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Impact Factor Publication Requirement in Kazakhstan

Abstract

In the effort to raise university faculty research capacity and to stimulate faculty to produce research of greater quality, the government of Kazakhstan has recently introduced a requirement for publication in journals with an impact factor as a part of requirements for faculty promotion.

This study will explore to what extent impact factor publication requirement was incorporated into universities' promotion policies and on the resulting experiences of faculty. The study is based on the results of an online survey of faculty, who vary on a number of characteristics: 1) seniority, 2) type of formal post-graduate education (Soviet, post-Soviet local, Western), 3) discipline, 4) type of institution (national, regional, private). The study explores barriers that faculty experience in publishing in impact-factor publications, the strategies they use, as well as their views on the role and effectiveness of impact-factor publication requirement in research capacity building and research productivity evaluation. In addition to that, the paper analyzes the alignment of incentives for publishing in impact-factor journals and university or national level support structures that faculty view as effective in building research capacity and in achieving an increase in the number of high quality publications.

Keywords

university research, research capacity, impact factor, faculty research, research productivity, research quality

Disciplines

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Abstract

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Impact Factors, Compensation and Promotion: Faculty Responses to a National Policy.

1. Introduction

In 2011 the Government of Kazakhstan adopted “Rules for Awarding Academic Ranks of Associate and Full Professors” which linked faculty promotion to the number of publications in “impact factor journals.” The aim of the policy was to stimulate university faculty to produce high quality research by setting high standards of research performance.

The policy initiative was not surprising given the growing prevalence of impact factor based policies in other national higher education systems which influenced Kazakhstan’s policy makers. It was also consistent with the national government’s desire to increase Kazakhstan’s research productivity and diversify the economy. Like many post- soviet nations Kazakhstan’s government is investing in national R&D capacity to fuel innovative activity and sustain economic growth and social development (Mercer and Schweitzer 2007). Research and innovation infrastructure in Kazakhstan has been undergoing significant

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changes as the country transitions from a centrally-planned socialist economy to a regulated market economy. These changes include distributing research funds on a competitive basis, providing greater financial autonomy to research organizations (Sharman 2012) and introducing an intellectual property protection system (Parmanov 2013).

These and other policy changes have led to an impressive structural modification. Yet Kazakhstan still had a relatively unimpressive research output (OECD 2007). During 1991 and 2013, Kazakhstan's researchers published only 4,612 articles in journals included in Thompson Reuters Web of Science, averaging around 200 publications per year. The average annual number of citations to Kazakhstani articles in the database was 1063.26, while the average citation per item was only 4.72. The majority of the articles were published in Russian journals with an impact factor less than one. (Kuzhabekova and Saniyazova 2013).

The reasons for the poor research productivity of Kazakhstani researchers included an ineffective system of incentives where faculty rank and salary were independent of research productivity and high teaching and service loads, which left little time for research (Caboni et al. 2003). Lack of access to modern research facilities, equipment, and materials (Mercer & Schweitzer 2007), limited access to library resources (OECD 2007) and lack of the English language skills (Pak & Agbo 2013) were also seen as limiting research output.

The new rules on faculty promotion are the latest policy initiative to lift the volume and quality of research in the nation's universities. The effectiveness of such an initiative, even in a fairly tightly coupled national system of higher education like Kazakhstan, depends in large measure on the responsiveness of institutions and an individual faculty. To assess the responsiveness of institutions and faculty we conducted an online survey of faculty at six universities. One aim was to see the extent to which the national policy about impact factor publications was incorporated into universities' promotion policies and compensation practices. The second aim was to explore how the publication requirement aligned with faculty perceptions of the incentives for and barriers to high quality research and their responses to the national policy. These aims were elaborated into five research questions:

RQ1: How is impact-factor publication requirement reflected in institutional promotion and compensation practices?

RQ2: What are barriers facing Kazakhstani faculty in publishing articles in journals with a non-zero impact factor?

RQ3: What strategies do faculty members use in order to improve their record of publishing in non-zero impact factor journals?

RQ4: Do faculty perceive the impact factor publication requirement as a tool for improving research capacity in Kazakhstan?

RQ5: What other strategies could improve national research capacity and the quality of research outputs?

2. Methods

The study used a cross-sectional online survey of faculty at six universities in Kazakhstan, two national, two regional, and two private universities in parts of the country to capture the diversity institutional ownership, location and level.

The survey included six types of questions covering: (1) participants and universities' background characteristics; (2) the extent to which impact-factor publication requirement is reflected in institutional compensation and promotion practices; (3) the barriers faced in producing impact factor publications; (4) strategies used to increase the chances of publication; (5) the effect of the policy on research capacity building; and (6) other ways of improving research productivity. Most of the questions were closed-ended and provided a list of options for answers or answers on a Likert-scale. There were also opportunities for open ended responses and the final question about alternative strategies allowed for unstructured responses.

The survey was administered online using Qualtrics. One reminder was sent to participants three days after sending the original invitation. To protect the identity of the faculty and to increase the likelihood of response, participation in the survey was anonymous.

Closed-ended responses to the survey were analyzed descriptively using Excel. The quantitative analysis involved calculation of percentages of individuals, who provided particular types of responses to questions. Answers to the open-ended questions were analyzed with NVIVO by means of thematic coding. Open-ended questions were included in sections of the survey pertaining to only three of the research questions. We coded data according to the following themes: (1) barriers facing Kazakhstani faculty in publishing articles in journals with a non-zero impact factor; (2) strategies faculty use to improve their record of publishing in non-zero impact factor journals; (3) faculty's ideas about ways to improve national research capacity.

Respondents

Of the 1,143 faculty in the 6 universities 170 (15%) took the survey and 155 responses were usable. Out of the 155 respondents 83% came from public institutions and 17% work at private institutions. Sixty four (43%) out of 149 respondents to the question about the location of the university indicated Astana as their city. This location was followed by Kostanay (52 individuals, 35%) and Almaty (33 individuals or 22%).

Most of the respondents were either Associate Professors/Docent (59 individuals or 38%) or Senior Instructors (50 individuals or 32%). Instructors comprised 12% (19 individuals) and Full Professors – 10% (15 individuals) of the sample. Only 4 individuals (3%) were Assistant Professors, while the remaining

5% indicated something else as their rank. These distributions should be interpreted with caution since the system of academic ranks in Kazakhstan is not consistent with the system used in the West. For example, not all universities have Assistant Professors, while Instructors and Senior Instructors are considered faculty in Kazakhstan. In terms of age of respondents, 52% were in their thirties, 40% -in their forties, 26% [in their forties. There were less than 20% in each of the other two groups - faculty younger than 30 and older than 60.

Table 1 summarizes information about the types of degrees hold by the respondents. Most participants hold the qualification of Candidate of Science (90 individuals) earned in the USSR (37 individuals) or in post-Soviet Kazakhstan (57 individuals). , as well as Master's degree (57 individuals) earned in post-Soviet Kazakhstan (51 individuals). Doctor of Science degree was hold by 24 participants with most of the degrees earned in post-Soviet Kazakhstan (14 individuals). PhD degrees were hold by 23 participants with the majority of the degrees also awarded in post-Soviet Kazakhstan (19 individuals). A hundred respondents indicated their disciplinary affiliation. We assigned each of the disciplines to the three large classes – social sciences, natural sciences, and applied fields. Forty one percent of respondents work in applied sciences, 39% - in social sciences, and 20% - in natural sciences.

Only 7% of respondents indicated that they do not know English. A larger group (37%) believed that they have an average level of English (“Can understand

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articles with a dictionary; can write articles, but with some difficulties and with assistance from others”). Nearly the same number respondents (33%) indicated a low level of English (“Understand articles with a dictionary; can only translate articles by hiring a translator/interpreter”). Only 23% assessed their level of English as high (“Can understand articles; can write articles with a dictionary”).

Out of 101 respondents about a half (45%) indicated that they do not have any publications in impact factor journals. About a quarter (26%) mentioned that they have only one publication. Less than a third (30%) had published more than once in journals with an impact factor.

Overall the respondents as a group are probably younger than the national faculty as a whole but their qualifications, language ability and research records are similar to the rest of the faculty.

Results

Is the impact-factor publication requirement reflected in institutional promotion and compensation practices?

About half of the respondents (49%) believe that publication in impact factor journals is directly linked to salary increases in their organizations. Less than one in five respondents (18%) believes that the policy requirement is linked to promotion in their organizations. But a smaller group, 7% , alleged that individuals could be fired or be subject to a cut in salary for inability to publish in impact factor journals (even though this is not included in the official policy.).

What are barriers do faculty face in publishing articles in journals with a non-zero impact factor?

Faculty perception is that money and time are the barriers to more and better publications. Eighty nine percent see funding as a primary or secondary problem. Lack of time for research was a primary or secondary problem for 77% of respondents. The importance of time was a recurring theme in the open ended responses. A (docent – some sort of identifier) commented

University faculty is overloaded with service and administrative responsibilities. For example, in addition to teaching a faculty is also expected to write all sorts of reports, to collect data on students and to file other types of paperwork. When are we supposed to find time for impact factor publication then?

Another respondent (a lecturer or what ever title) also bemoaned the demands of documentation;

We are overloaded with paperwork associated with teaching. The electronic record keeping system requires us to file grades based on at least three indicators for each of our students. In addition to that, we are expected to keep a paper record of our grading and maintain paper copies of lecture materials that need to be available for review by multiplicity of not particularly smart bachelor-degree holding educational auditors

Lack of methodological knowledge was identified by as a primary or secondary problem by 67% but it was less pressing than the constraints of time or money. A similar proportion saw lack of access to required equipment and materials was indicated as a primary or secondary problem.

Given the participants' self-assessments of English language proficiency it is not surprising that "lack of knowledge of the English language" was perceived as an important barrier faced by 73 % of respondents.

While funding, time, methodological knowledge and language proficiency were identified by a majority of participants as barriers to impact factor publishing most participants (78%) had a reasonable understanding of the meaning of "impact factor" and about half of the respondents claimed to understand the purpose of the policy.

Factors such as lack of institutional leadership, access to research journals and data bases and knowledge of suitable journals for publication were not identified as major problems by more than half of respondents. But some of the open responses addressed the need for access to full-text library databases and readily accessible laboratory materials and equipment.

A number of open ended responses included claims that faculty have to pay to be included in international journals and that this cost was a significant barrier to high impact publishing. This may be due either to a lack of understanding that

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reputable journals do not charge publication fees or refer to the fact that many faculty pay for professional translation and editing before submitting papers for peer review. These services are expensive for the poorly paid faculty and are difficult to find. While misinformed these beliefs are real deterrents to research activity. As one (professor?) commented;

The majority of recognized journals are now open to everyone; however, this openness comes with a fee that the authors have to pay. The pay is relatively high – from 1000 to 3000 dollars. It is nearly impossible to get such funding from university administration and authors are able to publish only if they plan the expenses and include the cost for the payments in the grant proposals.

Another (lecturer) saw the issue in similar terms;

The main reason why we lack articles published in journals with non-zero impact factor is a high price for publication and the lack of compensation for publication from the university.

Overall lack of money and time are seen to be the main barriers to research and subsequent publication. Time is constrained by demands on faculty members to document grades and teaching activities and to participate in various administrative and service roles.

Faculty strategies to improve their publication record

The most commonly reported strategies are improving English language proficiency (78%) and enhancing theoretical and conceptual knowledge of the topic of research by extensive reading of literature (75%). Nearly two thirds of respondents cited in-depth study of the content and structure of published articles to better understand how to write one. In addition more than half of the participants attended seminars on publishing in international journals or on research methods and involved an international partner. A similar portion of the respondents (57%) used paid translators and editors to bring articles to the level acceptable for international journals.

Co-authoring with colleagues in Kazakhstan and involving talented lower rank colleagues were less important strategies.

Worrisome responses included the use of fee-charging journals as a primary or secondary strategy by 60% of participants. Of even more concern are numbers of respondents who reported the use of plagiarism (16%) and paying others to write articles (20%) as strategies to enhance publication records.

There was no recurring theme in the open ended responses asking if faculty used other strategies to improve publication records. Some listed partnering with researchers who have been successful in publishing abroad and getting connected with journal editors. Others sought advice from reputable researchers in

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Kazakhstan and internationally. Some respondents were focusing on publishing in Russian journals or on producing textbooks.

The variety of stratagems in the open responses suggests that there is a very individualist approach to burnishing publications. But overall there is an emphasis on the mechanics of publication, how to write for peer reviewed journals in English and strengthening research methods.

Faculty perceptions of the effectiveness of impact factor publication policy in improving research capacity in Kazakhstan?

The policy's greatest effect has been on research collaboration, on international partnerships and the quality of research publications. Over 60 percent of respondents nominated these three areas.

Similar proportions reported that the requirement influenced individual behavior in a number of ways including motivating researchers to publish in good journals (60% individuals) and contributing to the improvement of methodological skills (55%) and improving the quality of researcher training (59%).

Balancing these positive impressions is the belief held by slightly more than half of the participants indicated that the policy has decreased the interest of young researchers in the research career to some degree. . Moreover, a majority of participants indicated that one primary or secondary effects of the policy included

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the loss of talented researchers from universities (59%), an increased number of unjustified firings, demotions, and salary cuts (54%) and greater exploitation of junior researchers (52%).

Respondents also noted a secondary effect of the policy on the quality of journals in Kazakhstan. At the same time, 50% of respondents indicated that one of the minor effects was negative developments in practices of local research journals (58 individuals). Also, almost 60 percent of participants thought that the policy had only a minor effect on plagiarism (63 individuals).

Overall faculty members see the impact factor policy shaping individual behavior in a number of positive ways, increasing interest in collaborative research, motivating researchers to publish in ‘good’ journals and improving training for researchers. They also reported some apparent drawbacks including the loss of talent and ill-informed personnel decisions.

Other strategies for improving research capacity.

In response to the open-ended question many participants noted that it is not enough to merely require faculty to produce impact-factor publications. A typical response was that “conditions should be created for faculty to conduct research”. A common suggestion was to free faculty from some teaching and service responsibilities and from burdensome paperwork. This lines up with the results about the lack of time for research reported above. To free up faculty time one participant (a junior faculty member?) suggested relieving :

Impact factor publication requirement in KZ ... the faculty from teaching and supervisory responsibilities at the department. These responsibilities are taking up all the time during the day, and frequently at night. More teaching and service responsibilities should be assigned to instructional personnel. In addition to that, department heads should use special assistants rather than junior faculty to provide help with paperwork. Younger researchers should be given more time to allow them to launch their research career and to learn the steps in the publication process.

The need for supportive conditions was stressed by many participants and suggestions included better access to resources, such as open access to full-texts of research articles, better equipped modern research facilities and research funding, including funding for international collaboration. Others instanced the need for professional development opportunities, especially in learning English, in modern research methods, and in the publication process. Specific examples included funded Visiting professorships or research “internships” at locations of international partners, as well as in the form of specialized workshops on publication in impact-factor journals. The emphasis on a more supportive environment was expressed very forcefully by a (professor)

What we really need to do is to get rid of the impact-factor publication requirement. Research community has always been famous for it democratic

Impact factor publication requirement in KZ traditions and the ability to self-organize. Hence, instead of REQUIRING publication in impact factor journals, it is necessary to ASSIST researches in publishing.

Some participants indicated that it is unrealistic to require publication from all teaching staff. They noted that it is more reasonable to require impact factor publication from research-oriented faculty with more advanced degrees and higher potential than from instructional personnel:

I believe that based on the research publications already produced by faculty members, we should divide the teaching personnel into two groups: faculty, involved primarily in research, publishing in impact-factor journals and producing text-books; and faculty, responsible for teaching. We have many instructors, who are unable to publish, but who are, nevertheless, very good at teaching and are willing to continue in the career. I think such an approach would be more reasonable in our conditions. At this point we have some faculty who are realistically conducting research and others, who are just adding their names to the publications of the former.

One of the objections to differentiate between the two types of faculty could be difficulty in identification of criteria to distinguish one group from the other.

Besides, one might argue that publication is important for all faculty members because research experience contributes to the quality of teaching.

Another participant suggested that impact factor publication should be required exclusively from those, who receive grant funding from the government rather than from all faculty members.

Respondents also suggested some practical measures that would help faculty meet the policy requirement. Many saw merit in easy access to a list of recommended impact-factor journals for individual disciplines. Some participants suggested creating a special information service on impact factor publications at the Ministry of Education. A professor argued that:

[The government] should create a consultation unit or service at the Ministry level to provide information and training on impact factor publication related issues. This unit should publish a list of journals recommended for publication...

One (or more than one?) participant advocated the introduction of a regulation prohibiting faculty from paying for publication- *“Publication in fee-charging journals should be prohibited”*.

Lots of suggestions pertained to realignment of incentives systems to better fit the policy. Participants mentioned that currently impact factor publications are mandatory and inability to publish leads to negative consequences, such as

demotion or salary decreases. Meanwhile, more can be achieved by encouraging faculty to publish by rewarding successful publication via a system of awards, premiums, or by linking publication count to promotions and salary increases. On a similar note, some participants said that publication record should be taken into consideration when hiring and that directors of research centers and heads of departments should be appointed based on the ability to provide evidence of successful publication.

*Summary of responses to this RQ after we sort out the “lots” “many”
“some”.*

xx

3. Discussion

One of the main findings of the study is that introduction of impact factor publication has produced some positive effects on the behavior of faculty members. The majority of participants use a variety of approaches to increase their chances to publish. They put effort in doing comprehensive literature reviews to obtain a good understanding of the theories, methods, and most current topics in their fields of research. Some carefully study the articles to understand how it should be written. Many faculty collaborate with either domestic or international colleagues who have better methodological or conceptual knowledge or possess experience in publishing in journals with an impact factor. A certain percentage of participants are trying to improve their knowledge of English or work with

professional editors. Almost all faculty members attend workshops on research methods and the process of publication. These behavioral changes imply that the policy was very successful in encouraging the faculty to work on the improvement of their research skills.

Interestingly, the changes in the behavior of the faculty are only in some cases accompanied with corresponding changes in universities' hiring and promotion policies.

Although the impact factor publication requirement was mandated by the Government for promotion, only a small number of faculty reported that the requirement is linked to promotion in their organizations. There are several potential explanations of the finding. First, if the government did not strongly enforce or monitor implementation of the new policy, some universities might still be in the process of adjusting their promotion policies or might have failed to broadly advertise the changes. Second, it could be that not many faculty are actually interested in promotion to a higher rank and, hence, they are not following the changes in the policy. This explanation is a more probable one given the fact that difference in rank is not linked to large salary increases.

Interestingly, while most of the respondents mentioned that at their universities publication in impact factor journals is not linked to promotion, almost a half of the respondents indicated that at their universities the requirement is linked to salary increases. For those people who noted increases in salary without

changes in promotion policies, the explanation can be the practice that has been observed in some universities, whereby faculty receive a premium if they succeed in publishing an impact-factor article. In other words, even when the policy failed to influence university promotion policy, it affected at least salary determination thus creating an important incentive for publishing in high quality journals. However, the government could produce a greater effect by enforcing the new regulation and by making sure that universities change their promotion policy accordingly.

Another important finding of the study is that researchers experience lots of difficulties in meeting the impact factor publication requirement. Setting a new expectation without providing necessary conditions for conducting research is not sufficient for raising research capacity. First, Kazakhstani faculty do not have sufficient time for research because of extreme teaching and service load. They also have to file much paperwork related to teaching. In the absence of academic support personnel, the bureaucratic load is particularly heavy for junior researchers, who need more time for enhancing their research skills and jumpstarting their research agendas. Faculty also lack financial and material resources. Lack of appropriate access to research equipment and facilities, as well as to full-text publication databases was mentioned as one of the main challenges.

For certain categories of faculty, publication in impact factor journals would be unattainable even if the faculty were provided with additional time and

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resources. For the majority of faculty the lack of English language skills is the main barrier to publication in international journals. In addition to that, due to isolation of Soviet scholars from the international research community, the old Army of Kazakhstani researchers, who received post-graduate training in pre-independence period, were trained in methods and theories, which are not well known to their international colleagues. The pressure to upgrade the theoretical and methodological toolbox of knowledge and skills is particularly high for researchers in humanities and social sciences, whose development was stalled in the Soviet Union due to ideological control. However, these researchers also seem to be discriminated by policy makers and university administrators in terms of research funding allocation because of alignment of the financing mechanism with the strategic goals of the industrial innovative development. Such a situation is very detrimental for the social sciences and humanities and may contribute to further decline in the quality and status of research in the fields.

In addition to some positive effects, impact factor publication requirement has also produced some negative side effects. Some notable examples include plagiarism, resort for fee-based publication, and exploitation of junior researchers. In addition to that, in some universities inability to meet the requirement has served as a basis for unjustified firings, demotions, and salary cuts. Moreover, the requirement has somewhat contributed to brain-drain from the country and from research to other occupations inside the country. While only a small number of

researchers indicated the developments as being minor effects of the policy, the negative side-effects do take place and need to be further monitored and addressed by the policy-makers.

The majority of the participants have agreed that the policy in general had a positive effect on research capacity building. As a group the participants largely agreed that the policy stimulated international and domestic research collaboration. In addition to that, the policy created stimuli for professional development and improved the process of researcher training. Finally, it affected the quality of local research journals.

To conclude, the policy had a positive effect on research capacity building in Kazakhstan in a number of different ways. First, it created conditions for emergence of a system of incentives (promotion and salary policies) for professional development of researchers and for producing publications of high quality. Second, it created an orienteer (criteria for acceptable journals) that inexperienced researchers can use for modeling and emulating quality research. Third, it stimulated researchers to learn English and to collaborate, thus encouraging researchers to learn from each other and to match skills and resources effectively. Finally, it affected the local system of research communication (journals), which can play an important role in research quality improvement in the future.

Given some of the challenges in the policy implementation, Kazakhstani government could take some measures based on the participants' recommendations. First, the policy should differentiate between instructional and research oriented faculty of the university. It might be more effective to provide more support to a small number of faculty capable of producing quality research than to provide low support to anyone regardless of talent, background, and interest. Second, the selected faculty should be provided with better research funding, as well as with administrative support, so that they have more time to get involved in research. Third, the policy should be more strictly reinforced and monitored at the university level, so that the system of incentives is linked to specific institutional promotion and salary setting policies. Fourth, faculty should be provided with better access to funding and resources. Fifth, more information and training on publication, methods, and impact factor should be offered. Sixth, more coordination of the process should take place and it can be organized by a special arm of the Ministry of Education.

This study has some limitations, including a relatively small and non-representative sample of faculty, which do not allow us to generalize the findings to all faculty researchers in Kazakhstan. In addition to that, the study was administered in Russian, which may have affected the response rate from Kazakh-speakers. The voluntary nature of participation in the survey might have encouraged participation from those who were particularly dissatisfied or highly

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satisfied with the policy and thus were motivated to express their views. Despite the limitations, the findings of the survey might still be helpful for policy makers in Kazakhstan and in other countries of the post-Soviet regions, which are considering how to stimulate research activity and how to develop individual research capacity in their universities.

Reference List

Adam, D 2002, 'Citation analysis: The counting house', *Nature*, vol. 415, no. 6873, pp.726-729.

Amin, M & Mabe, MA 2003, 'Impact factors: use and abuse', *Medicina (Buenos Aires)*, vol. 63, no.4, pp. 347-354.

Boor, M 1982, 'The citation impact factor: Another dubious index of journal quality', *American Psychologist*, vol.37, no.8, p. 975.

Caboni, TC, McLendon, MK & Rummyantseva, N 2003, '*Faculty professionalization in Kazakh higher education: Barriers and possibilities*', Paper presented at the Association for the Study of Higher Education annual meeting held in Portland, Oregon, November 12-16, 2003.

Danabayeva, R 2013, 'Management Of innovation in the modern Kazakhstan: Development priorities of science, technology and innovation', *Journal of Information Systems & Operations Management*, vol. 7, no. 2, pp.288-293.

D'Odorico, L 2001, 'The citation impact factor in developmental psychology', *Cortex*, vol.37, no.4, pp.578-579.

Fassoulaki, A, Sarantopoulos, C, Papilas, K, Patris, K, & Melemeni, A 2001, 'Academic anesthesiologists' views on the importance of the impact factor of scientific journals: a North American and European survey', *Canadian Journal of Anaesthesia*, vol.48, no.10, pp. 953-957.

Foley, JA, & Della Sala, S 2010, 'The impact of self-citation', *Cortex*, vol.46, no.6, pp. 802-810.

Garfield, E, & Sher, IH 1963, 'New factors in the evaluation of scientific literature through citation indexing', *American Documentation*, vol.14, no.3, pp.195-201.

Garfield, E 1979, 'Is citation analysis a legitimate evaluation tool?', *Scientometrics*, vol.1, no. 4, pp. 359-375.

Garfield, E, & Welljams-Dorof, A 1992, 'Citation data: their use as quantitative indicators for science and technology evaluation and policy-making', *Science and Public Policy*, vol.19, no.5, pp. 321-327.

Hansson, S 1995, 'Impact factor as a misleading tool in evaluation of medical journals', *The Lancet*, vol.346, no.8979, p. 906.

Kuzhabekova, A & Saniyazova, A 2014, 'Impact-factor requirements in Kazakhstan:

The reaction of scholarly journals and implications for local research capacity

Impact factor publication requirement in KZ building?'. Paper presented at the *Annual Meeting of the Comparative and International Education Society*, Washington, DC.

Kuzhabekova A 2016, 'The Development of university research in Kazakhstan during 1991 2013: a Bibliometric view', In *Globalization on the Margins: Education and Post-Socialist Transformations in Central Asia*, 2nd ed., eds. I Silova & S Niyozov, Palgrave Macmillan.

Lavie, P 2009, 'The race for the impact factor', *Journal of Sleep Research*, vol.18, no.3, pp.283–284.

Levine, TR 2010, 'Rankings and trends in citation patterns of communication journals', *Communication Education*, vol. 59, no.1, pp. 41–51.

Macroberts, MH & Macroberts, BR 1996, 'Problems of citation analysis', *Scientometrics*, vol.1, no. 4, pp. 359-375.

Mercer, AM & Schweitzer, G 2007, 'Science and technology in Kazakhstan: current status and future prospects', *Foresight-Russia*, vol. 1, no.2, pp. 60-68.

Ministry of Education and Science of the Republic of Kazakhstan 2011, Order of the Minister of Education and Science of the Republic of Kazakhstan, March 31st, 2011 N128. Available from: <http://sc.edu.gov.kz/484/?L=0>. [28 April 2015].

Moed HF, Van Leeuwen ThN, & Reedijk J 1999, 'Towards appropriate indicators of journal impact', *Proceedings of the Seventh Conference of the International Society for Scientometrics and Informetrics*, Colima, Mexico, pp. 341-354.

Nkomo, SM 2009, 'The seductive power of academic journal rankings: Challenges of searching for the otherwise', *The Academy of Management Learning and Education*, vol.8, no.1, pp.106–112.

Organization for Economic Cooperation and Development 2007, 'Reviews of National Policies for Education Reviews of National Policies for Education: Higher Education in Kazakhstan 2007', OECD Publishing, p. 183.

Pak, N & Agbo, S 2013, 'New perspectives on higher education reform in post-Soviet Kazakhstan: the Dilemma of English language competence', ICERI 2013 Proceedings, pp. 7112-7112.

Parmanov, N 2013, 'Formation and development of institute of Intellectual Property rights protection in Kazakhstan', *Global Journal on Technology*, vol. 4, no.2, <http://www.world-education-center.org/index.php/P-ITCS/article/viewArticle/2691>

Radosevic, S & Myrzakhmet, M 2009, 'Between vision and reality: Promoting innovation through technoparks in an emerging economy'. *Technovation*, vol.29, no.10, pp. 645-656.

Reguant S 1995, 'Reflections on scientific evaluation. Some comments on the 8th Conference of the International Federation of Science Editors', *Microbiología SEM*, vol.11, pp. 499-502.

Rey-Rocha, J, Martín-Sempere, MJ, Martínez-Frías, J, & López-Vera, F 2001, 'Some misuses of journal impact factor in research evaluation', *Cortex*, vol.37, no.4, pp.595–597.

Rousseau, R, & Hooydonk, GV 1996, 'Journal production and journal impact factors', *Journal of the American Society for Information Science*, vol.47, no. 10, pp.775–780.

Sala, SD & Brooks, J 2008, 'Multi-authors' self-citation: A further impact factor bias?', *Cortex*, vol.44, no.9, pp.1139–1145.

Sharman, A 2012, 'Modernization and growth in Kazakhstan', *Central Asian Journal of Global Health*, vol.1, no.1

<http://cajgh.pitt.edu/ojs/index.php/cajgh/article/view/11/15>

Sievert, M & Haughawout 1989, 'An editor's influence on citation patterns: A case study of Elementary School Journal', *Journal of the American Society for Information Science*, vol.40, no.5, pp. 334–341.

West, RE and Peter JR 2012, 'Rigor, impact and prestige: A proposed framework for evaluating scholarly publications', *Innovative Higher Education*, vol.37, no. 5, pp. 359-371.

Wicks, D 2004, 'The institution of tenure: Freedom or discipline', *Management Decision*, vol. 42, no. 5, pp. 619–627.

This chapter explores recent developments in Kazakhstani higher education focusing on an exploration of the intended and unintended effects of one of the government policies aimed at the development of university research capacity. Drawing on the results of an online cross-sectional survey of faculty, this chapter reflects on lessons from the Kazakhstani experience of introducing a requirement for university faculty to publish in journals with non-zero impact factor as a way to stimulate university research. The significance of the study is in the relevance of the conclusions and recommendations for the higher educational reformers in other countries of the former Soviet Union. This study will help the reformers in the region to assess the effectiveness of the measure in promoting research capacity, to take into consideration any side-effects, and to ensure that it is implemented more effectively in the future.

3.1. The use of the impact factor as a measure of individual research performance

Impact-factor has increasingly being used as a measure of individual research performance in many Western and, more recently, non-Western countries. Since impact factor was first defined by Garfield and Sher in 1963, the secondary use of the indicator of journal research performance in the evaluation of individual research productivity has stirred lots of discussions. The original reason for the introduction of the bibliometric indicator was to assess the importance of a particular journal in a given field regardless of the number of articles published in

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an issue. The impact factor for a given year is calculated by “dividing the total number of citations of journal papers published during a 2-year period before that year by the total number of ‘citable’ items published during the same 2-year period (Lavie 2009, p.283).”

In the course of time, impact factor became also a measure of scientific output of researchers, whereby it is considered as an indicator of research quality. The use of impact factor for individual performance evaluation is associated with many problems, which are extensively discussed in the literature (Amin & Mabe 2003; Garfield 1979b; Garfield & Welljams-Dorof 1992; Hansson 1995; MacRoberts & MacRoberts 1996; Moed et al. 1999; Reguant 1995). West and Rich (2012) have summarized the existing criticism into four main categories:

- (1) the wide variance between disciplines;
- (2) the potential for a quantitative measure to be manipulated or skewed;
- (3) the validity of evaluating the journal’s impact when considering the value of an individual researcher;
- (4) the bias in citation metrics for and against certain types of research (p.361).

West and Rich (2012) explain that impact factors vary widely by discipline, thus creating complications in their use by multidisciplinary research funding committees. For example, impact factors of journals in education research tend to be lower than impact factors of journals in natural sciences due to different citation

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patterns in the disciplines. In addition to that, impact factor penalizes journals that publish articles on non-conventional and emerging topics, which are not cited by the wider research community (Boor 1982; Nkomo 2009; Wicks 2004). Moreover, impact factor can be influenced by self-citations (Foley and Sala 2010), language and country of the researcher (Rey-Rocha et al. 2001), the annual number of articles published by a journal (Rousseau & Hooydonk 1996), co-authorship (Sala & Brooks 2008) and editorial policy (Sievert & Haughawout 1989).

Impact factor is also an unreliable measure of individual research performance because citations may vary widely among papers within a single journal making journal averages uninterpretable at the individual level (Lavie 2009). Further, impact factor may fail to reflect the impact of an article, which is made openly available on the Internet or in electronic databases (Lavie 2009).

Finally, impact factor is biased against certain types of research. For example, Rousseau and Hooydonk (1996) and Sala and Brooks (2008) found that in some disciplines the quantity of articles in a journal is linked to the journal's impact factor, which encourages the journals to give preference to shorter articles rather than to lengthier, in-depth studies. Levine (2010) reported that journals covering a broader variety of topics tend to have a lower impact factor than journals focused on particular topics. D'Ordorico (2001) found that impact-factor disfavors longitudinal studies, which have a longer gestational period.

Despite the wide-spread criticism, the indicator is increasingly used as a measure of individual researcher performance around the world, notably in Europe and in the US. According to a survey recently conducted in Germany, two thirds of the country's surveyed medical facilities are using journal impact factor as a criterion for awarding university funds, as well as an indicator in decision making on appointments and promotions (Kaltenborn & Kukh 2004). In Finland, a specific funding formula is linked to individual performance measured in the form of the journal impact factor. One impact factor point is equivalent to US \$ 7,000 (Adam 2002). In general, impact factor seems to be more significant as a measure of individual performance in Europe than in the US. A study of the perceptions of the importance of the impact factor among the North American and European anesthesiologists revealed that the measure is used for the assessment of individual performance in 13% of the US as compared to the 56% of the European departments (Fassoulaki et al. 2001).

3.2. Impact factor as a policy for increasing research capacity in Kazakhstan

As governments of many other transitional countries in the world