemented. It would be necessary to develop long-term goals – setting such goals would allow staff to focus their activities on raising the quality of teaching and research, based on the main goals of the university.

AS emphasised the need for improvement in the quality of research and teaching even in conditions of scarce funding. As the motivation to engage in knowledge work is primarily intrinsic, the usage of detailed quantitative measures in PM should be handled with care. The impact of PA should not dominate teaching and research; it is also crucial to use other management instruments, for example strategic management and quality management.

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