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## The effect of bibliometric performance systems on Danish economists and political scientists.

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### Introduction

A popular topic among scientometricians is the adverse effects of bibliometric performance systems, indicators or evaluations on researchers' behaviour. Bibliometric indicators seem loved by administrators and hated by researchers, though both parties seem to embrace and (mis)use them. A great example of misuse of indicators is the results of the introduction of national bibliometric indicator systems. These indicators are created to use at a macro-level to allocate research funds to the universities macro-level. However, they tickle down to a micro-level and are used to evaluate the individual researchers (Bloch & Schneider, 2016; Aagaard, 2015).

Several studies demonstrate that the usage of these bibliometric performance systems influence how researchers publish, especially in the social sciences and the humanities (e.g. Butler, 2003; Hammarfelt & de Rijcke, 2015; Moed, 2008). These branches typically have a more heterogeneous publishing pattern than the sciences (Hicks, 2005; Ossenblok, Engels, & Sivertsen, 2012). Thus, researchers publish also frequently publish book chapters and books, and often in a national language. Furthermore, studies of the sciences show how the extensive use of performance indicators changes how researchers think about and plan research (Müller & de Rijcke, 2017; Rushforth & de Rijcke, 2015).

This paper uses a qualitative case study to explore how bibliometric performance systems and indicators influence Danish economists and political scientists. Thus, the paper focuses on how researchers adapt and shape their research and publishing behaviour according to these performance systems and indicators.

The paper focuses on the two social science disciplines political sciences and economics. Political sciences are very “classical social science” in its publishing pattern with greater focus on a local scholarly community, while economics publish in international journal articles and orient it-self towards an international community (Hicks, 2005; Whitley, 2006). Thus, it is possible to compare how the bibliometric performance systems influence political scientists from a “classical” social science discipline compared to economics from a more science oriented discipline.

**Method:**

The qualitative study consists of data from 17 in-depth interviews with nine economists and eight political scientists from the same university in Denmark (see table 2). This paper mainly focuses on themes related to effect of bibliometric measurements or evaluations on the researchers. The interviews occurred in the period from August to September 2017, except for one pilot interview with a political scientist conducted in June 2017.

The participants were eleven male and six female researchers at different stages in their career, who all have co-authored at least one publication. The researchers have between 3-47 years of experience in research. The interviews focus on different aspects of research collaboration, co-authorship and reward systems, and had a duration between 1-3.5 hours.

The study uses thematic analysis (Braun & Clarke, 2006; Clarke & Braun, 2017) to identify themes and patterns in the interviews. The interviews were reexamined multiple times to check if new patterns and themes had emerged and followed by a detailed analysis for each theme identified. This paper focuses on themes related to the effects of bibliometric performance systems.

The paper uses quotes from the interviews to substantiate the analysis. The interviews were conducted in Danish, so all the quotes used in the analysis has been translated. However, the translation is kept as close to the original sentence as possible. In some cases, the quotes are altered to substantiate meaning, shorten sentences, or secure anonymity. However, the symbols in table 1 show where the alterations are. Furthermore, to secure the interviewees' anonymity, the quotes' reference only displays their professional rank and discipline.

Table 1. Quote symbols

<b>Symbol</b>	<b>Meaning</b>	<b>Intention</b>
(word)	Insert word	To clarify or complete sentence
(...)	Remove words/sentences	To provide a clearer message or secure anonymity
[person]	Replace name	Secure interviewee's anonymity

In the paper, the interviewees are referred to according to their field, economics or political science. In case the paper refers to both fields, it will refer to them as either social scientists or researchers. Table 2 illustrates how the paper refers to the group of PhD students and postdocs as junior researchers, while the group of associate professors, professors and senior professors are referred to as senior researchers.

Table 2. Interviewees

Generation reference	Professional rank	Age	Political scientist	Economists
Junior researchers	PhD students /postdoc	30-35	PD_01	PD_03
			PD_02	PD_04
			PD_07	PD_05 PD_06
Senior researchers	Associate professor	30-59	AP_01 AP_03 AP_04	AP_02 AP_05
	Professor	49-69	PR_03	PR_01 PR_02
	Senior professor	70-79	PE_02	PE_01

**Analysis:**

During the analysis, it became evident that it is difficult to distinguish the influence of the publish-or-perish culture from the tendency of applying systematic bibliometric based performance evaluations on the researchers. Although there are some clear references during the interviews to bibliometric rankings, indicators and evaluations.

Both departments of the interviewed researchers have an official publishing ranking list in which the researchers orient themselves. The economics department applies the Academic Journal Guide (CABS, 2015) with five levels, where 4\* is the best level. This journal list is a part of their recruitment and promotion policy, which states that in tenure decisions the main research assessment should be based on articles published in journals at level 3, 4 or 4\*, while assessments of candidate for full professorships are primarily based on articles published in level 4 or 4\*.

The political science department uses the Danish Bibliometric Research Indicator (BFI<sup>11</sup>) publishing list, which currently has two levels, where level 2 is the best. The department has added a third level, which consist of 32 journals. If the researchers publish in one of these journals, they receive a personal financial bonus. The selection of important or central journals are even narrower in the recruitments postings for tenure positions, where articles published in one of five journals would carry more weight. The interviewer was informed that these publishing criteria are changing as “the applicants’ qualifications are becoming better” (personal communication with political scientist).

A junior political scientist also addresses this by describing the race towards tenure as “a moving target” (political scientist, PD\_01). During the interviews, it was apparent that the researchers are very focused on the need to publish and in “better” journals if they want to

<sup>11</sup> Bibliometriske forskningsindikator (Danish name)

advance their career. Most of them frequently referred to their departments' publisher or journal ranking list, when talking about the publishing.

“Yes, there is a crazy amount of focus on [the level 2], and even more on the in-house level 3 (...), which we definitely aim for. For example, [my colleague] and I have... we could have submitted (the article) somewhere else, but it was very intentional that we (choose this journal) (...), since it [fits the subject of the article]. Thus, we left out other (journals) of the consideration, which have a similar impact factor but of some mysterious reason are not level 2” (political scientist, PD\_07).

The quote by a political scientist illustrate how their decision of where to submit an article is a calculation based on both subject relevance of the journal and obtaining the best score in the performance system. The social scientists emphasize multiple times during the interviews that it would be “stupid” to not look at the ranking list, since publishing outside the list does not count. Thus, “the ranking of journals definitely influences where people publish (political scientists, PD\_01). One of the senior researchers had noticed that people now tend to emphasize that it is a level 2 journal they publish in and not just some “random silly journal” (political scientist, PE\_02).

Most of the economists did not care for the BFI lists, since it lacks nuances. One economist described how a colleague “had done the wrong thing” by publishing in “bad twos” (economist, PD\_03). The economist elaborated that “bad twos” are not useful when applying for promotions and the sensible thing is to publishing according to the ranking in the CABS guide. Hence, to be promoted in the economics department one must publish substantially in level 3, 4 and 4\*.

Furthermore, the publishing focus of the economists seems to be solely on international articles. “Well books count very little here (...), but of course, they also count, but they do not count as much (...) Well I actually do not know, it is hard.... But books do not count as much as articles, they are discontinued” (economists, PE\_01). This view is shared by the political scientists, who emphasizes that it is “international articles, and in preferable American... great American journals” (political scientist, AP\_01), and “I think articles have a greater value than books, especially if you have to (advance), since it is much more difficult to get books published” (political scientist, PR\_03).

A few of the senior political scientists stated that they still publish books and book chapters; also in Danish. Nevertheless, if one has to look at it from a career perspective, they perceived it as “hopeless deed” (political scientists, AP\_04). Thus, the general consensus among the social scientists is that the work effort of publishing a book are not rewarded similar to the number of articles they can publish for the same effort. Instead, it is a constant narrower focus on a few select journals.

The trend of article publishing is also observable when looking at data harvest to calculate the Danish Bibliometric Research Indicator<sup>2</sup>. Thus, in the period 2009-2017 the general share of journal articles<sup>3</sup> has risen from 54% to 67% in the social sciences, while the share of book chapters has decreased from 37% to 29% and books have decreased from 10% to 4%. Hence,

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<sup>2</sup> The publication data from 2009-2011 was provided by Jesper Schneider, while the publication data from 2013-2017 was downloaded from the Danish Bibliometric Research Indicator webpage “Høstresultater” <https://bfi.fi.dk/Publication/NationalAnalysis>

<sup>3</sup> The sample includes the following publication types: journal articles, book chapters and books.

it seems that Danish social scientists adapt their publishing behaviour according to what gives the best “score” in the indicator. These findings have been observed in other studies (Ossenblok et al., 2012; Verleysen & Ossenblok, 2017) and it indicates that bibliometric performance systems influence researchers publishing patterns.

The great focus on articles is the norm for the economists, and none of them questioned whether they should publish their research in another publication type. This is different for the political scientists, where some thought it is problematic with the narrower publishing focus. Some political scientists emphasize that the purpose of their research is to reach and educate practitioners, and these mainly orient themselves in the national journals and books. Hence, some of the political scientists questioned whether the intensive focus on international journal article publishing removes the purpose with their research. Other emphasizes that the departmental official ranking lists “does not really match me or my profile” (political scientists, AP\_03). Thus, they find it difficult to compete or continuing pursuing their own research interests.

However, the focus on or demand of publishing have also some positive aspects, as this statement from one of the senior economist illustrates:

” In the old times, when I started at the department (...), people went to a yearly [workshop] (...), but they never presented or published any papers... it was a sad affair. Then we were a few people who started sending in papers and got them accepted, and then we afterwards turn the papers into articles” (...). “The people in the old gang were friendly and nice and skilled and talented, but they never had to publish articles. They did not need it to pursue a career. So, something has changed. Today we would never imagine having a professor without any scientific production” (PE\_01, economist).

Thus, according to this senior professor, the pressure to publish made many of the economists stop writing to their desk and step out of their ivory tower. Especially the introduction of the BFI has removed all researchers who have zero research productivity, since the intensive registration of research publications clarifies who are lacking publications.

### **Discussion:**

The preliminary findings in this paper demonstrate how researchers adapt their research and publishing behaviour according to how they get the best “score” in the performance systems. Thus, the selection of where to publish gets narrower with these publishing ranking lists.

First, bibliometric performance systems diminish the focus on national research, since research publish in the local language typically get less “points” in the performance system, than research publish internationally. Second, it creates a focus on research that is publishable in international journals, which to a lesser degree are interested in “local” matters. Furthermore, according to the interviewees, these journals often require the inclusion of American research problems and/or data.

Finally, these systems overall create a competitive environment with greater focus on publishing instead of on the research it-self. The focus on creating research that are publishable also meant that researchers become more incline to demand co-authorship for minor contributions as well as “salami” publish the research.

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