To Open or Not to Open: An Exploration of Faculty Decisions to Publish Open-Access Articles

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To Open or Not to Open: An Exploration of Faculty Decisions to Publish Open-Access Articles

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ABSTRACT

Introduction: Faculty face numerous pressures as they decide whether to publish articles open access (OA). This pilot study investigated the extent to which School of Education faculty members' engagement with OA was influenced by promotion and tenure (P&T) and how this influence related to other intrinsic, extrinsic, and contextual factors.

Methods: This exploratory, sequential, mixed-method study adapted Social Exchange Theory to understand faculty engagement with OA article publication. The study used a quantitative survey followed by qualitative interviews and focus groups.

Results: Participants reported that P&T had substantive influence over faculty practices regarding OA. Connected factors included beliefs about OA journal quality, colleagues' perceptions regarding OA, and OA articles' wider impacts.

Discussion: P&T was an important driver in article publishing decisions. However, when discussing OA in P&T, faculty also discussed a range of related issues such as OA journal quality. Furthermore, OA adopters tended to be those who have even stronger beliefs about the impact of OA than about OA's role in P&T.

Conclusion: Advocates for increased OA should look at P&T policies as a place for making changes in OA publishing in their Schools of Education. Advocates can also look at connected concepts such as raising awareness of the quality of OA journals to bolster engagement with OA.

Keywords: open access, promotion and tenure, faculty publishing behaviors, open access articles, faculty motivations, school of education, faculty engagement

IMPLICATIONS FOR PRACTICE

1. Most faculty who publish open access (OA) do it in spite of perceptions that promotion and tenure (P&T) does not value OA publishing, not because of perceived P&T benefits.

2. P&T is an important factor and may override other drivers influencing faculty decisions to publish articles OA. As such, librarians should advocate for changing P&T guidelines to encourage OA article publishing.

3. Librarians can draw on a knowledge of what beliefs and motivations are held by faculty who publish OA to understand what advocacy has resonated previously and to shape future advocacy.

4. Librarians can shape OA support and education around factors other than P&T (e.g., journal trustworthiness or reputation) to change general perceptions of OA so that all faculty value OA articles equally with traditional ones.

INTRODUCTION

This article reports on the results of a pilot study exploring the influence of promotion and tenure (P&T) policies and procedures on faculty publishing open access (OA) articles at Virginia Commonwealth University (VCU). VCU is a large university with the R1 Carnegie classification located in the mid-Atlantic region.

This study investigated the motivations of faculty at VCU's School of Education (SOE) behind faculty decisions to participate in certain open practices, specifically publishing OA articles, publishing OA monographs, and customizing or creating open educational resources (OER). In this article, we will focus on the portion of the study dedicated to OA articles, which were defined as those that are free to access (i.e., available without subscription or payment). This study did not include open licensing as part of this definition.

Although OA has demonstrated benefits, its adoption across the academy, including at VCU, has been uneven. Whereas many might read or use resources, fewer are actively publishing

OA. Anecdotally, many librarians can share conversations, especially with non-tenured but tenure-track faculty, in whom faculty's interest in publishing OA was sidelined because it was not valued by their peers, department, or P&T guidelines. This research aimed to move these reactions from the anecdotal to the data-based and to generate key findings that can inform the pathway to increased faculty engagement with open practices.

With these aims in mind, the authors used a mixed-methods approach to answer the following research questions (RQs):

- RQ1: To what extent is faculty engagement with open practices influenced by P&T policies and procedures?
- RQ2: How does the influence of P&T policies and procedures on faculty engagement with open practices manifest in relationship to other factors, including intrinsic, extrinsic, and contextual factors?

LITERATURE REVIEW

Introduction to open practices and benefits

Although faculty strive to produce valuable scholarship and teaching materials, the reach and impact of those materials can be limited based on the avenues through which they are shared. Open practices such as OA publishing have emerged as an option to increase access to scholarly outputs by removing financial, legal, and technological barriers to access and reuse of scholarship (Suber, 2002). By removing these barriers, open practices advance access, collaboration, innovation, discovery, and translation of research into real-world impact.

Numerous studies have found that OA articles receive more citations than articles that are only accessible via a subscription, as well as increased readership (Lewis, 2018; Piwowar et al., 2018; Piwowar et al., 2019; and Arendt et al., 2019). Despite these demonstrated benefits, engagement with open practices remains surprisingly low. Piwowar et al. (2018) estimated that only 27.9% of the total articles published are either available freely on the publisher's site or as a free version in locations such as institutional repositories.

Promotion and tenure influence over faculty decisions

Following P&T guidelines at the institutional, school, and departmental levels are key to a faculty member's career trajectory, reputation, and, in the case of obtaining tenure, retention. As such, "Review, promotion and tenure (RPT) processes are a cornerstone of academic life at

higher education institutions in the United States and Canada" (Alperin et al., 2019, p. 1). Faculty, especially early-career faculty, take heed of cultural norms and P&T documentation to ensure success in their careers. Niles et al. (2020) found that untenured faculty were more likely to value journal prestige and metrics that are clearly articulated in P&T guidelines, whereas tenured faculty were less likely to value these factors.

P&T documentation typically outlines three areas of focus, i.e., teaching, service, and research, although the interpretation of each category and its relative weight can vary by institution and discipline (Schimanski & Alperin, 2018). In faculty interviews conducted by Harley et al. (2010), faculty within disciplines in which speed to publication was seen as essential commonly reported sharing preprints and working papers before formal publication, whereas, in other disciplines, these practices seemed to be nonexistent or even disparaged. The authors concluded that "the academic values embodied in disciplinary cultures, as well as the interests of individual players, have to be considered when envisioning new schemata for the communication of scholarship at its various stages" (Harley et al., 2010, p. 3).

Current landscape of open practices in P&T policies

Owing to the potential influence of P&T on faculty behavior, proponents of open practices have posited that including explicit references to open practices in these policies could increase faculty engagement. However, the inclusion of open practices into P&T documentation remains relatively small. Out of 219 universities studied in the United States and Canada, Alperin et al. (2019) only found explicit references to "open access" in documents from 5% of institutions. Furthermore, most of these mentions were calls for caution around OA publishing rather than promoting it as a way to provide public access to research, whereas none "actively encourage or explicitly value open access." Currently, neither the VCU Faculty Promotion and Tenure Policies and Procedures (2013) nor the VCU School of Education Policies and Procedures (2016) documents address open practices.

Impact of P&T policies privileging traditional models for scholarship and teaching

Further complicating support for open practices in P&T is the tendency for most policies to privilege traditional models of scholarship, such as a reliance on citation metrics and emphasis on publishing in journals with high impact factors (Alperin et al., 2020; Harley et al., 2010; McKiernan et al., 2019; and Schimanski & Alperin, 2018). Some institutions even provide a list of first- and second-tier journals accompanied by standards for how many articles faculty need to publish in each tier for their dossiers to be received favorably for promotion (Schimanski & Alperin, 2018). This emphasis on prestige often comes accompanied by advice

to avoid trying emerging or nontraditional-seeming dissemination in favor of focusing "on publishing in the right venues" (Harley et al., 2010, p. 11).

This emphasis on traditional methods of publication can cause those interested in open practices to hesitate for fear that falling outside the avenues articulated in P&T policy will not lead to career advancement. Research suggests that a significant factor for predicting OA publication is faculty perception that OA would either be acceptable within P&T policies or would not adversely impact their P&T success (Lwoga & Questier, 2014; Kim, 2010).

Other factors influencing engagement with open practices

Although P&T exerts a strong influence over faculty decisions, especially regarding whether to publish OA, it is not the only influencing factor. Determining the strength and limitations of P&T influence, as well as identifying and understanding the influence of other significant factors, is necessary to identify the most effective methods for increasing faculty engagement with open practices. Some studies have used social exchange theory (SET) to study the vast variety of factors, including social factors such as peer opinion, that influence faculty engagement with open practices (Lwoga & Questier, 2014; Kim, 2010).

METHODS

This exploratory pilot study used SET as a framework to explore factors, including P&T, that may influence faculty engagement with open practices. In addition to individual characteristics such as faculty classification/rank and previous engagement with open practices, we explored factors organized under the following five categories:

- Facilitating conditions, or conditions that help or hinder engagement with open practices (e.g., funding support from institutions or granting agencies for Article Processing Changes (APCs) or institutional support for identifying an open journal).
- Costs, or any real or anticipated effort, loss, or sacrifice necessary to engage with practices (e.g., required monetary cost or time commitment).
- Intrinsic factors, or internal motivations (e.g., belief in the principle of free access to teaching and research materials).
- Extrinsic factors, or external motivations (e.g., P&T expectations or the reputation of the journal).
- Contextual factors, or contextual and environmental influences (e.g., peer perception of open practices or departmental culture).

Because P&T policies and faculty expectations vary by discipline, this study began our exploration into incentives and barriers to open practices by focusing on one discipline, i.e., education, through the VCU SOE. Our target population was SOE faculty who are classified as "term" (VCU's label for annually contracted faculty) or "tenure-track" at all ranks (Instructor, Assistant Professor, Associate Professor, Professor). Because adjunct faculty are not subject to promotion and similar reward policies, they are outside of the scope of this study.

The pilot study employed a mixed-methods sequential explanatory design. All study procedures were reviewed and approved by the local institutional review board. In the first phase of the study, quantitative data were collected through an electronic survey administered through REDCap (Appendix 1). The survey included questions regarding productivity, views of P&T, demographics, and Likert-type scale ratings asking for agreement with factors inspired by Lwoga and Questier (2014) (Table 1). For an example of a factor, see the sample item in the "OA articles" row of Table 1. Because Lwoga and Questier focused on the use of institutional repositories, we adjusted our instrument to fit our current context (e.g., education) and the factors relevant to the currently explored open practices. The five-point Likert-type responses options were strongly agree, agree, neutral, disagree, and strongly disagree.

Survey Section	Description	Sample item
Open practice engagement	Number of times faculty used open practices in the past 5 years	"In the past 5 years, about how many times have you shared your materials in each of the following ways: Published an article in a fully open access journal."
P&T Values	Faculty perceptions of P&T policy	"How much do you agree with the following statement: The benefit of scholarly work and research products to society should be a key measure of research performance for tenure and promotion processes."
OA articles	Faculty perceptions regarding publishing OA articles	"My school will accept open access articles as evidence for tenure and/or promotion.
Demographics	Gender, age, faculty classification status, rank	"What is your faculty classification?"

OA, open access; P&T, promotion and tenure.
Table 1. Summary of quantitative measures (selected).

The survey instrument was pretested with faculty from a different VCU school and refined based on this initial feedback. The survey was disseminated to all members of the target population in the SOE (100 faculty members). Owing to the small population size, we prioritized

confidentiality by limiting the amount of demographic information collected (e.g., we collected rank but not specific department). Surveys were disseminated via email and were open for 6 weeks.

In the second phase, we expanded on the quantitative findings by conducting interviews and focus groups. Questions for phase two were developed based on results from the phase one survey. Questions included the following:

- What factors influence where you publish your journal articles?
- Did your engagement with open access journal publishing change when you received tenure? If so, how?
- How do you think promotion and tenure committees perceive open access journal publishing?

We conducted eight faculty interviews and three focus groups, which were recorded, transcribed, and anonymized before analysis. The target population for this phase was, again, all VCU SOE term or tenure-track faculty. Tenured faculty were invited to participate in an interview in an attempt to maintain higher levels of anonymity because questions for this group included those regarding P&T committees. Term faculty were invited to participate in focus groups owing to nonsensitive questions and a desire to gather a larger participant pool. Non-tenured tenure-track faculty were invited to participate in either a focus group or interview in an attempt to oversample this key population, which was under-sampled during phase one.

ANALYSIS

Quantitative relationships from the survey data were analyzed in Stata, whereas qualitative transcripts were coded and analyzed using Dedoose, a tool for qualitative and mixed-method data analysis (Creswell & Creswell, 2018). For the qualitative analysis, we initially developed an *a priori* code structure in alignment with the survey instrument, with codes grouped under the five guiding categories based on the research questions, the Lwoga & Questier (2014) article, and related literature. We initially leaned toward a "splitting" approach, i.e., creating narrower codes wherever possible. When testing the codebook against one randomly selected interview, we discovered that this narrow categorization made coding too difficult because normal discussion did not fit narrow categories easily, blended concepts, and used words ambiguously. Therefore, we revised the coding tree to a more "grouping" approach, using two levels of concepts. The first level was one of the five guiding categories, with the second level narrowing in on specific aspects of that category such as altruism under intrinsic factors or

P&T under extrinsic factors. An optional third-level specifier reflected whether the participants were talking only about articles or OER (Appendix 2). The revised coding tree also stayed closer to the Lwoga and Questier (2014) model.

Qualitative "validity" and trustworthiness

Following the codebook revisions, we decided it would be more beneficial for intercoder reliability to have fewer coders. We opted to have the open-focused subject matter experts and the graduate assistant take on coding responsibilities.

Using the Dedoose training center, the principal investigator created the base code. However, the selected sample (the second half of the same randomly selected interview) proved complicated because the sample did not include a comprehensive selection of the codes. Additionally, Dedoose requires at least two instances of each code for the code to be included in the test. Therefore, some of the codes assigned by the principal investigator were not shared with the other two testers, including two excerpts with no code and a few excerpts missing a second code. Although partially a result of human error in setting up the training, these issues still resulted in a lower Kappa score.

Instead, the three coders decided to randomly select an additional interview to code as a team. Over two sessions, we worked through the interview, discussing excerpt selection and associated codes for each selection, to help further refine the codebook examples and build a firm foundation for coding the rest of the transcripts independently. This investigator triangulation is a technique to improve the trustworthiness of the codebook and code definitions (Archibald, 2016). We continued to use this approach for all of the transcripts ($n = 11$), using the refined codebook and code definitions.

RESULTS

Full deidentified response level data sets are available in the associated data files for further exploration of results (see Kirschner et al., 2023). Here are findings that most effectively address the research questions.

Quantitative results

Fifteen faculty members participated in the survey (Table 2). In this article, "tenure-track" is used to categorize those participants who are on the tenure track but have not yet received tenure ("tenured"). "Term" is VCU's label for the category of annually contracted faculty.

Measure	n	%
Faculty Classification:		
Tenured	7	46.67%
Term	7	46.67%
Tenure-Track	1	6.66%
Current Rank:		
Professor	2	13.34%
Associate Professor	6	40.00%
Assistant Professor	7	46.66%

Table 2. Descriptive statistics for survey demographic data.

Participants shared their perceptions toward a variety of factors that may ultimately shape their engagement with OA publishing (see Appendix 1). Participants expressed mixed perceptions surrounding how OA related to P&T processes and policies (Figure 1).
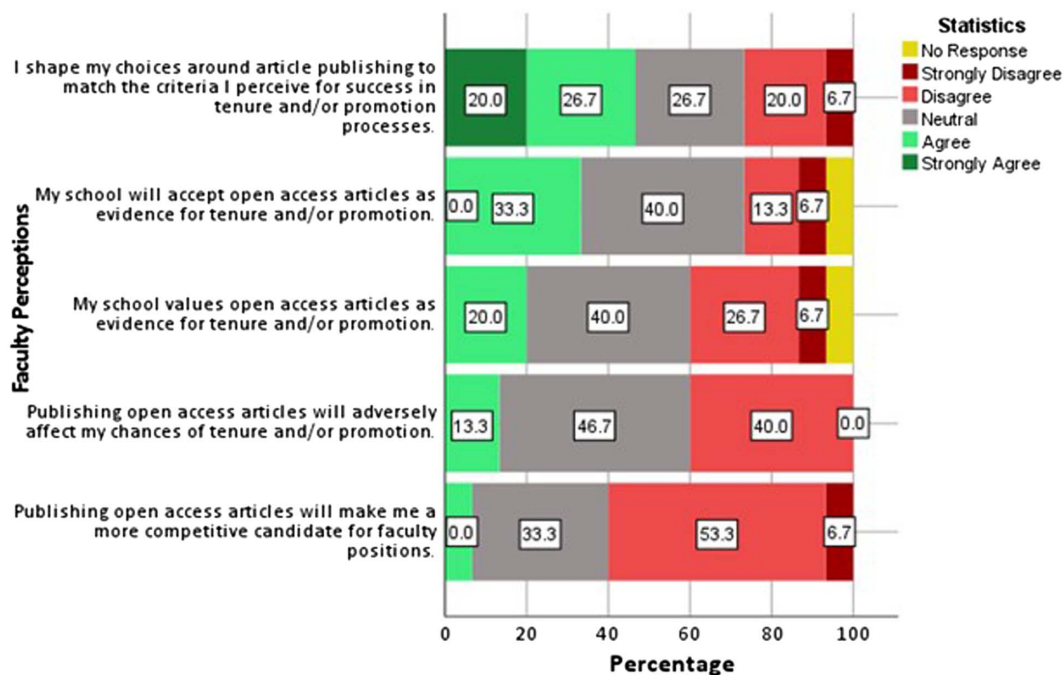
Figure 1. Faculty perceptions of open practices and P&T processes and policies.

Conversely, participants were overwhelmingly in favor of the concept of open access (Figure 2).
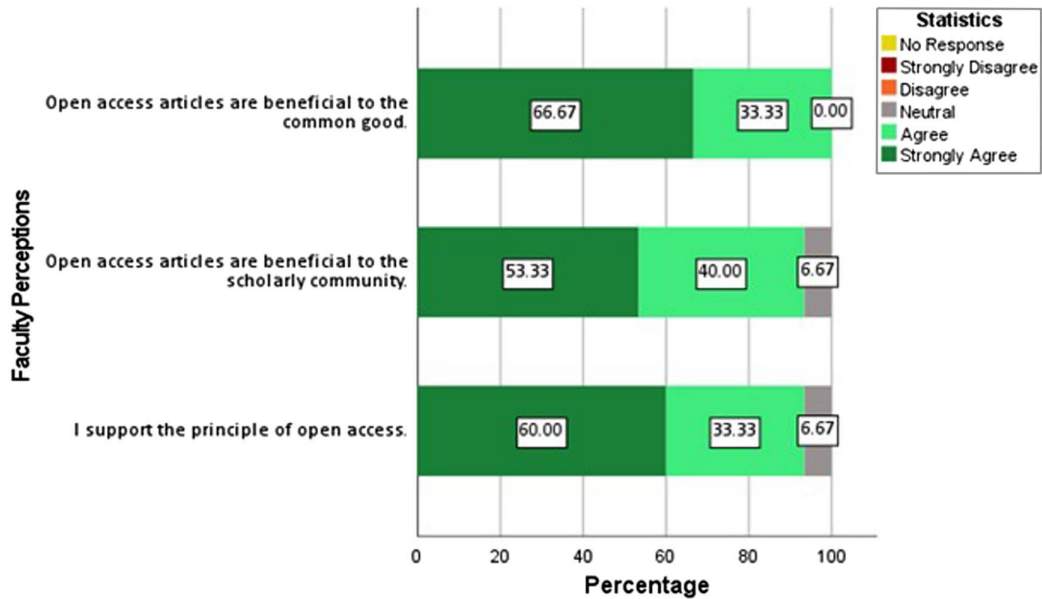
Figure 2. Faculty perceptions of value of OA as a concept.
OA, open access.

The survey also asked faculty to self-report how they shared their scholarly research or teaching materials, with questions for general publishing practices and, more narrowly, open publishing practices (see Appendix 1). All faculty classes reported publishing in both peer-reviewed subscription access and OA publications (Table 3), although not all term faculty reported publishing articles openly.

Faculty Classification Reported	Number of Faculty with Peer-Reviewed Publications	Number of Faculty with OA Publications
Tenured	6	6
Tenure-Track	1	1
Term	4	1
No Response	1	1
Total	12	9

Table 3. Crosstab of open publishing practices.

Using these self-reported levels of publishing, we analyzed how various factors related to open publishing practices. Our operational definition of open publishing practices is the reported level of OA publishing as a proportion of overall publishing, based on the reported number of peer-reviewed publications (overall publishing) and OA publications in a fully OA journal or

journal with an OA option (OA publishing). We organized those rates into categories of high = 67% or more; medium = 34% to 66%; low = 1% to 33%; and no = 0%. With these categories in mind, we calculated relationship strength with the nonparametric test Kendall Rank Correlation Test to determine the correlation coefficient τ. Correlation is used to indicate the relative strengths of associations among variables. Because the responses are ordinal (i.e., categories with ranks of strength such as a high proportion of OA articles or strongly agree with a statement), nonparametric testing is appropriate. The τ values resulting from this analysis were used to rank which survey answers have the strongest to weakest relationships to survey participants' open publishing practices.

To help explore RQ1, we began the exploration of the relationship between factors and open publishing practices by analyzing responses to the survey question "I shape my choices around article publishing to match the criteria I perceive for success in tenure and/or promotion processes" (Table 4). This question asked respondents to directly report their intent to shape article choices around P&T and their open publishing in practice.

Open Publishing Practices: Proportion of Open in Overall Publishing Output	I shape my choices around article publishing to match the criteria I perceive for success in tenure and/or promotion processes.						
	No response	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
No	0	0	1	1	1	0	**3**
Low	0	0	0	1	1	2	**4**
Medium	0	0	1	1	2	1	**5**
High	0	1	1	1	0	0	**3**
	0	**1**	**3**	**4**	**4**	**3**	**15**
Strength of association (nonparametric Kendall Rank Correlation Coefficient) $\tau = 0.25$							

Table 4. Crosstab of key survey question for RQ1 and proportion of open publishing output.

This survey question demonstrated a Kendall Rank Correlation Coefficient of $\tau = 0.25$ with open publishing practices. This coefficient demonstrates a noticeable relationship between the intent to shape publishing around P&T and the proportion of articles published as OA, although the literature varies on whether to describe that as weak or moderate. We use this correlation coefficient as a key benchmark to understand the relative strength of influences on our respondent pool's decision to engage in open practices compared to their drive to align with P&T requirements.

To begin to explore RQ2, we examined the strength of the relationship between the remaining survey answers and open publishing practices. We expanded the analysis in Table 4 to each Likert-type survey answer. By ranking these tau-b values in order of magnitude (or absolute

value), we determined which question and corresponding factor most closely related to open publishing in practice. Furthermore, by looking at which questions demonstrated a greater strength of relationship than the question about shaping publishing choices around P&T ($\tau > 0.25$) (Table 5), we outlined which influences have a stronger relationship with open publishing than the relationship of open publishing with the intent to align with P&T requirements.

Survey Question	τ	Category/Factor (from Codebook)
Open-access articles are beneficial to the common good.	0.47	IF_Altruism
Publishing open access articles will increase the potential impact of my work.	0.46	EF_RecogPub
Publishing open access articles will widen the readership of my scholarship among peers in my field.	0.4	EF_RecogPub
Publishing an open access article will help other researchers build on my research findings.	0.4	IF_Altruism
Open-access articles are beneficial to the scholarly community.	0.4	IF_Altruism
Publishing open access articles will increase the chance to communicate my research findings to those outside of the academy, including community members, practitioners, or policy makers.	0.37	EF_RecogPub
Publishing open access articles will increase my visibility within the discipline(s) to which I belong.	0.36	EF_RecogPub
If I publish an open-access article, readers may plagiarize or not cite my work.	−0.36	Costs_attribution
My school values open access articles as evidence for tenure and/ or promotion.	−0.32	EF_PromTenure
Publishing open access articles will make me a more competitive candidate for faculty positions.	−0.31	EF_PromTenure
I have the knowledge/ability to easily publish an open access article.	0.31	IF_Knowledge
Open access journal articles will be cited more frequently.	0.3	EF_RecogPub
I shape my choices around article publishing to match the criteria I perceive for success in tenure and/or promotion processes.	0.25	EF_PromTenure

n.b.: The "Category/Factor" column in Table 5 lists the parent category and specific factor for each survey question, as aligned with our qualitative codebook. EF, extrinsic factor; IF, intrinsic factor.

Table 5. Correlation of selected survey questions with open publishing practices (ranked by Kendall Rank Correlation Coefficient magnitude).

Qualitative results

Eleven faculty members participated in an interview or focus group (Table 6).

Measure	Interviews		Focus Groups	
	n	%	*n*	%
Faculty Classification:				
Tenured	6	40%	0	0
Term	0	0	6	40%
Tenure-Track	2	13.33%	1	6.67%
Current Rank:				
Professor	1	6.67%	1	6.67%
Associate Professor	5	33.33%	1	6.67%
Assistant Professor	2	13.33%	5	33.33%

Table 6. Demographics of interview and focus group participants.

Interview and focus group transcripts were reviewed for instances that aligned with our codebook (Appendix 2). Costs_Attribution_JOA and the general categories of EF_Broadly, EF_Trust, and FC_Broadly_JOA did not appear in any transcripts. The remaining codes 35 general or OA codes appeared at least once across our qualitative data. Table 7 presents codes that appear more than 20 times, indicating a significant influence on faculty decisions related to OA. Sample quotes are included to provide a typical example of sentiments associated with each code.

Code	Number of Occurrences	Sample Quote
EF_PromTenure_JOA	50	"… but definitely considerations about getting promoted to full professor are foremost, in my mind, and I have to. So no, until those publications are valued by university, no, until those are really valued by university because they're not going to be in the top tier."
EF_Trust_JOA	44	"Anything where you have to pay to publish is highly suspect. And as soon as I see that, I don't even want to look at it, to be honest."
EF_RecogPub_JOA	41	"Well, for me, I have many more international readers in open access than I have normally."
EF_PromTenure	38	"I don't think anything can take precedence over promotion and tenure because it's the only way that we as faculty can get a pay raise and to have jobs, more job security."
CF_Culture_JOA	30	"I mean, I know the journals in my field, and I know that the top ones are not open."

Table 7. Overall code occurrence. **(Table continues on following page)**

Code	Number of Occurrences	Sample Quote
CF_Influence_JOA	30	"And so, I think if more information about the benefits of publishing open access and the legitimacy and the value was not just with junior scholars but also with senior scholars in the field, then I think that would help with that, like, almost a stigma. Because I've definitely had senior scholars who are on articles with me say, 'don't send it there because it's open access.'"
Costs_Monetary_JOA	21	"If I could always publish in open access I would, but again my field, and even as I try to branch out into other journals that are related fields, there are very few open access options that don't have a significant financial cost to them."

Table 7 (continued)

Because the coding scheme was nonexclusive, transcript segments could have multiple codes applied to the same or overlapping statements. When multiple codes appear in the same excerpt, it can indicate that the concepts are related or that multiple codes have an influence on one path to decision making. For example, "And again, because it doesn't sort of link in with traditional academic structures and incentives, it's hard to talk with folks about it." This quote touches on P&T, the traditional academic structures and incentives (EF_PromTenure_JOA), and departmental culture (CF_Culture_JOA) around discussing publishing in OA journals, hinting that culture and P&T are tied closely for this faculty's evaluation of OA publications. The data included 67 co-occurring pairs of general or OA codes. Table 8 presents those co-occurrence pairs that co-occurred in the same quotes five or more times. Again, quotes are included to provide an example of typical sentiments associated with each pairing.

Code 1	Code 2	Number of Co-occurrences	Sample Quote
EF_Trust_JOA	EF_RecogPub_JOA	9	"It, it's well respected. The, like, editorial board has all the right names on it. So I think the way they went about it was as a serious journal that's open access. Rather than a fly by night publishing company who sort of jumps on the bandwagon to try to make some moolah on desperate people."

Table 8. Code co-occurrence. **(Table continues on following page)**

Code 1	Code 2	Number of Co-occurrences	Sample Quote
EF_PromTenure	CF_Culture	7	"Yeah, I think disciplinary norms definitely take precedence, but also tenure track faculty in particular—I mean all faculty are focused on what they're going to be rewarded for, you know."
EF_PromTenure_JOA	CF_Culture_JOA	7	"Everybody is so sub-fielded out that, like, I think committees rely a lot on the external reviewers, and that's the purpose of external reviewers in that process."
EF_RecogPub_JOA	EF_PromTenure_JOA	7	"Yeah, I think there will be committee members who discount it if there's no Impact Factor. And I get that. But there are other metrics to look at. Like, for example, there's an open access education journal that I like a lot, that I've published in. You know they publish, like, download numbers. number of readers, number of hits on the website. Like, those to me are the kind of metrics we ought to be looking at, too."
EF_Trust_JOA	EF_PromTenure_JOA	7	"I think, again, it depends, if it were… if it's peer reviewed. I do think that it's one that I would probably make sure to mention in my narrative to try and explain, like, why it's okay, that even if it doesn't have a ranking or an impact factor that it did get peer reviewed in the end. Like it's been viewed however many times. I think I would bring stuff like that up in my narrative. Just to kind of– just make sure that they know that it's had some vetting."

Table 8 (continued)

DISCUSSION

Influence of promotion and tenure

The data seem to suggest that P&T has a strong influence on most faculty's article publication decisions. Almost half of survey respondents (7/15) indicated that they agree or strongly agree that they shape their publishing practices around P&T guidelines, whereas the connection between journal publishing and P&T (EF_PromTen_JOA) was the most prominent code in the qualitative (50). General comments about P&T (e.g., not relating specifically to journals, EF_PromTen) appeared another 38 times, making the topic by far the most common one discussed. Although some questions did focus specifically on P&T, most interview/focus group questions more generally explored the decision-making process around publishing articles; therefore, this high occurrence is likely not tied to question bias.

On an initial closer read, these results seem to show that the more faculty worry about P&T, the less they will publish OA articles. The obvious interpretation would be that they do not feel publishing OA would aid them in a successful P&T claim. Analysis of interview/focus groups shows evidence of a disconnect between P&T expectations and what OA journals offer or are perceived to offer. When discussing recognition and publicity in relationship to journal publishing (EF_RecogPub_JOA), one of the highest occurring codes, participants frequently mentioned that considerations such as journal rankings, impact factors, and the concept of prestige (among journals and editorial board members) are more greatly valued than readership in the P&T process and mentioned that OA journals are not widely considered to be as prestigious. Additionally, participants frequently mentioned that long-standing traditions within academia and disciplinary norms/expectations for how research is published (CF_Culture_JOA) are at odds with OA publishing. This perceived misalignment between perceptions of OA and P&T guidelines led to many participants expressing hesitation at publishing OA.

The survey results also seem to support this interpretation, with respondents with few OA publications indicating that they were more likely to shape their publishing efforts around P&T (1 neutral, 1 agree, 2 strongly agree). Conversely, those who had published a high level of OA articles were as follows: more likely to disagree that their school valued OA articles for P&T, with all responses indicating "disagree;" more likely to agree that publishing OA articles will adversely affect their chances of P&T; and less likely to shape their choices around article publishing to match P&T criteria, including the only "strongly disagree" response.

Because these respondents had a high level of open publishing output, we would guess that their responses are based on their experience with OA publishing. The data suggest that they

made the conscious decision to publish articles in OA venues in spite of, rather than in light of, P&T guidelines.

This adherence to P&T guidelines shaping OA publishing outputs is complicated by those who reported no open publishing output. These respondents primarily selected "neutral" to the questions of the value and adverse impact of OA publication, and their responses to shaping their decisions around P&T also centered around a neutral response. Neutral responses were quite common for the survey's P&T-focused questions: Out of 15 respondents, "my school will accept as evidence" and "my school values OA as evidence" each had 6 neutrals, whereas "OA will adversely impact" had 7. The high occurrence of neutral answers (almost 50% of respondents) seems to indicate that respondents may not be aware of how OA article publishing will be received by P&T committees. Such potential ambiguity in the responses can only emphasize those trends without neutral responses, such as the universal agreement by those with high publishing outputs that VCU does not value OA articles as evidence for P&T.

Relationship of P&T to other factors

The qualitative data seem to suggest that P&T has the strongest influence on publishing practices. Codes related to P&T, both in general and specific to journal publishing, were among the highest occurring. However, P&T-related codes also frequently co-occurred with other codes such as recognition, reputation, publicity, and impact (EF_RecogPub_JOA) and trustworthiness (EF_Trust_JOA), indicating that these concepts were intertwined for many participants. For example, participants expressed that P&T values peer review and, if the OA journal was peer-reviewed, it would not matter whether it was OA. Conversely, participants also highlighted that P&T guidelines and reviewers value the reputation of a journal. Because many OA journals are newer and may lack traditional indicators of quality, such as being included in journal indexes like Web of Science and therefore receiving an impact factor, participants mentioned that it would take time for OA journals to establish reputations and be regarded highly by those overseeing P&T. Both peer review and reputation seem to be prioritized in publishing decisions but only because these characteristics are perceived as valuable for a successful P&T claim.

Culture (CF_Culture, CF_Culture_JOA), which referenced the culture of the school/institution and the wider discipline, also had a strong co-occurrence with P&T (7 co-occurrences each of general and journal-specific references). When discussing culture, participants shared their perception that the value given to OA in P&T may be dependent on the specific makeup of the P&T committee (their knowledge and opinions on OA), not just policy as written. Additionally, external reviewers for P&T dossiers may be from other institutions and may have different opinions regarding OA than the committee members. Even tenured faculty

may still feel the same pressures to align with P&T guidelines for their annual reviews because those who evaluate faculty for annual reviews may feel differently about OA than those who are on P&T committees. These data seem to demonstrate a close relationship between P&T and culture, in which a change to the former will first require a change to the latter because both the culture (discipline, institution, school) and the individuals who make up that culture influence P&T policy creation and interpretation.

Outside of P&T, several highly occurring codes seem to influence faculty decisions regarding whether to publish OA. First, similar to the potential for downstream change due to cultural changes, others within the field may need to support and engage in OA publishing for this practice to be more commonly accepted. Participants acknowledged how the actions of others within the field may influence individual choices related to journal publishing (CF_Influence_JOA, 30 occurrences), including established professional organizations that begin publishing OA journals; prestigious researchers serving on editorial boards of OA journals or publishing in OA journals; and the opinions of mentors, supervisors, and professors during graduate education.

Additionally, trust, recognition, and publicity occurred independently of P&T. In these occurrences, specific contexts could outweigh P&T concerns. For example, author familiarity with and trust in journals can outweigh concerns regarding these journals not being highly ranked (e.g., journals with specific scopes such as research to practice). Meanwhile, the general trustworthiness of journals seemed to increase after participants reviewed the quality of previously published articles and checked the editorial board for peers or leaders in the field. Participants' responses seem to suggest a close relationship between trust in a journal's quality, as well as interest in submitting to said journal for publication, and its editorial board membership and journal reputation, both for OA journals and subscription-access journals.

Interestingly, the quantitative results seem to veer from the qualitative when discussing other influences on faculty decisions, with none of the questions relating to culture or trust receiving a higher tau-b coefficient than shaping decisions around P&T ($\tau = 0.25$). However, recognition and publicity demonstrated a high relationship to faculty choices around publishing OA in both study phases. In the survey, the five questions relating to impact, visibility, readership, and citations evidenced a coefficient greater than 0.25. This indicates that the more likely respondents were to publish OA, the more likely they were to agree that OA would increase their readership, impact, visibility, and citations. In fact, those that had a high publishing output agreed or strongly agreed with all four of these statements, and these responses did not include any neutrals. Although all respondents leaned toward agreeing with these statements, the strong agreement and lack of neutral responses from those with high

publishing outputs seems to indicate that the more strongly those believe in these positive impacts of OA, the more likely they are to publish OA.

Additionally, this veer continues for altruism. In the qualitative data, altruism only occurred 14 times related to journal publishing (IF_Altruism_JOA, 10th highest occurring non-OER code) and 8 times generally (IF_Altruism), suggesting a lower relative influence of publishing decisions than the factors previously discussed, including P&T. However, in the quantitative data, three questions relating to altruism had a higher coefficient than shaping decisions around P&T, i.e., beneficial to the common good and scholarly community and others building on findings. The quantitative factor with the highest Kendall Rank Correlation Coefficient ($\tau = 0.47$) was "Open access articles are beneficial to the common good" (Table 5). This seems to directly contradict the qualitative findings that P&T has the largest influence on publishing practices. Instead, it would seem that the strongest indicator of publishing OA is a faculty's belief in the benefits of OA because all three respondents with a high OA publishing output "strongly agreed" with this response. Such contradiction could, in part, be explained by the lack of exploration of the qualitative participants' actual publication practices and, as such, it could have a larger impact than the qualitative data suggest. Regardless, attention should be paid to this contradiction in future studies to see whether it continues to appear with larger samples or whether behaviors beyond self-report could be incorporated in future studies.

Categories and relative influence on decisions

The contradictions regarding the largest influence on faculty decisions are echoed when widening the analysis to the first level categories. The quantitative data seem to suggest that intrinsic factors, or those resulting from internal motivation (e.g., altruism), and extrinsic factors, or those due to external influences (e.g., P&T or recognition and publicity), are the strongest influences on faculty decisions regarding whether to publish open (Table 5). Extrinsic factors are also highlighted in the qualitative data, although contextual factors, or those pertaining to context and environment (e.g., departmental or disciplinary culture), also emerged in this phase as a leading influence on faculty decisions (Tables 7 and 8). We posit that all three categories have a significant influence on faculty decisions to publish OA.

Cost, or any real or anticipated effort, loss, or sacrifice necessary to engage with practices, emerged as a secondary influence across both phases of the study, although with different subfactors highlighted. In the quantitative data, concerns regarding plagiarism and attribution demonstrated a fairly high influence ($\tau = 0.36$). However, attribution as related to journal articles did not appear once in the qualitative data. We are unsure whether this gap constitutes

a true lack of worry, which is doubtful given the quantitative data, or participants' preoccupation with other concerns such as P&T. Conversely, funding demonstrated a low influence in the quantitative data ($\tau = 0.04$), whereas it was seventh highest occurring code in the qualitative data (Costs_Monetary_JOA, 21 occurrences). Although the survey question focused on available funding, qualitative respondents shared larger concerns about the concept of having to pay to publish, perhaps accounting for this discrepancy. These participants expressed general distrust in paying to publish, even when the journal and/or its editorial board members are known to the author or have an established reputation in the field, as well as negative feelings about author-pay models. Some respondents saw publishing fees as a scam and avoided such journals, whereas other respondents reported not considering journals with publishing fees on principle. Among respondents considering publishing in journals with fees, costs were seen as a barrier to submission, especially without funding support from funders, the university, or the library.

Interestingly, the fifth category, facilitating conditions, context that helps or hinders engagement with practices, did not demonstrate a strong influence on faculty decisions in this study. Across both phases, participants expressed that funding support, whether from institutions or funders, would be helpful in publishing OA, responding to the monetary concerns identified in the cost category. However, this category did not seem to bear a strong influence on faculty decisions either in favor of or against publishing OA, especially in comparison with the other categories. These results suggest that OA advocates should focus on growing their institutional support by educating and advocating around (or for changes to) extrinsic factors, intrinsic factors, and facilitating conditions. Although the initiatives themselves may not get recognition for their influence on faculty decisions, support for the strongest motivating factors can have a significant influence on faculty decisions to publish OA.

CONCLUSION

Limitations

Population sample

The research team chose to sample a focused target population (SOE faculty at VCU). This was a census sample, but the census is of a convenience-based smaller population that may not transfer or generalize to other contexts. Although a good fit for the exploratory nature of this pilot study, it also led to several limitations. First, both quantitative and qualitative phases were likely subject to self-selection bias, with faculty who were already interested in open practices more likely to participate. This could have potentially led to a higher percentage of those in support of the concept, rather than gathering a true cross-section of the

perceptions of OA journal publishing at the school or across the discipline. This positive bias may also be representative of the chosen discipline of study (education), whose faculty are often more favorably disposed to sharing research and teaching outputs, a key underlying value of OA.

Second, this focused target population of 100 faculty led to a subsequent small sample size. With 15 completed surveys (15% response rate), the response rate is fairly typical for online surveys. Nevertheless, the size of the nonresponse pool was an external threat to validity because there are so many perspectives unrepresented due to nonparticipation. Furthermore, the sample size was too small to run any advanced inferential statistics in this pilot study, which might have caused some noise or distortion in the findings of the present study and limited clear interpretations of the data. Larger samples should be recruited for future research to extend or find further nuance in the study results.

Last, tenure-track faculty, a potentially key demographic, were under-sampled in this study despite attempts to oversample in the qualitative phase. This limited engagement is likely, in part, due to the smaller number of tenure lines and non-tenured faculty at VCU SOE. Regardless, the research team had hoped to analyze results in terms of faculty classification, and, in preliminary analysis, identified some potentially interesting findings through this line of study. However, they opted not to share due to the small sample and fear of identification of participants (1 in quantitative, 3 in qualitative). If this research was to be replicated on a larger scale, we recommend furthering this line of analysis.

Neutral responses and survey instrument

Many survey questions included a high level of neutral responses. This high proportion of neutral responses introduced ambiguity in the pilot study's findings. It was not clear whether the respondents were delivering true neutral responses or whether they had no knowledge or experience with the query's topic.

Furthermore, this high occurrence of neutral responses may indicate that some survey items were confusing to participants. For example, what does "value" mean in this context? And should a "disagree" be interpreted as the respondent doesn't think OA articles are valued or that they are valued negatively? Future adaptations of the questionnaire should provide options such as "Not applicable" or "I don't know." In addition, a valuable direction for other researchers in this area might be defining ambiguous concepts such as the "value" of an article.

Takeaways

This pilot study reinforces that P&T is a strong influence on faculty decisions regarding how and where to publish articles. When walking through these decisions, many faculty weigh how their selected journal, including its reputation, impact factor, and editorial board, will be perceived by the committees or administration who will review their annual reviews or P&T dossiers. Many faculty do not think that OA will be positively received by these reviewers, likely due to the perception that it is lower in quality and impact, and therefore are hesitant to publish in these venues. In fact, P&T is such a strong driver in considerations regarding where to publish that it may override other drivers to engage in OA publishing, especially for those on the fence about these open practices.

However, those who do show a proven track record of publishing OA seem to do so in spite of P&T rather than due to these guidelines and policies. This focus on OA seems to emerge from a strong alignment with the underlying values of OA such as increased access to research, impact of publications, and increased visibility within the field. This connection seems to suggest an alternative pathway to increasing faculty engagement with OA by educating on the benefits of open and reinforcing the positive benefits of increased sharing and access. As researchers begin to move these values to the core of their research and publishing ethos, they may choose to engage with open despite the articulated support, or lack thereof, in P&T policies and guidelines.

Even with these possible alternative pathways to increasing faculty publication of OA articles, it is likely still advisable to integrate support for open practices into P&T documentation. Such explicit mention would support engagement with open practices by those who have expressed interest but feel that they cannot publish OA due to the need to adhere to P&T for career advancement or success. Where and how to integrate support for OA publishing in P&T so that it would be most appropriate or beneficial for long-term impact would need additional data, which is outside the scope of the current study.

DATA AVAILABILITY STATEMENT

Deidentified, disaggregated data are available for public download at the following reference. Identifiable data cannot be shared, based on the consent forms signed by the participants. Data set reference:

Kirschner, J., Kamat, P.S., Miller, H., Alcaine, J.G., Chaparro, S., & Exner, N. (2023). Data for exploring factors influencing faculty engagement with open practices. https://doi.org/10.17605/OSF.IO/AQXT4

REFERENCES

Alperin, J. P., La, M., McKiernan, E. C., Niles, M. T., & Schimanski, L. A. (2020). The value of data and other non-traditional scholarly outputs in academic review, promotion, and tenure in Canada and the United States. In Berez-Kroeker, A., McDonnell, B., Koller, E., & Collister, L. (Eds.), *Open Handbook of Linguistic Data Management*. MIT Press.

Alperin, J. P., Muñoz Nieves, C., Schimanski, L. A., Fischman, G. E., Niles, M. T., & McKiernan, E. C. (2019). How significant are the public dimensions of faculty work in review, promotion and tenure documents? *ELife*, *8*, e42254. https://doi.org/10.7554/eLife.42254

Archibald, M. M. (2016). Investigator triangulation: A collaborative strategy with potential for mixed methods research. *Journal of Mixed Methods Research, 10*(3), 228–250. https://doi.org/10.1177/1558689815570092

Arendt, A., Peacemaker, B., & Miller, H. (2019). Same question, different world: replicating an open access research impact study. *College & Research Libraries, 80*(3): 303–318. https://doi.org/10.5860/crl.80.3.303

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.

Harley, D., Acord, S. K, Earl-Novell, S., Lawrence, S., & King, C. (2010). *Assessing the future landscape of scholarly communication: An exploration of faculty values and needs in seven disciplines*. UC Berkeley: Center for Studies in Higher Education. https://escholarship.org/uc/item/15x7385g

Kim, J. (2010). Faculty self-archiving: Motivations and barriers. *Journal of the American Society for Information Science and Technology, 61*(9), 1909–1922. https://doi.org/10.1002/asi.21336

Kirschner, J., Kamat, P. S., Miller, H., Alcaine, J. G., Chaparro, S., & Exner, N. (2023). Data for exploring factors influencing faculty engagement with open practices. https://doi.org/10.17605/OSF.IO/AQXT4

Lewis, C. (2018). The open access citation advantage: Does it exist and what does it mean for libraries? *Information Technology & Libraries, 37*(3), 50–65. https://doi-org/10.6017/ital.v37i3.10604

Lwoga, E. T., & Questier, F. (2014). Faculty adoption and usage behaviour of open access scholarly communication in health science universities. *New Library World, 115*(3), 116–139. http://dx.doi.org/10.1108/NLW-01-2014-0006

McKiernan, E. C., Schimanski, L. A., Muñoz Nieves, C., Matthias, L., Niles, M. T., & Alperin, J. P. (2019). Use of the journal impact factor in academic review, promotion, and tenure evaluations. *ELife*, *8*, e47338. https://doi.org/10.7554/eLife.47338

Niles, M. T., Schimanski, L. A., McKiernan, E. C., & Alperin, J. P. (2020). Why we publish where we do: Faculty publishing values and their relationship to review, promotion and tenure expectations. *PLOS ONE*, *15*(3), e0228914. https://doi.org/10.1371/journal.pone.0228914

Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B., Farley, A., West, J., & Haustein, S. (2018). The state of OA: A large-scale analysis of the prevalence and impact of Open Access articles. *PeerJ*, *6*, e4375 https://doi.org/10.7717/peerj.4375

Piwowar, H., Priem, J., & Orr, R. (2019). The future of OA: A large-scale analysis projecting open access publication and readership. bioRxiv. https://doi.org/10.1101/795310

Schimanski, L. A., & Alperin, J. P. (2018). The evaluation of scholarship in academic promotion and tenure processes: Past, present, and future. *F1000Research*, *7*, 1605. https://doi.org/10/gfkjmg

Suber, P. (2002). Open access to the scientific journal literature. *Journal of Biology*, *1*, 3. https://doi.org/10.1186/1475-4924-1-3

Virginia Commonwealth University. (2016). VCU School of Education Policies and Procedures. https://soe.vcu.edu/media/school-of-education/pdfs/faculty-amp-staff/promotion_tenure_guidelines-update.pdf

Virginia Commonwealth University. (2013). VCU Faculty Promotion and Tenure Policies and Procedures. https://policy.vcu.edu/doctract/documentportal/08DA32A740D2F58CFC29E0DA4FD8B934

APPENDIX 1:
Open Practices Engagement Survey

Introduction, Open Access Articles, and Demographic sections

INTRODUCTORY QUESTIONS

You may have the opportunity to share the findings of your scholarly research or your teaching materials in a variety of different formats.

In the past five years, about how many times have you shared your materials in each of the following ways:

Matrix, response options:

- Have not considered sharing in this format
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10+
- Not yet, but want to at another stage in career
- No and do not plan to

- Published an article in a peer-reviewed journal
- Published in magazines, newsletters, and journals that are not peer reviewed
- Published a scholarly monograph or contributed to an edited volume, published by an academic publisher
- Shared a working paper or pre-prints
- Posted blogs or other scholarly content freely online
- Published a textbook
- Published or shared other course materials

Within these methods, you may have had the option to publish your works openly.

In the past five years, about how many times have you shared your materials in each of the following ways:

Matrix, same options as above

- Shared any research or teaching materials in the institutional or other open repository
- Shared a journal article or report via ERIC
- Published an article in a fully open access journal
- Published an open access article in a journal with an open access option
- Published an open access monograph
- Published a chapter in an open access edited volume
- Customized an open textbook
- Created an open textbook
- Created/shared other types of open educational resources

Other Ways of Sharing Material

Please list any other open access ways you have shared your work and the approximate frequency.

Promotion and Tenure Values

Within promotion and/or tenure processes, I believe that my school values

- Research more than teaching
- Research and teaching about the same
- Teaching more than research

How much do you agree with the following statement: The benefit of scholarly work and research products to society should be a key measure of research performance for tenure and promotion processes.

- Strongly disagree
- Disagree

- Neutral
- Agree
- Strongly agree

OPEN ACCESS ARTICLES

This section will focus on the possibility of you publishing an open access article, which this study defines as:

> Authoring an article which is freely accessible to the public immediately upon publication, either by publishing in a fully open access journal or by publishing in a subscription journal that provides an open access option for articles. Both types of journals provide the same publishing services for authors (such as peer review) but rely on alternative financial models to cover publishing costs for open access articles. As a result, some require the payment of an article processing charge.

How strongly do you agree with the following statements:

Likert scale:

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

If I publish an open access article, readers may plagiarize or not cite my work.

Publishing an open access article will help other researchers build on my research findings.

Publishing open access articles allows others to access scholarship that they could not otherwise freely access.

I support the principle of open access (free access to research materials for all users).

Open access articles are beneficial to the scholarly community.

Open access articles are beneficial to the common good.

I have the necessary funding to publish my work in journals that require open access article processing charges.

I have the knowledge/ability to easily publish an open access articles.

I can identify and rely on institutional support for publishing open access articles (e.g., library or department publishing fee support, identification of relevant open journals, etc.)

My school will accept open access articles as evidence for tenure and/or promotion.

My school values open access articles as evidence for tenure and/or promotion.

Publishing open access articles will adversely affect my chances of tenure and/or promotion.

I shape my choices around article publishing to match the criteria I perceive for success in tenure and/or promotion processes.

Publishing open access articles will make me a more competitive candidate for faculty positions.

Publishing open access articles will increase the chance to communicate my research findings to those outside of the academy, including community members, practitioners, or policy makers.

Publishing open access articles will widen the readership of my scholarship among peers in my field.

Publishing open access articles will increase the potential impact of my work.

Open access journal articles will be cited more frequently.

Publishing open access articles will increase my visibility within the discipline(s) to which I belong.

Scholars who publish open access articles have more prestige than those who do not.

Publishing open access articles will improve my professional reputation within the discipline (s) to which I belong.

I trust the quality of open access articles.

I have concerns about the quality of open access journals that are not associated with publishers with a positive reputation for their open access publishing practices.

I have concerns about the quality of open access journals that are not associated with publishers with a positive reputation for their subscription journals.

I trust that open access journals will provide the same high quality publication services and stewardship of my articles as subscription journals (e.g. overseeing rigorous peer review, maintaining a copy of my article in the long term).

I will publish open access articles if leading researchers in my discipline publish open access articles.

I will publish open access articles if colleagues in my school publish open access articles.

I will publish open access articles if my research funding agency requires me to make research outputs open access.

I will publish open access articles if my co-authors or collaborators publish open access articles.

I will publish open access articles if my institution requires me to publish open access articles.

In my field, it is common for researchers to publish open access articles.

In my school, it is common for faculty to publish open access articles.

ADDITIONAL FEEDBACK

free response

Would you like to add anything, such as explaining any of your answers or providing more information on your open practices?

Please expand on your perception of the quality and trustworthiness of open access journals and open access publishers. How does this influence your views of open access journals as options for publishing your scholarship?

DEMOGRAPHIC QUESTIONS

Gender

- Male
- Female
- Non-binary

- My gender is not fully described here
- Prefer not to answer

Age

- 30 years and below
- 31-40
- 41-50
- 51-60
- 61 and above
- Prefer not to answer

What is your faculty classification?

- Tenured
- Tenure-track
- Term

What is your current rank?

- Instructor
- Assistant Professor
- Associate Professor
- Professor

Do you think of yourself primarily as a researcher, primarily as a teacher, or somewhere in between?

- Much more as a researcher than as a teacher
- Somewhat more as a researcher than as a teacher
- About equally as a researcher and a teacher
- Somewhat more as a teacher than as a researcher
- Much more as a teacher than as a researcher

How much time on average do you spend on administrative tasks?

Sliding scale

(Place a mark on the scale above)

How much time on average do you spend on service commitments?

Sliding scale

(Place a mark on the scale above)

What's your typical teaching load (per semester)?

- 1 class
- 2 classes
- Alternates per semester, 2/3 or 3/2 3 classes
- Alternates per semester, 3/4 or 4/3 4 classes
- More classes than stated

Which of the following statements best describes your role in deciding what textbooks and other course materials will be used in the courses you teach?

(Check all that apply.)

- I am the primary decision maker
- I share the decision with someone else
- I am part of a group which makes the decision
- Another individual or group is the primary decision maker

In regards to your relationship with VCU, which statement do you most agree with?

- I intend to stay at VCU for the rest of my career
- I anticipate moving to another academic institution at some point in my career
- I anticipate moving to a career outside of higher education at some point in my career

APPENDIX 2:
Qualitative Codebook

This Appendix shares the final codebook used for this study.

- Rows with first-level factors (categories) are highlighted.
- Each first-level factor uses a "Broadly" code to illustrate any statements generally related to that category

- All factors include three levels in the code tree:
  - General comments relating to the factor
  - Comments about the factor in relation to Open Educational Resources. These codes are appended with "_OER"
  - Comments about the fact in relation to publishing open access articles. These codes are appended with "_OA"

CODEBOOK

Factor	Description	Include in this category	Codes
Costs	Not exclusively monetary costs, but any real or anticipated effort, loss, or sacrifice necessary to engage with practices	Use when comments mention the concept of costs, but do not clearly invoke any of the specific codes below	Costs_Broadly Costs_Broadly_OER Costs_Broadly_OA
Attribution	Influence of perception of receiving appropriate credit when OER/journal article is reused on decisions to engage in practices	Use for mention of plagiarism or worry about lack of acknowledgement/attribution/ citation, inappropriate use of information	Costs_attribution Costs_attribution_OER Costs_attribution_JOA
Monetary costs	Analysis of monetary costs as factor in willingness to engage in practice	Use for mention of article processing charges (APCs), page costs, or other monetary costs; also use for mention of loss of earnings or royalties if published non-openly	Costs_monetary Costs_monetary_OER Costs_monetary_JOA
Time costs	Analysis of how much time commitment it would take to involve in practice/task	Use for mention of time needed to undertake work, when described as a cost (e.g. lacking the necessary time or missing out on other opportunities by using the time to engage with open practices)	Costs_time Costs_time_OER Costs_time_JOA
Ease/ complexity of task	Anticipated ease or complexity of the task	Use for mention of how ease/ complexity of task impacts decision to engage (e.g availability of relevant OER, ease of identifying open access journals)	Costs_Efforts Costs_Efforts_OER Costs_Efforts_JOA

(Table continues on following page)

Factor	Description	Include in this category	Codes
Intrinsic Factors	Internal motivations for engaging with practices	Use for mention of principles, internal values, beliefs, academic freedom, agency, professional autonomy, personal preference or interest; also use when comments mention internal motivations that do not clearly invoke any of the specific codes	IF_Broadly IF_Broadly_OER IF_Broadly_OA
Altruism	Motivations to act in the interest of others rather than self-interest	Use for mention of common good; scholarly community; no cost; free access by other researchers/faculty/teachers/students; building on research/teaching materials; support for student learning/student success	IF_Altruism IF_Altruism_OER IF_Altruism_JOA
Knowledge	Knowledge about publishing and educational practices	Use for mention of levels of awareness of publishing and educational practices, including knowledge/awareness specific to open practices	IF_Knowledge IF_Knowledge_OER IF_Knowledge_JOA
Facilitating Conditions	Conditions that help or hinder engagement with practices	Use when comments mention the concept of facilitating conditions but do not clearly invoke any of the specific codes below	FC_Broadly FC_Broadly_OER FC_Broadly_OA
Funding Support	Perceptions about funding support to publish or engage with practices	Use for mention of institution (including library) providing financial support to engage in practices (e.g. open access publishing fees, grants)	FC_FundSupp FC_FundSupp_OER FC_FundSupp_JOA
Institutional Support	Perception about institutional support for engagement in practices	Use for mention of personnel, infrastructure, training, assistance with identi-fication of relevant open	FC_InstSupp FC_InstSupp_OER FC_InstSupp_JOA

(Table continues on following page)

Factor	Description	Include in this category	Codes
		journals, assistance with customizing or creating OER, and any other concrete form of support that is not financial. This includes any mention of librarian or library support.	
Extrinsic Factors	External motivations to engage in practices	Use for "impact factor" when it is not clear which specific code in this category applies; use when comments mention the concept of external motivation, but do not clearly invoke any of the specific codes below	EF_Broadly EF_Broadly_OER EF_Broadly_OA
Promotion, Tenure, and Academic Reward	Influence of promotion, tenure, and other academic reward on decisions to engage in practices	Use for anything relating to promotion and/or tenure, raises, hiring, annual reviews	EF_PromTenure EF_PromTenure_OER EF_PromTenure_JOA
Professional Recognition & Publicity	Influence of recognition and visibility of the individual and their work on decisions to engage in practices	Use for anything relating to professional prestige, pursuing citations, visibility in field, professional reputation, journal reputation, readership (among peers and beyond academia), social media, altmetrics/alternative metrics	EF_RecogPub EF_RecogPub_OER EF_RecogPub_JOA
Trustworthiness	How the level of trust influences decisions to engage in practices	Use for anything relating to trust or lack of trust in publishers, editorial board, publishing processes (e.g. peer review), publications, publication quality. Also use for trust or lack of trust in the overall concept of open access.	EF_Trust EF_Trust_OER EF_Trust_JOA
Contextual Factors	How context and environment influence	Use for mention of environment (contextual factors that are not	CF_Broadly CF_Broadly_OER CF_Broadly_OA

(Table continues on following page)

Factor	Description	Include in this category	Codes
	decisions to engage in practices	necessarily dependent on culture). Examples include institutional designations (R1 status, Carnegie classifications such as community-engagement, Minority-Serving Institution designation) or faculty rank/classification. Use when comments mention the concept of contextual factors or environment, but do not invoke any of the specific codes below.	
Influence of Other Actors	Influence of leading researchers, colleagues, or co-authors/collaborators and institutional or funding agency mandates on decisions to engage in practices	Use for mention of what leading researchers, colleagues, or co-authors/collaborators do; what is required/mandated by institutions or funding agencies	CF_Influence CF_Influence_OER CF_Influence_JOA
Culture	Influence of culture within the discipline/field or culture within the institution (institution at large, school, department) on decisions to engage in practices	Use for mention of culture within the discipline/field or culture within the institution (institution at large, school, department). Also use for mention of whether or not relevant OER are available within a specific discipline.	CF_Culture CF_Culture_OER CF_Culture_JOA

(continued)