An Implementation of Performance-Based Funding System At Individual Level: An Explorative Study

Abstract. Performance-based funding systems are designed to encourage research and innovation. These systems have been implemented in many countries at aggregated level. A university in the Republic of Ireland has recently adopted the Norwegian/Danish model and implemented it at individual level. This study aims to understand the impact of this implementation on research practices, including, but not limited to, choice of publication channels and local and international collaboration, as well as the perception and evaluation of the funding scheme with regard to transparency and objectivity.

Keywords: Research Evaluation, Research Practices, Bibliometrics

1 Introduction and Background

1.1 Performance-based Funding Systems – The Norwegian Model

Performance-based funding systems have been used in many countries for allocating resources. The evaluation of performance is primarily based on research outputs [1]. One of the systems is the Norwegian model, designed by the Ministry of Education and Research in Norway in consultation with the Norwegian Association of Higher Education Institutions (UHR). The Norwegian model has been adopted at the national level by Belgium (Flanders), Denmark, Finland, Norway, and Portugal [2]. According to Sivertsen [2, p. 79], the model involves the following components:

- A complete representation in a national database of structured, verifiable and validated bibliographical records of the peer-reviewed scholarly literature in all areas of research;
- A publication indicator with a system of weights that makes field-specific publishing traditions comparable across fields in the measurement of 'Publication points' at the level of institutions;
- A performance-based funding model which reallocates a small proportion of the annual direct institutional funding according the institutions' shares in the total of Publication points.

In "A Bibliometric Model for Performance-based Budgeting of Research Institutions," it is clearly stated that the Norwegian model is intended for use at aggregated level and not at individual level [3, 4]:

> "Secondly, but equally important, it must be emphasised that
> bibliometric statistics can only be used for determining research
> funding at a macro level. Bibliometric statistics cannot replace
> or simulate qualitative assessments and evaluations related to
> funding at other levels" (p. 50)

Sivertsen [2] has also stated that local use of the indicator "can be highly problematic, especially if the indicator replaces responsible leadership and human judgement" (p. 87). It has also been argued that the use of indicators in research evaluation would affect production of different kinds of knowledge [5] and that the indicators can also be used as a research monitoring device for comparison purposes [6]. Furthermore, rankings can be seen as disciplinary practices [7].

Whilst the long-term effects of Norwegian model are still in question [8, 9, 10], it is generally agreed and expected that the number of publication in prestigious channels and their impact will increase. The implication of performance-based funding systems on research practices, academic life, and knowledge production, however, has only been studied sporadically [6].

1.2   A Local Implementation of the Norwegian/Danish Model

In 2016, a university in the Republic of Ireland adopted the so-called "Danish Model," adopted from the Norwegian model, at individual level. The output-based research support scheme rewards individual researchers based on number of publications and supervision of doctoral students.

A "ranked publication channel lists" were created for all research areas, including peer-reviewed journals and academic book publishers. Each publication is ranked as level 1 or 2, largely based on the Danish ratings, but also factors such as journal impact factor and inputs from consultation with academic staff. Publication points are multipled by 1.25 for international collaboration, and 0.7 if there are two academic staff of the same institution on a publication.

The following table summarises the points for different types of publication at 'normal' and 'prestigious' levels.

Publication types	Points Level 1 'normal' (per publication)	Points Level 2 'prestigious' (per publication)
Books	5	8
Journals Article	1	3
Book Chapters	1	3
Conference Publication	0.5	2
Edited Book	1	3
Other Publication	0.5	2
Published Report	1	3

The main objective of the scheme is to increase number of publications in prestigious channels by providing incentives at individual level. Since the Norwegian/Danish model was designed to be used at aggregated level, the implementation of the model at

individual level in this Irish university presents an interesting case study and questions pertaining to the adoption of the Norwegian model. For example, are performance-based funding systems more effective at aggregated or individual level? What are the implications on research practices and knowledge production with an individual incentive system in place compared with a collective incentive system? How to ensure the construction of the database of publication channels to be fair and transparent? And how to enforce responsible management and leadership when research performance is increasingly evaluated based on indicators/metrics?

2 Research Questions and Methods

Arnold [11] suggests that the job of evaluation is to ask: (a) Are we doing the right thing (appropriateness)? (b) What are the results (impacts)? (c) Could we do it better (effectiveness)? This study aims to address these questions with a focus on the implementation of the output-based research support scheme and its impact on research practices.

A questionnaire will be sent to every academic staff in the university via post. Participants can choose to answer the questionnaire in paper form and return by post, or participate using an online form. The use of both analog and digital forms should encourage participation by ensuring anonymity as no personal information can be traced.

The questionnaire is designed to elicit responses in three major areas: (a) evaluation of performance-based funding scheme, (b) effects on research practices, and (c) 'side-effects' on academic life.

   a) **Evaluation of performance-based funding scheme** – Questions are designed to understand the degree to which participants agree with the transparency, fairness, and evaluation process of the construction of the ranked publication channel lists and the performance-based funding scheme.
   b) **Effects on research practices** – Questions are designed to understand the effects of the performance-based funding scheme, including publication strategies and channels, research agenda, and local and international collaboration.
   c) **'Side-Effects' on academic life** – Questions are designed to understand the side-effects, if any, of the performance-based funding system on academic life, including workload (e.g., balance between teaching and research), reporting and monitoring exercises, competition, and so on.

The questionnaire will be disseminated in mid-late October 2017. Preliminary results will be presented in the poster.

3 Summary

Performance-based funding systems are designed to encourage research and innovation. These systems have been implemented in many countries at aggregated level. A university in the Republic of Ireland has recently adopted the Norwegian/Danish model

4

and implemented it at individual level. This study aims to understand the impact of this implementation on research practices, including, but not limited to, choice of publication channels and local and international collaboration, as well as the perception and evaluation of the funding scheme with regard to transparency and objectivity.

References

1. Hicks, D. (2012). Performance-based university research funding systems. *Research Policy*, *41*(2), 251–261. http://doi.org/10.1016/j.respol.2011.09.007
2. Sivertsen, G. (2016). Publication-Based Funding: The Norwegian Model. In *Research Assessment in the Humanities* (pp. 79–90). Cham: Springer International Publishing. http://doi.org/10.1007/978-3-319-29016-4_7
3. UHR. (2004). A Bibliometric Model for Performance-based Budgeting of Research Institutions : Recommendation from the committee appointed by the Norwegian Association of Higher Education Institutions on assignment from the Ministry of Education and Research. Oslo: UHR.
4. Aagaard, K., Bloch, C., & Schneider, J. W. (2015). Impacts of performance-based research funding systems: The case of the Norwegian Publication Indicator. *Research Evaluation*, *24*(2), 106–117. http://doi.org/10.1093/reseval/rvv003
5. Whitley, R. (2011). Changing Governance and Authority Relations in the Public Sciences. *Minerva*. Springer. http://doi.org/10.2307/43548627
6. Aagaard, K. (2015). How incentives trickle down: Local use of a national bibliometric indicator system. *Science and Public Policy*, *42*, 725-737.
7. Sauder, M., & Espeland, W. N. (2009). The Discipline of Rankings: Tight Coupling and Organizational Change. *American Sociological Review,* 74(1), 63-82. http://doi.org/10.2307/27736048
8. Expert Group on Assessment of University-Based Research. (2010). *Assessing Europe's University-Based Research*. European Commission. Available at https://ec.europa.eu/research/science-society/document_library/pdf_06/assessing-europe-university-based-research_en.pdf
9. van den Besselaar, P., Heyman, U., & Sandström, U. (2017). Perverse effects of output-based research funding? Butler's Australian case revisited. *Journal of Informetrics*. http://doi.org/10.1016/j.joi.2017.05.016
10. Gläser, J. A fight on epistemological quicksand: Comment on the dispute between van den Besselaar et al. and Butler. Journal of Informetrics (2017), http://dx.doi.org/10.1016/j.joi.2017.05.019
11. Arnold, E. (2004). Evaluating research and innovation policy: a systems world needs systems evaluations. *Research Evaluation*, *13*(1), 3–17. http://doi.org/10.3152/147154404781776509