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New Developments in the Funding Model of Finnish Universities of Applied Sciences - A Critique

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Abstract

The Finnish higher education system has recently gone through many changes. There is a national government project in Finland aiming at making Finland the most educated nation by year 2020. The program also aims at improving the quality of work life in Finland to make it the best in Europe by year 2020. At the same time, the country has experienced a long financial recession where the state budget money spent in education has been cut. Improving the quality of education and work life at the same time as cutting the financing of education has put the universities of applied sciences as any other institutions of higher education in a situation where they are required to produce results that are more positive and/or better results with less costs. New performance-based higher education funding models where the state allocates funding based on the achievement of predefined objectives have been introduced for both traditional universities and universities of applied sciences. The effect of such funding model is very strong in a country like Finland, because in Finland there are, in general, no higher education tuition fees that higher education institutions could use to finance their operations. However, at the same time with the new funding model, introduction of tuition fees for the incoming students from non-EU/EEA area can be seen depicting a clear divergence from the long tradition for tuition free education in Finland. Admitting that Finnish higher education authorities are still deliberating and developing financial models, nonetheless, we depict, at the conceptual level, the impacts of the recently introduced funding model on the quantitative and qualitative targets of universities of applied sciences and their alignment to larger political targets set by the Finnish government.

Keywords: higher education, university of applied sciences, funding model, performance-based

1. Introduction

The Europe 2020 strategy states that the aim of educational policy in the EU is to increase the proportion of people having a higher education degree over 40% among the population in age groups 30 - 34 years old. Finland has set the target at 42%. [1] The education level of population (measured usually by calculating the proportion of those with a higher education degree of a certain age group) is connected to economic growth and increase of well-being [2] as desired by the Finnish government programme. The high level of education on the level of whole population in Finland has enabled the adoption of new technology, which in turn has been one of the key factors of the economic growth. On the other hand, there is a critical debate about the education policy aiming at a very high level of higher education where over education is a constant topic of discourse. [3]

Despite of the good reputation Finland has gained in international comparisons of education quality and education outputs, there is a growing perception in Finland that the country is losing ground in its knowledge producing capacity. In 2015, the Ministry of Education and Culture in Finland ordered a study on the functionality and performance of Finnish higher education system with international comparisons to some other countries with the same kind of higher education system. [4] This study serves as a starting point for our considerations on performance-based funding as well as a quest for further research made by Kettunen [5]. He conducted a research on the performance-based funding schemes of universities in Finland and suggested that it would be worth of further study to analyze the funding in the sector of the Finnish universities of applied sciences (UAS), which have adopted a new performance-based funding scheme at the beginning of 2014. This paper concentrates on the funding model of UAS by analyzing the effectiveness of performance-based funding

model and providing critical aspects on the functioning of the funding scheme. The aims of performance-based funding and performance agreements are to boost productivity, increase quality and performance, and enhance accountability and transparency. In Finland, the government has reported progress in strategic profiling, cost and performance awareness and dialogue after the adoption of performance-based funding model. [6] However, the effectiveness of performance-based funding has been questioned by prior studies [7, 8, 9, 10]. In many countries, performance-based funding schemes have largely failed and have been uneven and unstable, as they tend to reduce the scope of strategic planning and the autonomy of higher education institution (HEI) [5]. It has also been evidenced [6] that in countries with longer tradition with performance agreements such as Finland, performance-based funding models linked directly to performance agreements tend to show a shift from comprehensive contracts to more narrow and focused agreements.

2. Literature review

Investments in education and research have traditionally been quite substantial in Finland. For example, in 2015, Finland invested 6.4% of GDP in education comparing to EU average 4.9%, and 1.7% for higher education comparing to OECD average 1.1% [11, 12], but due to state budget cuts, the spending has been diminishing during the past years. However, with current level of education, Finland meets both the EU target and the national target with proportion 45.5% of population having a higher education degree, which is among the highest in the EU, comparing to EU average 38.7%. The employment rate of those with higher education was 81.1% in 2015 [12], but the goal is to use the resources of science and research in a more efficient and effective way [13]. This has made the HEIs to look for new methods of financing. From 2017 on, tuition fees were introduced for the incoming students from non-EU/EEA area ending the long tradition for tuition free education in Finland. At the same time, it is worth of noticing that there is no tradition of alumni-based financial support in Finnish higher education institutes. However, from the beginning of 2018, the HEIs were granted a permission to collect donation money (where every euro collected is linked to extra monetary support from the Ministry of Education and Culture) from business life, but there is yet no data available on the influence of these donations.

The evidence prior research [4] has produced suggests that the Finnish higher education system is generally well functioning and well performing. Before 2014, the funding model of UAS was based on costs, which did not motivate to increase effectiveness but rather, it motivated to increase the costs [14]. Now, the UAS have become independent legal entities (non-profit registered limited companies) and the responsibility of their core funding has been transferred from local authorities to the state. This has required a change in legislation. At the same time, the number of UAS has declined through mergers and the pressure for further consolidations continues. As to the size, the UAS vary from 1 200 to 16 000 students. [4]

The reforms above have led to many improvements in Finland's higher education sector. They have provided HEIs with an independent legal status and improved their governance systems. However, at the same time, there are many problems. Finland is losing its competitive advantages based on highly educated workforce and innovation capacity. The duration of studies is among the longest in the OECD countries. The transition from school to higher education and to the labour market is slow. The learning outcomes at the school level education are declining. The population is ageing. Internationalization of higher education and research remain key challenges. The research output suffers from the fragmentation, lack of large-scale research infrastructures and absence of big national goals. Finland also has a dense network of knowledge producing organizations which, compared to a small and ageing population, appears to be quite profound and makes the higher education system somewhat fragmented and weakly profiled. Nonetheless, there is no empirical evidence that a system with a few large units is more efficient than a system with many smaller units, or a system with both a few larger units and several smaller units. There is a unanimous opinion in Finland that the number of institutions should be decreased, education needs modernization and internationalization and the whole innovation system needs to be made more effective in its ability to transfer knowledge if the country is to achieve the targets it has set in terms of international competitiveness, improved performance and in its ability to create new jobs. [4]

Estimating the productivity of knowledge work such as education is not easy. Traditional productivity measures are usually unsuitable for measuring the productivity of knowledge work due to the complex, intangible and individual nature of knowledge work [15]. It has been proposed that in the case of knowledge work productivity measurements should concentrate on subjective approach on actual working processes because other productivity output measures are too challenging [16, 17]. Quantity of outputs is seldom mentioned in the literature; quality of employees, innovation capability, learning and the outcomes perceived by

customers are usually considered more important [15]. Continuous improvement of knowledge work productivity can be seen an open-ended process where an organization adapts to changing circumstances and conditions. The process is usually seen taking place from the bottom up. This way to describe the process takes the emergent approach instead of a planned, top-down approach. [19] However, it may be that there is a need to balance the emergent approach and planned approach, i.e. the learning and planning processes, which gives the management the shaping role instead of pure controlling. [20]

The shaping role approach can be used to describe the way Finnish HEIs are steered by the Ministry of Education and Culture. HEIs enjoy extensive autonomy in organizing their instruction and academic year. Their operations are built on freedom of education and research. The higher education sector is steered through higher education legislation, national development plans for education and research, performance-based funding, performance agreements, which are legally binding, and quality assurance measures. The national development plan for education and research, based on forecasting future demand of occupation and skills, is adopted every four years by the Finnish government. A 4-year agreement between HEI and Ministry of Education and Culture defining the qualitative and quantitative targets and determining the resources required is negotiated. [21, 22, 15] The multi-annual time frame is expected to guarantee stability, security and confidence [8]. The agreement also defines how the targets are monitored and evaluated. The HEIs themselves decide on administration, student admission, contents on study programmes and state funding. [21, 22, 15]

The UAS are required to have a government-granted operating license. Finland has no higher education accreditation system but instead, the HEIs are also responsible for the evaluation of their own operations and outcomes. In this task they are supported by a national body (the Finnish Education Evaluation Centre) that is responsible for developing the quality of education, they can invite external accreditation agencies such as EFMD (EPAS). The UAS are audited regularly using thematic system-based external evaluations that form the basis of the national evaluation and quality assurance system. In addition, each institution has been obliged to create its own system and is responsible for the quality and continuous development. The evaluations are always developmental in nature and aim to help institutions improve their operation, but the result of quality assurance has no significance in the funding model. [4]

As de Boer and Jongbloed [6] point out, it is often a matter of taste what counts as performance. They argue that performance is goal- or problem-oriented, result-based and measured against pre-set standards that are the result of a political decision, a negotiation process among stakeholders, or a benchmark (where a standard means doing better than others). Performance agreements can have aims such as encouraging institutions to strategically position themselves (institutional profiling), establishing or improving the strategic dialogue between the government and the institutions, improving the core activities of the institutions (higher quality of teaching and research, higher levels of productivity, or securing minimum standards), increasing the efficiency of the institution's activity and specifying targets and indicators related to completion rates, drop outs, or time to degree is an example and informing policy makers and the public the institutions' individual performance in return of public subsidies (accountability and transparency). The measures typically used as indicators of productivity in different countries are the number of degrees produced, number of study points, exam results or time spent in studies. Other less used measures are those connected with employment, internationalization of teachers and students and student feedback. Measures typical for research and development activities are usually connected with the number of publications and external funding. [6]

3. Data and method

This study attempts to describe the performance-based funding model of UAS in detail describing both its quantities as well as its contents and to give an interpretation and subjective understanding on the implications of adopting the funding model with some critical perspectives. The study benefits from prior developments and relies on case study method presented by Yin [23], where focus is on contemporary phenomenon with real-life context and no control is required on behavior events. The purpose is to illuminate a set of decisions – the reasoning behind them, the way how they were implemented and the results they produced [24]. The data is collected from working papers, official archival records and documents and from Education Statistics Finland, and it describes both the contents of the model and the monetary values connected to it. The first set of data describes the changes in state funding of UAS and their percentage changes from year 2007 to 2012 just before the funding model reform. The second set of data compares the period of funding model change including years from 2012 to 2015, which is a transition period for adopting the new performance-based funding model

including year 2014 when the performance-based funding model was introduced and year 2015 when all UAS started to operate as corporations under public law and financing responsibility was transferred to the state. The third set of data describes the effects of funding model since 2015 up to the present time. The analysis has been done by tabulations providing time-series analyses to show both absolute and relative changes. Finally, the total change between years 2012 and 2018 will be depicted. To ensure triangulation [25], three writers of this paper have evaluated the data.

In the new funding model, the result of any UAS is measured as an average of several indicators of three years and the measurements of each university of applied science are proportioned against the measurements of other UAS. The purpose of the model is to allocate the funding for those UAS that are more productive, efficient and influential than the average. The total amount of money is divided among the measurements based on their coefficient. The performance-based funding formula implemented for UAS is based on indicators (figure 1).

Universities of Applied Sciences core funding from 2017

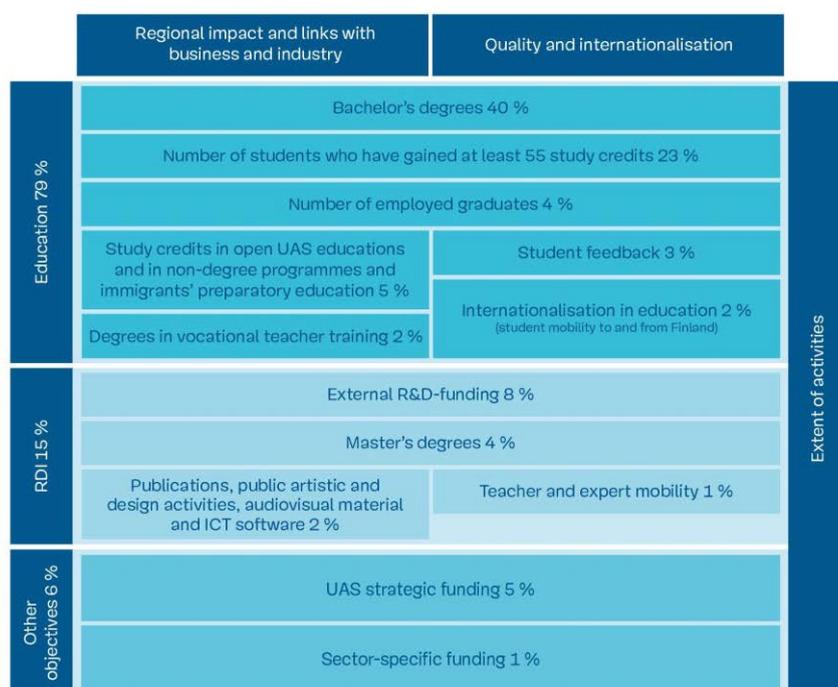


FIGURE 1. UAS funding model [26]

The basic funding is allocated to the UAS taking into account the impact and scope of operations as well as other targets of educational policy and RDI policy. The new financing model is based mainly on the amount of degrees produced and on the pace of proceeding of studies. The funding model is a matrix combining education, RDI and other objectives on the horizontal axis and regional impact and links with business and industry and quality and internationalization on the vertical axis creating a total of 13 criteria on their crossroads. Education, the main function, accounts for 79% of the total basic funding. Education is divided into the following metrics: the number of Bachelors' degrees achieved (as agreed upon for the period of the performance agreement and thus representing the upper limits for the performance funding) 40%, progress of studies (55 European Credit Transfer System (ECTS) credits annually to shorten the duration of studies) 23%, student employment 4% (those employed as entrepreneurs have a double coefficient), education in open UAS 5%, student feedback 3% (questions cover teaching and learning, international, multicultural and language learning activities, work life connections and tutoring, work placement, thesis and overall satisfaction), degrees in vocational teacher education 2% and international student mobility 2%. The RDI activities account for 15% of the total of basic funding and they are divided as follows: external funding raised 8%, number of Master's degrees 4%, number of publications 2%, faculty and staff mobility 1%. The policy objectives account for 6% where 5% comes from

strategic funding and 1% from sector-specific funding. The strategic funding emphasizes national higher education and research targets and the ability of a UAS to align its strategy with those targets. The criteria thus emphasize quick employment of graduates, social impact, regional impact and new research, learning and innovation environments among others.

4. Findings

The renewals on the UAS funding model started in the beginning of 2014, about 20 years after the establishment of UAS. The financing of UAS used to come from municipalities, but in the new financing model, it comes from the state budget. Until 2012, the amount of financing for UAS had a rising trend (table 1). [27]

TABLE 1. Basic funding of UAS 2007-2012 [31]

	2007	2008	2009	2010	2011	2012
Basic funding	758 000 000	837 000 000	876 000 000	907 000 000	922 000 000	965 000 000
% change		10.42%	4.66%	3.54%	1.65%	4.66%

From 2014, the financing has based on indicators, i.e. the results the UAS is able to produce. Due to gradual changes made in the funding system, the UAS lost their financing remarkable between years 2012-2015 (table 2). [17]

TABLE 2. Basic funding of UAS 2012-2015 [28]

	2012	2013	2014	2015
Basic funding of UAS	965 000 000	923 000 000	905 000 000	816 000 000*
% change		-4.35%	-1.95%	-9.83%

* VAT compensation not included

From the beginning of 2015, all UAS have operated as corporations under public law. Operations as an independent legal person are supposed to give the UAS a more independent status and more flexibility. This has implications to the leadership model and decision-making. Despite the corporal structure, the UAS operate as non-profit organizations and cannot pay dividend for shareholders or produce other financial benefit. [6] In 2015, when the financing responsibility was transferred to the state, the municipal share of financing accounting for 58.11% was cut. The state funding of UAS is calculated on basic funding and value added tax compensation. The basic funding is divided among the UAS based on their calculated output. 85% of funding based on output is defined based on the criteria relating to education and 15% of funding depends on the criteria relating to research and development. From the beginning of 2017, the share of strategic development in the total funding of UAS has been strengthened while, at the same time, the performance-based funding scheme has been ameliorated. [32] The state budget allocates 826 250 000 euros for financing of UAS for 2018. The figure has been declining during the past three years (table 3). The decline was 2.9% in 2017 and 1% in 2018. [29]

TABLE 3. State budget funds allocated to financing of UAS

	2016 state budget	2017 state budget	2018 state budget
euros	859 974 770	834 915 000	826 250 000
% change		-2,91%	-1,04%

*year 2015 state budget euros were 816 000 000

Since the renewal of the funding model in 2012, the UAS have lost approximately one fifth of their financing (figure 2) by now. However, the Education and Culture Committee of the Parliament of Finland has published a vision on higher education and research for year 2030, which states that the financing of UAS should be directed back to the growth trend to reach the targets expressed in the vision. The targets are, among others, to increase the amount of population with higher education up to 50% among those in age cohort 30-34 years. It is also desired to increase the progress in higher education studies. At the moment, 60% of age group starts higher education studies but, because of slow progress in studies, only 41% gets a degree. Another target is to decrease the number of HEIs but at the same time, to increase their level. In addition, there is a target that research, development and innovation funding should account for 4% of Finland's GNP. [11]

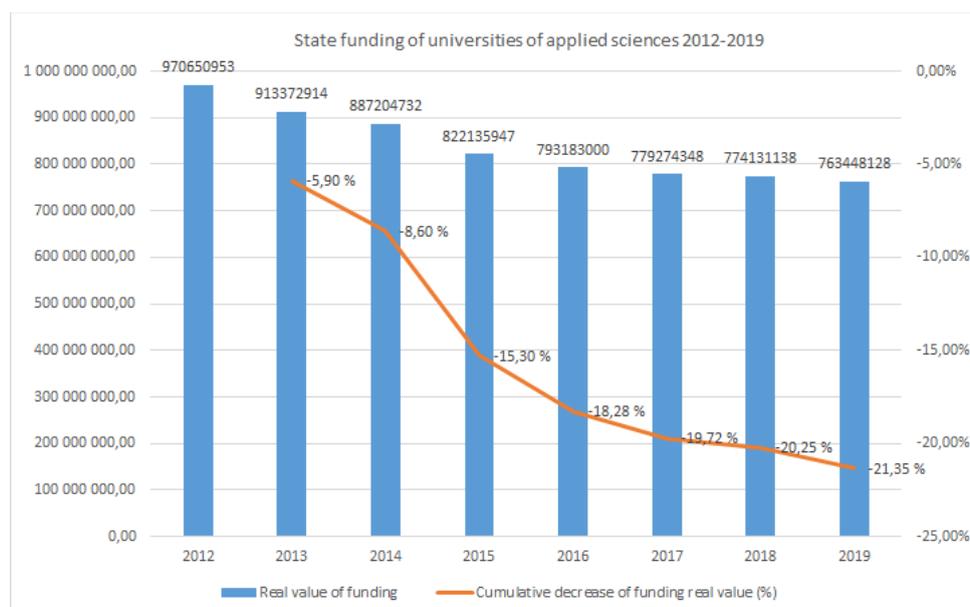


FIGURE 2. State funding decrease since the introduction of the new funding model of UAS [21]

The realization of meeting the targets set for UAS can be seen in table 4 [30]. The table also contains targets set for 2018, where the value for degrees has been calculated as an average of years 2017 – 2020. The cut of degree places in 2012 is reflected in figures describing the number of Bachelors' degrees. The figure shows a decreasing trend even though the internal efficiency has increased due to degree places cut. As to other measures, the share of students who have gained at least 55 study points has increased remarkably. Partly the improvement is due to the change made in the measurement. Originally, the measurement covered only those who exceeded 55 study points, but from 2017 on, it was changed so that the exceeding part of study points was transferred to following years.

TABLE 4. The key figures and quantitative targets for UAS

	2012 realization	2014 realization	2016 realization	2018 target
Bachelors' degrees	22 123	22 778	23 040	22 269
Masters' degrees	1 708	2 115	2 517	2 950
Degrees in vocational teacher training	1 740	1 849	1 795	1 600
Publications / person (teacher or R&D)	0.61	0.85	n. a.	1.20
% share of graduates 5 yrs. from starting	60%	60.3%	n. a.	60%
% share of students with 55 study points	51.5%	59%	62.6%	60%

5. Conclusions

The overall impression is that the model has increased efficiency of operations in UAS during times because the number of students and degrees produced have remained on the same level despite of funding cuts. As de Boer and Jongbloed [6] point out, despite that there is no compelling evidence about the relationship between performance-based funding and quality, productivity and efficiency in higher education; improvements in these three areas have been reported in the years following the introduction of performance agreements in Finland. The new funding model also appears to have contributed to an increased cost and performance awareness even if it has become evident that UAS allocate the money in a very different ways inside the organization. Some UAS use the strategic model as such while some others use totally different allocation basis. [31]

An overarching trend in European higher education governance has been to enhance the autonomy of the HEIs. However, this autonomy is debatable because performance agreements are just another way for the government to stay in control [8]. If the UAS want to collect as much funding as possible, it must follow the funding scheme as closely as possible. This way, the model can indeed limit the autonomy and strategic thinking. [4] In the case of Finnish UAS, as the share of each UAS is calculated on its relative performance and the performance-based funding formula allocates the state funding as a lump sum, this implies that UAS are put in a

position where they compete against each other. If any UAS improves its performance in any of the indicators more than others, it can increase its funding based on that criterion. In other words, it is possible to increase the financing only by improving results more than other UAS. This is reflected also by prior research [4] stating that the dual system has failed in creating co-operation between HEIs. De Boer and Jongbloed [6] also suggest that when serious amounts of funds are attached to the performance agreements, the game will change and institutions may be less willing to cooperate. Even small amounts of money can have a serious impact on institutional behaviour, while big amounts may have destructive impacts.

While efforts have been made to develop a more transparent and clearer funding formula to increase steering effect, the performance-based system with its 13 components with different coefficients is very complex. Melin and others [4] have explained this complexity, for instance, with the tendency of each government to bring new elements to the formula. They also point out that the influence of performance agreements has diminished due to the indicator-driven performance-based funding system. In the absence of allocation rules, the performance-based funding scheme may fail in increasing incentives, because teachers are in a very autonomous position where they may not be interested in general objectives of education policy if there are no personal incentives for them from the increased funding [5]. It is also possible that teachers are not primarily committed to quantitative targets that are far away from their scope of tasks but would rather commit to qualitative targets. In addition, it is not clear whether the university of applied science should emphasize all the measurements or whether it would be better to concentrate on some of the measures only. The performance-based funding models combined with the performance agreements have stimulated institutional profiling, which is desirable, but at the same time, they have failed to create a more diversified system and led to uncomfortable unity. This is understandable. If institutions are rewarded in the same way for the same outputs, as is the case in Finland, then they will inevitably seek the same ways of maximizing their income in the absence of explicit diversity objectives in the model. [6]

The funding model neglects the elements of quality. If the results of all UAS should decrease, it would be possible for one UAS to improve the results even with lower performance. One reason for the lack of quality elements offered by de Boer and Jongboed [6] can be the possible downsides because quality elements are usually less clear and transparent, the transaction costs are relatively high, and disputes may arise when the realization of qualitative targets needs to be assessed. A strong focus on quantitative measures has its appeal. They can be transparent and create a sense of objectivity. Assessment of quantitative performance measures is easy; what is measured gets done. In worst case, only what is measured gets done when institutions focus on quantifiable issues only and concentrate on easy targets or even lower quality standards to meet targets. Melin and others [4] suggest that the quality of both teaching and research should be the emphasis of the UAS rather than their regional role because the regional role emphasis has had many negative effects from scientific quality point of view and it is as strong knowledge producing organizations that they can play a better regional role in the future. Kettunen [5] also points out that an important challenge would be to study the motivation of students and personnel to stimulate improvements in the quality and efficiency of the teaching process.

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