

Perceived quality and self-identity in scholarly publishing

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Abstract

The purpose is to understand if and how two proposed facets of self-identity (work-self and career-self) and journals' perceived quality (impact, visibility, and content quality) influence and explain intention to publish in open access (OA) or non-open access (non-OA) journals. This study integrates attitude and identity theory within a cross-sectional survey design. The sample consists of about 1600 researchers in Norway, and the data was collected via email invitation using a digital surveying tool and analyzed using structural equation modeling (SEM) techniques. We determined that perceived impact-quality increases the intention to publish non-OA, while decreasing the intention to publish OA. Content quality is only associated with non-OA journals. Perceived visibility increases the intention to publish OA, while the opposite effect is found for non-OA. Career-self salience has the strongest effect on impact-quality, while content quality is most important when work-self is salient. This research contributes with a deeper understanding about how perceived quality influences intention to publish in OA and non-OA journals, and how self-identity salience affects different facets of perceived quality in valence and strength. Findings have implications for policy development, implementation, and assessment and may contribute to improving OA adoption.

Keywords: scholarly publishing; human communications; individual differences; psychological aspects; empirical studies.

Perceived quality and self-identity in scholarly publishing

Introduction

Funders and policy makers are increasingly recognizing the importance of improving access to research funded by public money (Björk, 2017). However, a common denominator of guidelines of this type is the apparent lack of strategies systematically describing how and why researchers choose one publishing model over another. The current study is part of a project tasked with investigating OA publishing behavior among researchers in Norway. In Norway, recently implemented guidelines for open access (OA) (Regjeringen, 2017a) outline steps and actions to be undertaken to increase the volume of OA publications, and to reduce research funding for publishing in traditional non-open access journals. This includes requirements for publishing in open journals, depositing articles in institutional archives, and institutional funds to cover any article processing charges (APC) researchers may incur for gold (i.e., journals that are open but charge an APC), but not hybrid (i.e., subscription journals that offer OA for articles by charging an APC), OA. Several of the universities in Norway operate with funding schemes to support Gold OA. A recent government white paper (Norwegian research council, 2018) informed that researchers in Norway published 25000 scholarly articles in 2017, of which 90 % were in English. According to the report, approximately 3000 of these articles have been published in a DOAJ (Directory of Open Access Journal) listed journal. The Norwegian OA guidelines provide little information on how to measure, analyze and change researchers' attitudes and behaviors in relation to the dissemination method. This is surprising given the central position researchers hold in this context. One might argue that without researchers there would be no scholarly literature; hence, understanding what drives researchers' dissemination intentions should be of the highest priority to governments and policy makers alike. Especially given the consequences of failing to meet the requirements of the new guidelines.

Although the growth of OA has been promising (Laakso et al., 2011; Solomon, Laakso, & Björk, 2013), researchers are still reluctant to fully embrace the model. This is due in part to incentive systems favoring non-OA journals, such as the large number of high-tiered non-OA journals compared to the relatively low number of similarly ranked OA journals. Among other things, researchers wish to make their research available in the best quality journals due to requirements from their institutions, as a mark of quality of their work, but also to achieve status and earn the respect of peers (Warlick & Vaughan, 2007; Xia, 2010).

However, external influences such as perceptions of journal quality are not the only motivational factors driving academic achievement. Internal, personal or individual values and differences are suggested to influence scholarly publishing (Dulle & Minishi-Majanja, 2011; Khalili & Singh, 2012; Togia & Korobili, 2014). Spanning decades, social psychology has both empirically and theoretically investigated individuals' concepts of self-identity and self-categorization (Stets & Burke, 2000; Tajfel, Billig, Bundy, & Flament, 1971; Turner, 1985), and how these structures are shaped and interact in various social and organizational settings (Ashforth & Mael, 1989; Hogg & Terry, 2000). For example, it is suggested to be a positive relationship between work identity and work performance (Daan van Knippenberg, 2000), including academic performance (Jain, George, & Maltarich, 2009). Arguably, some of the most salient contributions emanating from these efforts are identity- and social identity theory (see, Stets & Burke, 2000). In short, individuals possess several relatively enduring concepts of self, which vary in salience, valence and performance across situations. For instance, in relation to academic publishing, salient identification could derive from a desire to publish based on personal interests and pure task enjoyment (self-id), or it could be contingent on shared characteristics and values with peers (career or social id) (Daan van Knippenberg, 2000).

The main purpose of this study is to introduce a conceptual model discussing and testing if and how two novel facets of self-identity (work-self and career-self) is related to different facets of journals' perceived quality (impact, visibility and content quality) and their ability to explain intention to publish OA or non-OA. This research will provide additional knowledge and recommendations to the growing body of research on scholarly OA publishing. Furthermore, research on the attitude-behavior relationship suggests that the desire to make an effort or perform a behavior can derive from various sources (Fishbein & Ajzen, 2010; Sheeran, 2002), including perceptions of quality (e.g., Das, 2014) and self-identity (e.g., Han & Stoel, 2017).

In Norway, the majority of researchers are not familiar with the different methods and distinctions of achieving OA, as determined by pretest work of an earlier study conducted by the authors (Moksness & Olsen, 2017). Consequently, in this investigation OA and non-OA publishing are framed at a general level, and as pertain to articles freely available or behind a paywall, respectively. This approach leaves some definitional uncertainty in relation to how to conceptualize hybrid OA, which is the term for articles "freed up" in a journal that is subscription-based. To maintain a global and general definition of OA, hybrid OA will be

considered as OA within the framework of this study. In studies using similar frameworks, broad categories of OA have also been used (e.g., Dulle & Minishi-Majanja, 2011; Khalili & Singh, 2012), although it is not common to measure non-OA intentions as well. This study, further, will employ a latent factor structural modeling approach with three dimensions of perceived journal quality (impact, visibility, and content quality), and two dimensions of self-identity (work-self and career-self) among a Norwegian sample of researchers.

Theoretical framework

The conceptual model used herein is based on an attitudinal approach with intention as the ultimate dependent variable (Eagly & Chaiken, 1993). Intention is viewed as “indications of a person’s readiness to perform a behavior” (Fishbein & Ajzen, 2010, pp. 39). In this paper the view is taken that intentional behavior is a more suitable “behavioral indicator” than the frequency of past publishing behavior, since OA-publishing is new compared to non-OA publishing. In addition, intention to behave is frequently used as a dependent variable in a variety of behavioral settings (Fishbein & Ajzen, 2010), including self-identity (Han & Stoel, 2017), perceived quality (Das, 2014) and OA publishing (Dulle & Minishi-Majanja, 2011; Khalili & Singh, 2012; Park, 2007). Typically, several factors which comprise a person’s attitudes, normative influences and behavioral control are thought to influence intention. Attitudes, or the overall positive and negative evaluation of the attitude object (e.g., attitude to publish OA), are consistently found to have the strongest effect on intention (Armitage & Conner, 2001).

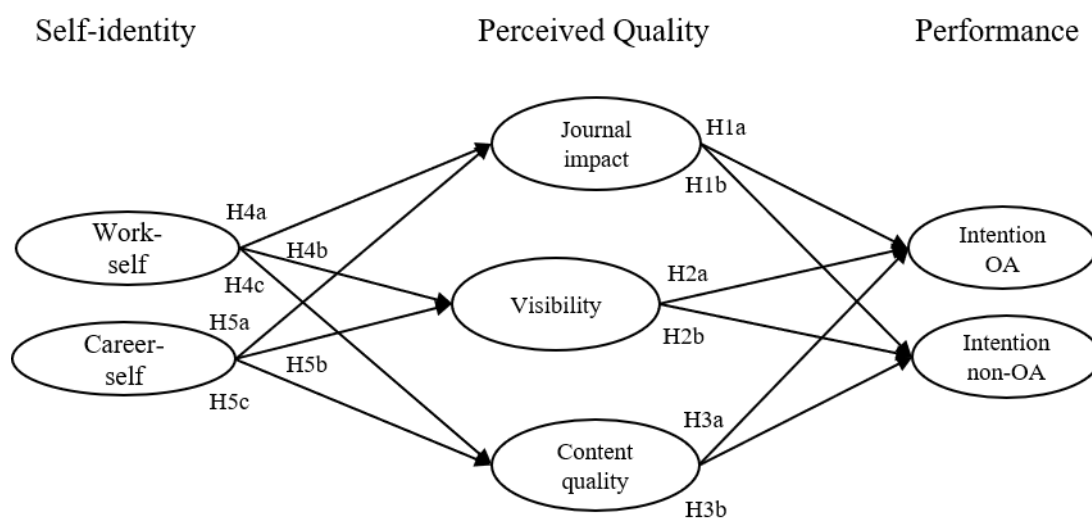
Studies have found that researchers’ publishing intentions are most likely affected by perceptions of the overall *quality* (or attitude) of the journal in which they want to publish (e.g., Lowry, Humpherys, Malwitz, & Nix, 2007). According to Zeithaml (1988), perceived quality can be defined as subjective positive and negative evaluations of the higher order abstractions of a product or a service, separate from objective quality, and resembling attitudes. As perceived quality in a business environment is found to increase profitability and affect market share and price (Aaker, 2009), it is crucial to understand how this concept operates in relation to academic publishing. Perceived quality has previously been identified as an important antecedent of intentions in a digital environment (Chi, Yeh, & Yang, 2009; Grabner-Kräuter & Kaluscha, 2003), including scholarly publishing (Catling, Mason, & Upton, 2009; Moksness & Olsen, in press). Previous studies have identified additional factors that act on publishing decisions, including journal impact factor (Knight & Steinbach, 2008),

access type (Dulle & Minishi-Majanja, 2011; Khalili & Singh, 2012), content quality (Bjork & Solomon, 2012) and peer review (Tenopir et al., 2015).

Self-identity is suggested to be an important motivational factor in explaining individuals' attitudes and behavior in an organizational context (Hogg and Terry, 2000). Identity theory maintains that the processes which comprise self-categorizations and self-identification emanate from the reflective properties of group membership and assigned roles (Conner & Armitage, 1998; Stets & Burke, 2000). In the context of scholarly publishing, researchers' identities are tightly linked to a role wherein membership is determined by, among other things, the production and publication of research literature. For instance, Henkel (2005) labels academics as "definers, producers, transmitters, and arbiters of advanced knowledge" (p. 159). The current study relies on the view offered by Conner and Armitage (1998) who define self-identity as "the salient part of an actor's self which relates to a particular behavior. It reflects the extent to which an actor sees him- or herself as fulfilling criteria for any societal role" (p. 1444). Researchers' identities, then, derive from belongingness to a group (researchers) and, at least partly, how one performs his or her role within this group (publishes articles). Researchers' roles are suggested to be associated with their self-work identity, career development, job-attitude or other cross cutting identities in an organizational environment (Ashforth & Johnson, 2001; Daan van Knippenberg, 2000; Daan van Knippenberg & van Schie, 2000).

This study contributes to the existing literature in library and information science (LIS) by using a self-identity perspective in studying researchers' motivation to publish in scholarly journals. It introduces two facets of self-identity (work- and career-self) and focuses on their relation to researcher's perceptions of journals' perceived quality and scholarly publishing intention (performance). The following sections will further explore the theoretical constructs conceptualized in Figure 1.

Figure 1. A conceptual model of the relationship between self-identity, perceived quality and scholarly publishing



Perceived quality and intention to publish

Researchers evaluate journals in which they want to publish based on a range of criteria, many of which pertain to perceptions about quality. Studies suggest that perceived journal quality is a broad term comprising several indicators, including prestige (as properties of the journal itself and the researchers who publish there), impact (both of journals and articles), visibility, reputation and quality of peer review (Chang, 2017; Knight & Steinbach, 2008; Warlick & Vaughan, 2007; Xia, 2010). Perceived quality has previously been identified as an important contributor to researchers' intention to publish in scholarly journals (Moksness & Olsen, in press). This study defines perceived quality as a global concept pertaining to researchers' subjective evaluation of indicators which determine whether a journal is appropriate for submitting research articles to. Furthermore, this study utilizes three distinct factors in measuring perceived quality, each factor reflecting different properties of the journal and its content. The factors represent the journal impact and status, the visibility potential of articles published in the journal, and the quality of its content. The journal selection criteria that researchers employ correspond to the reliability and quality of a journal's product and its service, and thus resonate with the perceived quality indicators and dimensions charted by Aaker (2009).

Perhaps the most contested and revered proxy for quality is the journal *impact* factor, a metric which, incidentally, is closely linked to perceived journal quality and prestige (Hall & Page, 2015). This study acknowledges that, although the journal impact factor is not necessarily a robust measure of journal quality (Lozano, Larivière, & Gingras, 2012), and never was intended as such (Seglen, 1997), it nonetheless prevails as a proxy for quality

among researchers and administrators alike (Vanclay, 2012). Essentially, a metric which has an objectively weak relationship with the quality of articles in any given digital journal (Flemming, 2012; Lozano et al., 2012), can still function as a reliable indicator of the subjective perceptions of quality of scholarly journals. For instance, in an early study about journal impact factor and quality, Saha, Saint, and Christakis (2003) found that the impact factor is strongly correlated to clinicians' subjective rating of a journal's quality, strengthening the assumption that it is a subjective measure of quality more than it is an objective measure of quality. Some even compare contemporary use of the impact factor to the pseudo-scientific practice of phrenology (Vanclay, 2012). Nonetheless, it is expected that perceived journal impact, as measured by the impact factor, status and prestige (see Table 2), will contribute significantly to the intentions to publish OA or non-OA, albeit with opposing valences. Specifically, it is expected that impact will decrease the intention to publish OA while increasing or strengthening the intention to publish non-OA. Thus,

H1a: Journal impact significantly decreases the intention to publish in OA journals.

H1b: Journal impact significantly increases the intention to publish in non-OA journals.

For many researchers an important aspect of their scientific contributions is that the articles are *visible* and will be utilized in some form by peers or other interested parties. Although many research papers are never cited (Larivière, Gingras, & Archambault, 2009), this does not mean they are never read. As such, the potential of a published article to be visible by a third party should function as a determinant of whether researchers intend to submit articles to a journal. Arguably, some of the most prominent features of OA journals are concerned with the potential accessibility and visibility advantage of published content; however, these are not necessarily sufficient reasons for researchers to choose OA over non-OA (e.g., Chang, 2017). Some early OA research even reported perceived negative visibility for OA content (Swan & Brown, 2004); however, this notion has matured over the years to become more positive (Wang, Liu, Mao, & Fang, 2015). It is therefore expected that perceived visibility, as measured by a journal's audience, turnover and communication, will significantly influence the intention to publish OA positively while decreasing the intention to publish non-OA. Thus,

H2a: Visibility significantly increases the intention to publish in OA journals.

H2b: Visibility significantly decreases the intention to publish in non-OA journals.

Apart from a journal's impact and prestige, and whether published work will reach a wide audience, a related and important consideration concerns the *content quality* of a journal. Content quality refers to the ability of the journal to be reliable in its evaluative procedures and consistency in the quality of published articles. This has been a matter of contest and criticism toward OA (Warlick & Vaughan, 2007; Xia, 2010), particularly with respect to perceptions of inferior peer-review and a low threshold for article acceptance. The supposition is that low quality journals will attract and accept low quality articles, thereby degrading scientific output (McCabe & Snyder, 2005). This holds true for what is termed predatory publishers. These are publishers that capitalize on the increasing pressure to publish and unethically exploit the "author pays" model by accepting and churning out articles with little or no peer-review or quality control (Shen & Björk, 2015). Consequently, legitimate publishers suffer due to superficial similarities to the predatory publications. Within this context perceived quality is crucial, as it is not sufficient to achieve high actual quality; what matters is what consumers perceive (Aaker, 2009). As such, this study expects that researchers' perceived content quality, as measured by perceptions about article quality, consistency and reliability of peer-review, will likely reduce their intention to publish in OA journals. The opposite effect is expected in relation to non-OA journals. Thus,

H3a: Content quality significantly decreases the intention to publish in OA journals.

H3b: Content quality significantly increases the intention to publish in non-OA journals.

Self-identity and perceived quality relationships

It is a fundamental human motivation to understand who we are, and what we do as a form of self-association, evaluation and categorization (Reed, Forehand, Puntoni, & Warlop, 2012).

This general drive and motivation produces a wide range of self- and self-identity driven effects which have emerged in the academic literature over the last several decades (Hornsey, 2008; Schwartz, 2001). The self-concept can be viewed as the knowledge a person has about him- or herself (Baumeister, 1999). An identity can be defined as any category label to which an individual self-associates, either by choice or endowment (Reed et al., 2012). The distinct selves or identities are tied to particular situations, contexts or roles (e.g., job, worker, consumer, researcher) and often appraise their standing across multiple identities simultaneously (i.e., a scientist is likely to appraise his or her standing as a scholar, colleague, supervisor, academic worker, etc.). Although some slight definitions-based differences exist between concepts such as "self-identity", "personal-identity", "social-identity", and "role-identity", the underlying associative basis is largely the same (Reed et al., 2012).

The concept of self-identity is considered to subtly differ from social identity in that it is role-specific and not necessarily linked to a homogeneous attitudinal or behavioral profile associated with membership in a social group (Stets & Burke, 2000). However, this does not preclude an individual from possessing several social identities within an organization (Ashforth & Mael, 1989), not all of which are salient or cognitively activated at all times (Daan van Knippenberg, 2000).

A salient component of a researcher's social identity relates to the production and dissemination of research, a notion which dates back decades (Lee, 1969). This then, becomes a determinant of role success as a researcher. It should be noted that the concept of researcher self-identity is larger than the confines of the current investigation, consisting of various meanings and expectations defined both within the organization or institution, but also externally in society at large. Terry, Hogg, and White (1999) note that the self is conceptualized as a selection of identities that reflect the various roles individuals occupy. For instance, A university professor will share his work, life and identity between teaching, publishing, supervising, and conducting research. For the purposes of the present study it is sufficient to limit the scope to indicators related to academic publishing. Specifically, this study takes a twofold approach to self-identity by proposing and testing two subfactors termed work-self and career-self and investigating the effects of these constructs as fundamental drivers in a publishing intention framework. The two constructs will be discussed in further detail below.

Salient identities are the principal determinants of work motivation and performance have been studied extensively in organizations (Daan van Knippenberg, 2000; D. Van Knippenberg & Sleebos, 2006), and in relation to, for example, consumer behavior (Reed et al., 2012). The parallels between universities as organizations and researchers as consumers are readily apparent. For researchers, participating in the scientific endeavor is likely an important trigger of identity salience (Jain et al., 2009). Sparks and Shepherd (1992) noted that people will fulfill their roles according to the value the roles hold for them, suggesting the importance of actions or outcomes that are deemed to bolster one's self-identity.

As noted earlier, an important aspect of researchers' self-identity and motivation is to conduct research and disseminate the results predominantly in the format of research articles. *Work-self*, can thus be defined as a facet of self-identity, which is salient in the context of engaging in publishing intentions and behaviors. Theories and research on work motivation and performance assume that employee's personal need for challenge and development is the

best source of work motivation (Daan van Knippenberg, 2000). It further suggest that the motivational impact of different needs changes as a function of the salience of different norms and goals associated with the different levels or facets of self-categories (e.g., employee, researcher or high quality scholar). It is therefore expected that work-self, as measured by a drive to contribute with the best possible work to advance the scientific corpus, will contribute significantly to the perceived quality constructs. This expectation emanates from the nature of work-self being a construct defining an inherent drive or desire to successfully fulfill one's role. Thus,

Succeeding as a researcher goes beyond the mere desire to contribute to the advancement of science; the effort should be successful, i.e., not only comprise research production but also successful research dissemination, preferably in top-tier journals to earn status and consolidate one's position (Lawrence, 2003). Studies highlight the importance of a career focus and *advancement* among journal selection criteria (Peekhaus & Proferes, 2015). This part of self-identity translates to, and can be defined as, fulfilling the role of a researcher successfully. This notion resonates throughout the literature on academic publishing (e.g., McGrail, Rickard, & Jones, 2006), perhaps infamously known by the colloquialism "publish or perish". The premise of situation or context-specific identity salience is perhaps especially clear when considering career advancement within academia. Career-self can therefore be conceptualized in terms of indicators pertaining to successful long-term role fulfillment as a researcher. Given that success in academia often includes the number of publications in highly-ranked journals (e.g., Sutherland, 2017), it is expected that researchers' concept of career-self will have the largest positive effect on the journal impact variable, while also significantly and positively contributing to both visibility and content quality. Hence,

H4a: Work-self will significantly and positively affect *journal impact*.

H4b: Work-self will significantly and positively affect *visibility*.

H4c: Work-self will significantly and positively affect *content quality*;

And,

H5a: Career-self will significantly and positively affect *journal impact*.

H5b: Career-self will significantly and positively affect *visibility*.

H5c: Career-self will significantly and positively affect *content quality*.

Research methodology

Participants and procedure

The university sector in Norway, as of 2018, consists of 10 accredited universities.

Accreditation follows the requirement that the university has at least five master's programs and four PhD programs, and that the programs should produce a steady stream of candidates and research publications. The survey was sent by email invitation to 19,649 employees at 8 of the major universities in Norway; this group includes both academic and administrative staff. The main reason for including both categories is that some institutional websites do not differentiate between academic and administrative staff. However, as of 2016 (Regjeringen, 2017b), 14,255 employees at the major educational institutions were listed as scientific/academic; this number is likely to be approximately the same at the time of the survey. Email addresses were collected via the institutions' web domains, and survey distribution and data collection were handled using the online surveying tool Questback (www.questback.com). The sample consisted of authors who either had published or were going to publish scholarly articles. The total number of respondents was $n = 1588$, or 11% when adjusted for academic/scientific employees at the included institutions. Pre-analysis and scale reliabilities determined items for further inclusion. See Table 1 for demographics.

Table 1. Demographics of respondents ($n = 1588$)

N = 1588	Items	Frequency	Items	Frequency	
Age	20-29	119	Current position	PhD cand.	307
	30-39	421		Post-doc	100
	40-49	359		Associate prof.	311
	50-59	324		Full prof.	475
	60+	359		Prof. emeritus/emerita	101
	Missing	6		Other	290
	Total	1588		Missing	4
Gender			Total	1588	
	Male	995			
	Female	566			
	Missing	27			
	Total	1588			

Measurements

Pretests conducted among a small sample of researchers at UiT – The Arctic University of Norway OA for a previous Norwegian OA study (Moksness & Olsen, 2017) revealed that the majority of respondents were unfamiliar with specific terminology related to OA publishing, such as “Hybrid OA”, “Green OA”, “Gold OA”. Researchers were, however, familiar with

the term “OA”. Thus, in order to ensure familiarity among respondents with the intentional categories, broad and general distinctions of OA and non-OA were utilized. Measurement of intention followed recommendations by Fishbein and Ajzen (2010), and three items were adapted to reflect the research context. All items were measured on 7-point scales in which 1 indicated the lowest level of agreement and 7 the highest. Items are listed in Table 2. Sample items are: “*I will try to submit research articles to OA journals within the next 2 years*”, and “*I will try to submit research articles to non-OA journals within the next 2 years*”.

The *perceived quality* scale and subscales were developed based on work by Moksness and Olsen (in press) and by the broader literature on academic publishing (e.g., Knight & Steinbach, 2008). The measures were intended to reflect properties of *journal impact* (3 items), *content quality* (3 items), and *visibility* of published material (3 items). The following text preceded the perceived quality items: “*When choosing a journal to which to submit an article, it is important that the journal...*”, followed by indicating level of importance to each statement on a scale ranging from 1 to 7 (very unimportant – very important). Sample items are: “*...has a high impact factor*” (impact), “*...has a wide audience*” (visibility), and “*offers very reliable peer-review*” (content quality).

The general concept of self-identity was measured by two factors comprising *work-self* and *career-self* scales, with two and three items respectively, and were generated based on the broader literature on self-identification (Jain et al., 2009; Stets & Burke, 2000), self-identity (Baumeister, 1999; Hornsey, 2008; Reed et al., 2012; D. Van Knippenberg & Sleebos, 2006), and academic publishing behavior (Chang, 2017; Xia, 2010). The diversity of the self-identity construct is designed to reflect the decision to submit an article to a journal in terms of both internal and external drives to contribute to one’s self-identity as an accomplished worker and contributor to the advancement of science (work role-identity), and as career advancement (personal-identity) or praise from peers (social-identity). Respondents first read the following text: “*A part of my decision to submit an article to a journal is that*”, and subsequently indicated level of importance on 7-point scales where 1 indicated the statement was “very unimportant” and 7 “very important.” Sample items are: “*... I am personally motivated by contributing with the highest quality research*” and “*... getting an article accepted brings praise from my peers*”, reflecting intrinsic motivation and incentives, respectively. All items are listed in Table 2.

IBM SPSS and AMOS were used for data analyses.

Results

Reliability and validity of the measures

The summarized results in Table 2 indicate that the model overall shows good fit (CMIN/DF = 4.57, df = 149, CFI = 0.98, TLI = 0.97, RMSEA = .047). Kline (2011) suggests recommended thresholds for fit indices are: CMIN < 5; CFI > .90; TLI > .90 and RMSEA < .08. Table 2 shows reliability measures and unstandardized factor loadings for the basic model, while descriptive statistics and construct correlations are found in Table 3. Table 4 shows the results from hypothesis testing. The bold numbers in the diagonal of Table 3 represent the square root of the average variance extracted (AVE); these numbers should be larger than the value of the correlations to indicate discriminant validity (Fornell & Larcker, 1981). Composite reliability (CR) and variance extracted should exceed 0.70 and 0.50, respectively, to indicate internal consistency. Apart from the *Perceived visibility* subscale (AVE = 0.48), all constructs range from 0.75 to 0.98 (CR), and 0.53 to 0.94 (AVE), indicating adequate internal consistency for the model constructs. Construct correlation and descriptive statistics are displayed in Table 3.

Table 2. Standardized confirmatory factor analysis coefficients and construct reliability for basic model

Constructs and indicators	Factor loadings	Composite reliability	Variance extracted
<i>Intention to publish Open Access</i>		0.98	0.94
I will try to submit research articles to OA journals within the next 2 years.	0.96		
I intend to submit research articles to OA journals within the next 2 years.	0.99		
I plan to submit research articles to OA journals within the next 2 years.	0.96		
<i>Intention to publish non-Open Access</i>		0.97	0.92
I will try to submit research articles to non-OA journals within the next 2 years.	0.94		
I intend to submit research articles to non-OA journals within the next 2 years.	0.99		
I plan to submit research articles to non-OA journals within the next 2 years.	0.95		
<i>Self-identity</i> (<i>A part of my decision to submit an article to a journal is that...</i>)			
<i>Work-self</i>		0.83	0.71
...I am personally motivated by contributing with the highest quality research.	0.90		
...It is important to me to contribute to the advancement of science.	0.78		
<i>Career-self</i>		0.78	0.55
...getting an article accepted in the journal brings praise from my peers.	0.61		
...publishing in the journal is good for my career development.	0.84		
...having an article accepted in the journal will generate more research funding.	0.75		

Perceived quality

(When choosing a journal for submitting an article, it is important that the journal...)

		0.84	0.63
<i>Perceived journal impact</i>			
...has a high impact factor.	0.73		
...enjoys high status within its field of research.	0.83		
...is a prestigious journal to publish in.	0.82		
<i>Perceived visibility</i>			
...has a wide audience.	0.67	0.73	0.48
...offers fast turnover from submission to publication.	0.62		
...has a good reputation in terms of communication with authors.	0.78		
<i>Perceived content quality</i>			
...normally publishes very good quality articles.	0.90	0.89	0.72
...publishes articles of consistent quality.	0.91		
...offers very reliable peer-review.	0.73		

Table 3. Correlations and descriptive statistics for constructs in the basic model

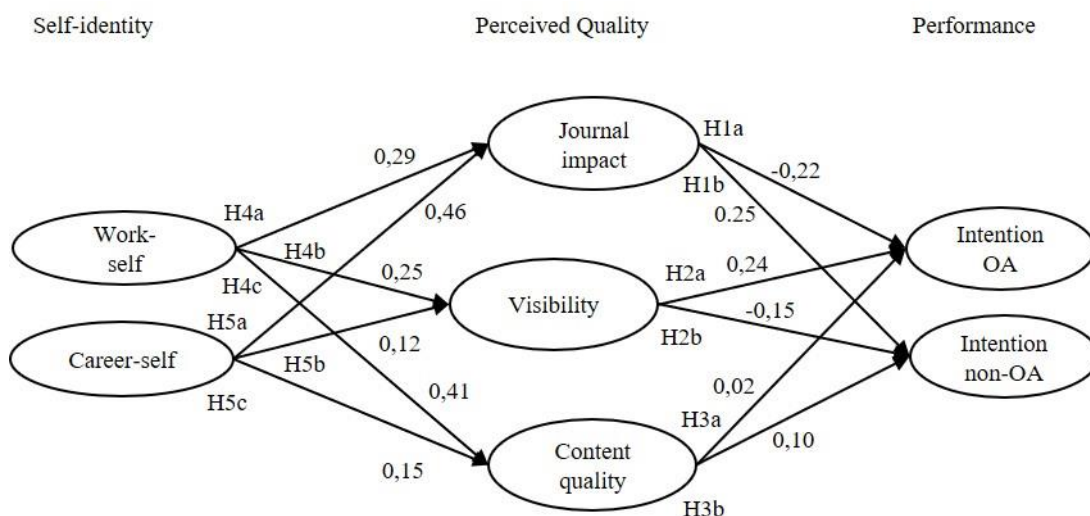
N = 1588	Mean	SD	1	2	3	4	5	6	7
1. Intention OA	4.87	1.96	0.97						
2. Intention non-OA	5.06	1.96	-0.27*	0.96					
3. Work-self	5.81	1.14	0.03	0.17*	0.84				
4. Career-self	4.80	1.38	0.00	0.15*	0.45*	0.74			
5. Impact	5.59	1.15	-0.13*	0.25*	0.49*	0.59*	0.79		
6. Visibility	5.25	1.05	0.15*	-0.01	0.30*	0.23*	0.41*	0.69	
7. Content quality	6.24	0.86	-0.03	0.19*	0.48*	0.33*	0.63*	0.41*	0.85

* $p < .001$; OA/non-OA int. = intention to publish Open Access/non-Open Access

Structural analysis and model testing

The proposed conceptual model (Figure 1) was tested using structural equation modeling (SEM), and the main results are presented in Figure 2. The results indicate that the model fits the data well, as indicated by the fit indices (CMIN/DF = 4.61, DF = 153, $p = .000$, CFI = 0.98, TLI = 0.97, RMSEA = .048). More detailed statistical results from the analyses are presented in Table 4. H1a stipulated that *journal impact* would decrease the intention to publish in OA journals, which is supported by the data ($\beta = -0.56$, $z = -5.79$, $p < .001$). Support is also found for H1b, which expected that *journal impact* would show a significant and positive effect on the intention to publish in non-OA journals ($\beta = 0.25$, $z = 6.44$, $p < .001$). H1a and 1b are consequently confirmed.

Figure 2. Results of the proposed structural model



The suggested effects of H2a and H2b are also supported by the data. H2a stated that perceived *visibility* increases the intention to publish in OA journals data ($\beta = 0.24$, $z = 6.82$, $p < .001$), while H2b suggested that *visibility* decreases the intention to publish in non-OA journals ($\beta = -0.15$, $z = -4.94$, $p < .001$). H3a outlined an expected negative effect by perceived *content quality* on the intention to publish OA; however, this hypothesis is not supported by the data ($\beta = 0.02$, $z = 0.46$, $p < .65$). Support is found for H3b, which suggested that the opposite effect would be observed on the intention to publish in non-OA journals ($\beta = 0.10$, $z = 2.82$, $p < .005$). The results further demonstrated that *work-self* positively influences all the perceived quality constructs. H4abc stated that *work-self* increases *impact* ($\beta = 0.41$, $z = 8.37$, $p < .001$), *visibility* ($\beta = 0.25$, $z = 3.85$, $p < .001$) and *content quality* ($\beta = 0.29$, $z = 9.50$, $p < .001$), respectively. Confirmation is also found for H5abc. A significant and positive effect is determined by *career-self* on *visibility* ($\beta = 0.12$, $z = 3.24$, $p < .001$), as suggested by H5a. H5b outlined that *career-self* also positively influences perceived *impact*, which is also supported by the data ($\beta = 0.46$, $z = 14.00$, $p < .001$). Finally, H5c suggested a positive effect on *content quality*, and the results support this hypothesis as well ($\beta = 0.15$, $z = 4.69$, $p < .001$). Consequently, all hypotheses except for H3a are confirmed.

Table 4. Testing direct effects

Path (N = 1588)	Hypothesis	Standardized coefficients	p-value	z-value	Conclusion
Impact →Int. OA	H1a	-0.22	.001	-5.79	Supported
Impact →Int. non-OA	H1b	0.25	.001	6.44	Supported
Visibility →Int. OA	H2a	0.24	.001	6.82	Supported
Visibility →Int. non-OA	H2b	-0.15	.001	-4.94	Supported
Content quality →Int. OA	H3a	0.02	.65	0.46	<i>ns</i>
Content quality →Int. non-OA	H3b	0.10	.005	2.82	Supported
Work-self→Impact	H4a	0.29	.001	9.50	Supported
Work-self→Visibility	H4b	0.25	.001	3.85	Supported
Work-self→Content quality	H4c	0.41	.001	8.37	Supported
Career-self→Impact	H5a	0.46	.001	14.00	Supported
Career-self→Visibility	H5b	0.12	.001	3.24	Supported
Career-self→Content quality	H5c	0.15	.001	4.69	Supported

Note: Int OA/non-OA = intention to publish Open Access/non-OA; *ns* = not significant

Discussion and implications

Discussion

The main purpose of this study is to investigate if and how perceived journal quality and self-identity influence or explain intention to publish in OA or non-OA journals. The conceptual framework is based on integration of attitude theory/reasoned action approach (Fishbein & Ajzen, 2010), literature and research on identity theory (Conner & Armitage, 1998; Hogg & Terry, 2000; Stets & Burke, 2000), and scholarly publishing (Knight & Steinbach, 2008; Warlick & Vaughan, 2007; Xia, 2010). More precisely, the work focused on the interplay between two facets of self-identity (career-self and work-self), three facets of perceived journal quality (impact, visibility and content quality) and intention to publish OA and non-OA (performance) in a university context (Knight & Steinbach, 2008; Warlick & Vaughan, 2007). Overall, the results indicate satisfactory reliability and validity of the constructs and support eleven of ten hypotheses within a structural equation modeling framework. This study contributes to the literature by proving that facets of perceived journal quality and self-identity interacts differently with OA versus non-OA publishing intentions.

This study has several potential contributions to the literature on scholarly publishing. First, subdividing the perceived quality concept into three distinct factors enabled a comprehensive investigation of the relative direct effects (valence and strength) of quality on intention. As hypothesized, some interesting findings emanated from this strategy. In a relatively large sample of researchers in Norway, the findings showed that perceived journal impact decreases the intention to publish in OA journals, while perceived content quality is

non-significant. The only antecedent that strengthens researchers' intention to publish in OA journals is visibility. In other words, researchers are starting to see that OA is indeed beneficial for reaching a larger audience; however, they appear to be skeptical of the quality and status/prestige of OA outlets and content. Whether researchers' work-self or career-self is salient also matters for how the quality constructs are construed. The findings further show that when researchers evaluate quality from a career-self perspective, perceived journal impact receives the largest effect, while perceived content quality is most important when work-self is salient. The findings will be discussed in further detail below.

Previous studies report that perceived quality is a major contributing factor in researchers' decision to choose a publication outlet (e.g., Warlick & Vaughan, 2007; Xia, 2010). This being the case, comparatively little effort has been made to systematically investigate the effects of perceived quality on intention. Publishing in non-OA journals is more often related to career advancement than publishing in OA journals (Peekhaus & Proferes, 2015), and OA journals are by comparison rated lower than their non-OA counterparts (Togia & Korobili, 2014). Although some studies indicate that perceptions are changing (Xia, 2010), the present study finds corroborating evidence of the negative perceptions of OA that still permeate academia. If researchers in Norway do not equate OA with quality, it is a clear indication that the efforts being made to inspire increased OA publishing are not as successful as they could be. As noted earlier, it is insufficient that a publication outlet publishes high quality research if the researchers do not *perceive* this to be the case.

As evident from the findings in this study, researchers do equate impact with quality, which is negatively linked to the intention to publish OA. Studies on OA impact and quality indicate that whether an article is published OA or not is not a reliable indicator of its quality, nor is the journal in which it is published (Bjork & Solomon, 2012; Harnad & Brody, 2004; Tang, Bever, & Yu, 2017). It is, however, reasonable to link quality to the work itself and to reliability of the editorial and review processes that assesses the merit of the work prior to publication. The notion that OA journals are not as rigorous in the peer review process compared to non-OA journals is widespread (Togia & Korobili, 2014), and likely explains some of the negative effects on intention in this study. In lower quality journals, these processes are typically less reliable, and in the case of predatory publishers, they are often altogether absent (Craft, 2016). This study provides evidence that when researchers

emphasize the importance of peer review and the consistent publication of quality articles as important antecedents to journal choice, they are more inclined to choose non-OA over OA.

OA's attractiveness to researchers is the accessibility advantage it provides (Swan, 2010). An article that can be accessed, downloaded, and distributed freely has the potential to reach a wider audience than one that must be purchased. The findings in the present study indicate that researchers recognize this advantage with OA journals and this, indeed, strengthens the intention to publish in them. Conversely, the same factor reduces the intention to publish in non-OA journals. Studies conducted over the years report that OA articles enjoy a citation and download advantage over their non-OA counterparts (Eysenbach, 2006; Tang et al., 2017), while other studies find they are equal (Solomon et al., 2013). This study provides evidence that researchers in Norway are to some extent realizing this advantage. However, a cautionary note seems pertinent: recognizing the distribution and visibility advantage of OA is arguably one of the more cautious steps to take towards fully adopting OA as one's preferred dissemination method.

Previous studies confirm that researchers' concept of self-identification influences role-definition and performance, and that these roles are inextricably linked to research production and dissemination (Henkel, 2005; Jain et al., 2009). Contextual or other situational cues may render the related identity salient (Daan van Knippenberg, 2000) and selecting an appropriate dissemination channel for an article—often the culmination of months of work—may readily be considered such an event. The results from the present study provide evidence that all aspects of perceived quality are deemed important when work-self, or self-identifying as a researcher, presumably, is salient. The most influential effect, however, is observed on perceived content quality. Simply put, publishing research articles in a journal perceived to contain content of high quality takes precedence for researchers in this study but is closely followed by a journal's impact and visibility. A marked difference is found when researchers consider publication venue with career-self salient. In this instance, perceptions of content quality and visibility are apparently of lesser importance compared to that of impact. This finding is in line with other accounts describing what is required to succeed in academia (McGrail et al., 2006; Peekhaus & Proferes, 2015): follow the impact, status and prestige of a journal.

There are some limitations to the study that should be addressed. First, data were collected utilizing online surveys and self-reports, two methods with clear disadvantages when it comes to data analyses and subsequent generalizations of the results (Krosnick, 2018).

Researchers exist in an environment where online surveys proliferate; thus, the willingness to participate in surveys of this kind is comparatively low. This is evident from the low response rate. As well, although substantial effort goes into item and survey design, there will always be uncertainty in interpreting results emanating from self-reported data. To some extent, a larger sample and advanced statistical techniques, such as structural equation modeling, can alleviate some of these issues. Furthermore, the study was conducted in only one country, and thus only capture the sentiments of researchers working at Norwegian universities. Future studies should endeavor to test the IDQI model in other areas as well.

Second, this study operates with broad definitions of OA and non-OA and may thus lose some of the finer distinctions contained both within and outside these categories. This may include the effects of the intentional antecedents on green or hybrid OA, or if hybrid OA is more closely associated with non-OA than it is with gold OA. Future studies would benefit from ascertaining whether Hybrid OA is construed as “OA” or “non-OA”. Third, generalizability is further affected by limiting self-identity to the general constructs of work and career identity. For instance, a fruitful avenue to explore in this context could have been the intersection of identity, social identity and personality research (e.g., Ashforth & Mael, 1989), specifically, how various personality constellations and social categorizations influence publishing behavior or performance. Although the perceived quality constructs in this study capture important aspects of quality, the framework could benefit from employing a larger and more comprehensive set of indicators such as expanding on the perceived quality dimensions discussed by Aaker (2009).

Conclusions and recommendations

The current study has some implications for how researchers, institutions, and policy makers can contribute to increased OA and OS usage. The foremost finding is that it is *perceptions* of content quality and impact that should be addressed to stimulate OA publications. Apparently, the visibility advantage of OA is accepted among this national sample of researchers; it just fails to extend to the perceived impact of OA journals and the quality of their content. Furthermore, discourse renders different aspects of researchers’ identity salient; this then proceeds to affect attitudes differently. It is a reminder that researchers are required to balance not just their identification as researchers, but also how that affects successfully pursuing a career. Although similar, the evidence from the present study shows they likely are not the same. It therefore matters to which part of researchers’ role or identity to appeal when

deciding on new policies, and how to incentivize or sanction them. Ideally, what is beneficial for careers should also be beneficial for the self.

Researchers are often challenged to find a journal which satisfies their subjective requirements for quality while, at the same time, fulfilling the terms stipulated by their benefactor or local guidelines. Researchers in these instances often need to pay a non-OA journal to free up an article, thus enabling OA to it. Although satisfying the criteria for OA, these fees are often substantially higher than APCs for fully open OA publications (Pinfield, Salter, & Bath, 2016), and not all publication funds operated by institutions support this type of OA. An interesting avenue for future research is to investigate whether fees charged to free up articles in non-OA journals are in fact having a negative impact on perceptions of traditional OA journals.

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