Achieving a professorship with proper academic merit
discouraging questionable publishing
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Achieving a professorship with proper academic merit: discouraging questionable publishing

Abstract
In many research communities, discussions about publishing through questionable or even predatory outlets recur frequently. We must address the researchers who publish in these publication outlets, since this problem could be resolved if researchers stopped engaging with these publications. Among the contributing factors for engaging with these journals is the advantage of having more publications and editorial board involvement when a researcher applies for a faculty position or a promotion. It has been claimed that fast tracking promotion using questionable publication outlets is an increasing problem as scholars see the strategy working well for their colleagues. Promotion guidelines are considered vital for the expectations and more specifically pressures and incentives when addressing the issue of questionable journals. Frequently, actions from universities are called for. In this case study from Kwame Nkrumah University of Science and Technology in Ghana new promotion standards were developed to discourage faculty members from publishing in questionable journals. A verification process for all publications submitted for promotion has been implemented. Since the implementation in October 2019, 221 researchers have applied for promotion. Our analyses show that one fifth of submitted publications do not meet the criteria. Furthermore, we do not find correlations with the share of verified publications and college or number of submitted publications. The implications of these findings are discussed.

Keywords: questionable journals, predatory journals, promotion and tenure guidelines, case study, implementation of promotion standards

Introduction
Discussions on publishing through questionable or even predatory outlets and how these impact the scientific literature has recurred frequently in many research communities. There are plentiful of warnings and thus recommendations to avoid these publication outlets1-6. However, these publication outlets can be difficult to both characterize as well as identify which makes it difficult to determine appropriate actions against them7-10.
A first step is to address the researchers engaging with these journals. The problem would be solved if researchers weren’t engaging with these journals. There are numerous reasons for engaging with a questionable publication outlet and nuances to our understanding of these issues are continuously added11. Among the contributing factors are the following12:
Previous experiences of rejection
- Finances
- Knowledge of the field
- Career requirements and other contextual considerations

The author may have had many previous experiences of rejection and may therefore target what they expect to be a low barrier publication outlet. Finances may also be a reason for choosing certain journals. Some researchers cannot afford the high article processing fees charged by some journals. Another financial aspect is that some institutions pay by the paper, and the payout may depend on the publication outlet. Furthermore, institutions often rely heavily on the number of publications when considering promotions and thereby create incentives for questionable publishing. Little knowledge of the field and the publication outlets within the field may influence the choice of journal as the choice may be less informed. Finally, when a researcher applies for a faculty position or a promotion, more publications and editorial board involvement may be an advantage and that may be a reason for engaging with a questionable journal.

A recent review of the literature suggests that publishing decisions should to be understood situated within a system of incentives, pressures and expectations. If authors are pressured or expected to publish in a certain set of journals and they are given incentives to do so, we would expect to see more publications in these journals. Another recent review suggests that it is commonly believed that publishing in a questionable journal is a career risk; however, the literature suggests that publishing in questionable outlets is considered an advantage by the scholars during promotions and research grant applications. Consequently, the universities play a key role in addressing the issue. Frequently, actions from universities are called for to be more proactive in directing their faculty members toward appropriate and legitimate publication outlets.

Tenure and promotion standards should be developed to discourage faculty members from publishing in questionable journals. However, recent studies show that the majority of academic promotion and tenure criteria as well as guidelines do not describe how the committee assesses the quality of a journal. Furthermore, in-depth studies of the institutional and departmental factors encouraging and discouraging questionable publishing is called for. The present study aims to provide some of this insight by presenting a case study of the implementation of tenure and promotion standards that discourage publishing in questionable journals.

Verification of publications at Kwame Nkrumah University of Science and Technology
In October 2019, Kwame Nkrumah University of Science and Technology in Ghana implemented a verification process for all publications submitted for promotion. The Kwame Nkrumah University of Science and Technology (KNUST) was originally established by as Kumasi College of Technology in 1951 and converted to a university in 1961. It is a large state university serving the Ashanti region with over fifty thousand students and about four thousand staff members. The university consists of six colleges: College of Agriculture and Natural Resources (CANR), College of Art and Built Environment (CABE), College of Engineering (CoE), College of Humanities and Social Sciences (CoHSS), College of Health Sciences (CoHS) and College of Science (CoS).

The new promotion standards were developed to discourage faculty members from publishing in questionable journals. The standard was developed by the Senior members appointment and promotion review committee. It was presented to and approved by the University Academic Board. The promotion guidelines state that applicants are encouraged to publish in the following publication outlets:

- Publication outlets indexed in a specified list of databases
- Publication outlets published by a specified list of publishers

It is essentially a whitelist consisting of recommended publication outlets. The list is not detailing publication outlets at the journal level. Rather the list contains publishers, bibliographic databases and
journal characteristics (e.g. institutional journals). All of the journals published by the publishers, indexed in the databases or having the characteristics mentioned on the list are included on the university whitelist. This means that the list does not have to be maintained on a detailed level by the university.

The promotion guidelines also stress that applicants are not limited to the lists. The publications submitted by the applicant are verified and the publication outlets are described in terms of indexing in databases and publishers by a librarian in the university. A report is compiled which is handed over to the assessment committee before processing the application. The implementation of the new promotion guidelines took place in October 2019 and the first publication verifications were initiated in 2019 but the reports were compiled and finished in 2020 and 2021. Consequently, this study includes all reports initiated after the implementation and completed at the time of data collection.

Methods
All promotion applications since the implementation of the new promotion guidelines are included in this study. Some of the promotions were not granted but regardless of outcome the reports are included. Each report specifies the name of the applicant, name of the college, number of publications submitted, number of publications published and indexed in the listed databases and publishers. Furthermore, the report includes details of the person responsible for compiling the report and the sources used to locate the publications. Finally, the report contains a detailed description of each publication outlet for all submitted publications.

For the purpose of this study, we extracted the following information manually from each of the reports:

- Name of the college
- Date of the report
- Number of publications submitted for promotion
- Number of papers published in the publication outlets listed and/or indexed in the listed databases.

The publications that are not verified by the library staff are analyzed in this study. There is a remarkable interest in the academic communities to discuss specific entries on black as well as whitelists. The journals are cross-referenced with the list of predatory reports provided by Cabell’s as well as the list of journals under review for Predatory Reports. Furthermore, the list of indexed journals in Directory of Open Access Journals (DOAJ) is also used to describe the journals. The journals in DOAJ are assessed according to a set of criteria which also provides us with a measure of journal quality. The results are analyzed using descriptive statistics and graphic illustrations. We analyze potential differences in the share of verified publications across colleges, time and number of submitted publications. We analyze if the differences in means are statistically different at the 0.05 level.

Results
A total of 221 researchers applied for promotion from October 2019 to the data collection in this study took place in October 2021. The applicants are affiliated with the following colleges: College of Agriculture and Natural Resources (n=20), College of Art and Built Environment (n=23), College of Engineering (n=39), College of Health Sciences (n=67), College of Humanities and Social Sciences (n=22), College of Science (n=50).

The mean share of verified publications is 79.7 which means that the library staff can verify 4 out of 5 publications listed by an applicant for promotion. However, some applicants submit publications that can all be verified, and some applicants submit publications of which none can be verified. Consequently, we need to consider the confidence interval i.e. the mean of our estimate plus and minus the variation in that estimate. In this case the mean is 79.6 percent (95% CI= 76.4, 82.9).
We now turn to the differences across colleges. Applicants from the six colleges submitted publications that could be verified in 67.9 (95% CI = 54.8, 80.9) to 86.4 (95% CI = 82.0, 90.9) percent of the cases. This means that depending on the college we find that applicants submit publications that can be verified in 2 out 3 cases (College of Art and Built Environment) to 5 out of 6 (College of Health Sciences). Figure 1 illustrates the percentages of verified publications for each college including the 95% confidence interval marked with a line. The larger confidence intervals for three colleges (College of Agriculture and Natural Resources, College of Art and Built Environment and College of Humanities and Social Sciences) are tied to the smaller sample sizes. We find that applicants from some colleges generally submits more publications for promotion that can be verified using the stated criteria. College of Health Sciences have the highest number of verified publications per applicant on average and it is statistically different from the average number of verified publications submitted by applicants from College of Art and Built Environment. The other colleges have very similar average shares of verified publications submitted by the applicants.

![Figure 1. Share of verified publications for each college in percentages. The 95% confidence interval marked with a line.](image)

Next, we explore if the number of submitted publications are correlated with the percentages of verified publications. The number of publications submitted for promotion is tied to the seniority of the promotion applied for. There are only few submitted publications for a junior position whereas for a full professor the minimum of submitted publications is 15 as stated in the promotion guidelines. Authors of publications in questionable journals are typically young and inexperienced and we would expect lower percentages of verified publications for junior faculty members. Figure 2 shows the mean percentages of verified publications for applicants submitting up to ten publications, 11 to 14, and 15 or more publications.
Surprisingly, there seems to be very little difference in the percentages of unverified publications submitted for promotion between these three categories of applicants. Consequently, we assume that the submission of publications in questionable journals are not tied to seniority in this case study. We also analyse differences over time in the share of verified publications. However, as the new promotion guidelines were implemented in October 2019 there is not enough time for us to detect any changes and therefore the analysis does not reveal any changes over time. Finally, we have examined the publications that were not verified by the library staff and the results of the analysis are available in Table 1.

<table>
<thead>
<tr>
<th>Publication outlet listed in Cabell’s predatory reports</th>
<th>Publication outlet listed in Cabell’s list of journals under review for Predatory Reports</th>
<th>Not verified but on the list of recommended publication outlets</th>
<th>Publication outlet could not be identified</th>
<th>Open access publications indexed in DOAJ</th>
<th>Open access publications indexed in DOAJ</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.1%</td>
<td>18.0%</td>
<td>0.8%</td>
<td>4.2%</td>
<td>26.9%</td>
<td>1.6%</td>
<td>≈100%</td>
</tr>
</tbody>
</table>

Table 1. Characteristics of publications not verified by library staff.

Table 1 shows that 66.1% percent of the publications not verified by the library staff can be found in either Cabell’s predatory reports or Cabell’s list of journals under review for Predatory Reports. Consequently, these publication outlets are not recommended for promotion. Furthermore, 4.2% publication outlets could not be identified using their own website, bibliographic databases or other means of identification. For less than 1% the publication outlet is not verified by the library staff although it is on the list of recommended publication outlets. Lacking verification in this case is likely due to human error. However, the staff members applying for promotion can contact the librarian in the university responsible for drafting the report and have it corrected. Finally, the remaining 28.5% of publications not verified are not on the university whitelist but they are not registered on the lists by Cabell’s either. Consequently, we need to know a little more about them to be able to describe them. Out of these only few are indexed by DOAJ even though they are open access (only 1 in 20). This does give us an indication of the quality of the journals as journals in DOAJ are assessed according to a set
of criteria prior to being included. These journals have generally either failed to apply for acceptance by DOAJ or they have failed the assessment which gives us cause for concern in terms of their quality.

Discussion and conclusion
Summing up the results, the implementation of new promotion guidelines at KNUST to discourage the use of questionable publication outlets by faculty members means that all publications submitted for promotion are verified by members of the library staff using specified lists of publishers and indexing services. We examine all the promotion reports since the implementation and find that 79.6 percent (95% CI= 76.4, 82.9) of publications submitted by applicants could be verified. Furthermore, we find that the percentages of verified publications can be tied to college in some cases. Applicants from some colleges generally submits more publications for promotion that can be verified using the stated criteria. College of Health Sciences have the highest number of verified publications per applicant on average and it is statistically different from the average number of verified publications submitted by applicants from College of Art and Built Environment. Comparatively, all the other colleges share a similar percentage of verified publications submitted by applicants. Finally, it appears that there are no significant differences between the number of submitted publications for promotion and the share of unverified publications. Seniority does not seem to be a contributing factor to the submission of publications in questionable journals for promotion.

The present study has some limitations that should be considered. First, this study only examines the publications submitted for promotion and not the entire oeuvre of scholar. This means that the number of publications in questionable outlets may be underestimated. However, as we are focusing on the promotion process, we have limited our sample to the publications submitted for promotion. Second, very few universities have implemented criteria for how the committee assesses the quality of a publication outlet for academic promotion and tenure. Consequently, we are reporting the results of an implementation of such criteria in a single university and more studies are needed to enable generalization. Finally, the lists of indexing services and publishers recommended to researchers may vary from one university to another and the lists in themselves are not the focus of this paper. However, we need to acknowledge that there are no correct lists and recommending other lists of indexing services and publishers may lead to different results.

Unexpectedly this study does not find a correlation between the share of publications in questionable journals and seniority (as defined by the total number of submitted publications). The existing studies of authors of papers published using questionable publication outlets clearly show that the authors are young, inexperienced and some regions are overrepresented. An explanation may be that we are only examining the publications submitted for promotion and the applicants obviously select their best work for the application. Another explanation may be that the questionable publication outlets are used across the faculties because it is believed that publishing in a questionable journal is not a career risk, on the contrary it is considered an advantage by the scholars during promotions and research grant applications. In some cases joint authorship by lecturers with their postgraduate students imply that the students decide the publication outlet and they are not aware of the quality of the journals submitted to and fail to seek guidance from their supervisors before submitting their manuscripts. Some lecturers are in a hurry to apply for promotion, so they settle on any journal without doing due diligence. Another factor is that the faculty members fail to seek guidance from the library staff. Consequently, the implementation of the new promotion guidelines are likely to change these views as these publications can no longer be considered for the application for promotion.

Furthermore, this study shows that among the publications that are not verified by the librarians we find that 66% are published in publication outlets that can be found in either Cabell's predatory reports or Cabell’s list of journals under review for Predatory Reports. Furthermore, 26.9% are open access but the journal is not indexed in DOAJ which also gives reason for concern regarding the choice of publication outlet as DOAJ applies a number of quality criteria for a journal to be indexed in the
Lacking verification of the publication outlet although on the university whitelist or indexed in DOAJ occurs in only 0.8 and 1.6% respectively. Taking into consideration that the faculty member applying for promotion can contact the librarian and comment on the report which can lead to a revised report, we would consider this verification process a valuable contribution to discourage faculty members from questionable publishing.

KNUST implemented the promotion criteria to discourage the authors from using questionable publication outlets. Obviously, these recommendations may result in changing publication patterns by the faculty members over time. Many studies have explored the potential impacts of evaluative metrics on knowledge production and it has been argued that researchers will change their publication behavior to optimize the evaluation of them through various unethical tactics. However, it is difficult to identify the causal effect of research policies on research performance and research policy regimes cannot be accurately assessed in terms of their differential effects by simply identifying research policies and their year of implementation. However, it will nonetheless be interesting to see the impact of the revised promotion guidelines at KNUST in the years to come.

Academic libraries are considered a significant resource for faculty members, mentors, committees, and deans related to publishing practices and questionable journals. In this case study the librarians in the university stress that they are not assessing the quality of the work but only making recommendations regarding the publication outlet. The library is involved in the verification of the publications but of course researchers have also started contacting the librarians in the university when planning their promotion application. Furthermore, the library is now increasingly involved when researchers are deciding on a publication outlet.

Summing up, about 1 in 5 publications submitted for promotion at KNUST cannot be verified by the librarians in the university. There seems to be differences across colleges although not all statistically significant at the 0.05 level. Furthermore, this study cannot find a correlation between the number of submitted publications and the share of verified publications. Consequently, seniority is not a factor in the amount of publications in questionable publication outlets submitted for promotion this case study.

References


