Assessing open access scholarly communication practices of early- and mid-career researchers in Canada: A mixed-methods study

By

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Dedication

This dissertation is dedicated to my dad who passed away after a few months of starting my PhD program. Keep resting on, dad! I also dedicate it to my daughter, Phebe Oluwafikayomi, for bearing my physical absence for almost five years while I am pursuing this incredible milestone.

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Abstract

After over two decades of the first declaration of open access (OA), the uptake of OA communication of research outputs in some disciplines has remained low. OA publishing practices vary by discipline, with a shift towards OA publishing and compliance occurring unevenly. Research has shown that OA uptake in the humanities, arts, and social science (HASS) disciplines is lagging when compared to the STEM (science, technology, engineering, and mathematics) fields. Hence, this study investigated OA scholarly communication practices of early career researchers (ECRs) and mid-career researchers (MCRs) in the HASS disciplines of research-intensive universities in Canada. This is significant because exploring why researchers at different career stages publish (or do not publish) OA will provide a better understanding about how to achieve the ideals of OA in Canada and beyond.

This study answered four research questions: RQ1. What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? RQ2. What factors influence researchers' open access publishing practices? RQ3. How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication? RQ4. What inhibits the open access scholarly communication practices of ECRs and MCRs in HASS disciplines in Canada? With theoretical underpinnings from Social Exchange Theory and Social Capital Theory, a sequential explanatory mixed-methods design was employed in this study, collecting data in two phases. In phase one, a web-based anonymous questionnaire (in both English and French) was employed to address RQ1 and RQ2. Out of the 1485 survey invitations, a total of 231 completed responses were received, given 15.5% response rate. Data analysis was carried out using descriptive and inferential statistics. Correlation and multiple regression analyses were employed to test the study's hypotheses. At the second phase, 20 semi-structured interviews (with 8 ECRs and 12 MCRs) were conducted via Zoom to address RQ3 and RQ4. Qualitative data analysis was carried out in NVivo software, following inductive thematic analysis approach. Integration of the questionnaire and interview findings was done at the discussion of findings, which allowed for comparison and in-depth explanation of the findings.

Survey findings showed that *disciplinary norm, altruism, perceived content quality,* and *situational normality* had significant influence on researchers' OA publishing practices. This suggests that researchers from disciplines with norms for OA are more likely to publish OA. Also, altruistic researchers are more likely to publish OA. It also suggests that ensuring

standards, normalcy, and peer-review quality of OA outlets might influence researchers' OA publishing practices. For the qualitative findings, four main themes emerged from the thematic analysis. These are: disciplinary norms and practices drive OA publishing practices; institutional and systemic barriers limited OA publishing; researchers' perceptions influenced their OA practices; and strategies for improving OA uptake in the HASS disciplines. Although OA publishing was positively perceived by many participants, systemic and institutional barriers (e.g., limited funding to pay for article processing charges, limited prestigious OA journals, inequities due to gender disparities) limited them from translating their positive perceptions to practice.

Based on these findings, there is a need to increase awareness, partnership, and advocacy for OA publishing. Similarly, it is pertinent to improve the prestige and quality of OA outlets. It is equally important to build and incentivize OA culture within academia, as well as fund viable and sustainable OA models. The holistic approach of this research contributes to a more accurate understanding of OA publishing practices of researchers in the HASS disciplines. This will help OA policymakers, stakeholders, publishers, researchers, and higher education institutions in Canada to better understand how to improve OA uptake. It will also help to better approach achieving equity of access to information and knowledge, which is expedient for fostering creativity and development. This study supports the development of effective methods to assess scholarly communication practices, and strategic ways to improve OA publishing in Canada and elsewhere.

Résumé

Après plus de deux décennies de la première déclaration de libre accès (OA), l'adoption de la communication sur l'OA des résultats de la recherche dans certaines disciplines est restée faible. Les pratiques de publication OA varient selon la discipline, avec un changement vers la publication OA et la conformité se produisant de manière inégale. La recherche a montré que l'adoption de l'OA dans les disciplines des sciences humaines, des arts et des sciences sociales (HASS) est à la traîne par rapport aux domaines des STIM (sciences, technologie, ingénierie et mathématiques). Par conséquent, cette étude a examiné les pratiques de communication savante en OA des chercheurs en début de carrière (ECR) et des chercheurs en milieu de carrière (MCR) dans les disciplines HASS des universités à forte intensité de recherche au Canada. Cela est important parce que l'exploration des raisons pour lesquelles les chercheurs à différents stades de carrière publient (ou ne publient pas) l'OA permettra de mieux comprendre comment atteindre les idéaux de l'OA au Canada et au-delà.

Cette étude a répondu à quatre questions de recherche : QR1. Quelles sont les pratiques de publication en libre accès des ECR et des MCR dans les disciplines HASS au Canada ? QR2. Quels sont les facteurs qui influencent les pratiques de publication en libre accès des chercheurs ? QR3. Comment les ECR et MCR des disciplines HASS perçoivent-ils la communication savante en libre accès ? QR4. Qu'est-ce qui entrave les pratiques de communication savante en libre accès des ECR et MCR dans les disciplines HASS au Canada ? Avec des fondements théoriques de la théorie de l'échange social et de la théorie du capital social, une conception séquentielle de méthodes mixtes explicatives a été utilisée dans cette étude, recueillant des données en deux phases.

Au cours de la première phase, un questionnaire anonyme sur le Web (en français et en anglais) a été utilisé pour répondre aux RQ1 et RQ2. Sur les 1485 invitations au sondage, un total de 231 réponses complétées a été reçues, étant donné un taux de réponse de 15,5 %. L'analyse des données a été effectuée à l'aide de statistiques descriptives et inférentielles. Des analyses de corrélation et de régression multiple ont été utilisées pour tester les hypothèses de l'étude. À la deuxième phase, 20 entrevues semi-structurées (avec 8 ECR et 12 MCR) ont été menées via Zoom pour répondre aux RQ3 et RQ4. L'analyse qualitative des données a été effectuée dans le logiciel NVivo, suivant l'approche d'analyse thématique inductive.

L'intégration des résultats du questionnaire et de l'entrevue a été faite lors de la discussion des résultats, ce qui a permis de comparer et d'expliquer en profondeur les résultats.

Les résultats de l'enquête ont montré que les normes disciplinaires, l'altruisme, la qualité perçue du contenu et la normalité situationnelle avaient une influence significative sur les pratiques de publication des chercheurs en matière d'OA. Cela signifie que les chercheurs des disciplines ayant des normes pour l'OA sont plus susceptibles de publier l'OA. En outre, les chercheurs altruistes sont plus susceptibles de publier OA. Il a également suggéré que le fait d'assurer les normes, la normalité et la qualité de l'évaluation par les pairs des points de vente en libre activité influenceront les pratiques de publication des chercheurs. Pour les résultats qualitatifs, quatre thèmes principaux sont ressortis de l'analyse thématique. Il s'agit des normes et pratiques disciplinaires qui guident les pratiques de publication de l'OA ; les obstacles institutionnels et systémiques ont limité la publication d'OA ; les perceptions des chercheurs ont influencé leurs pratiques en matière d'OA ; et des stratégies visant à améliorer l'adoption de l'OA dans les disciplines de la HASS. Bien que la publication d'OA ait été perçue positivement par de nombreux participants, les obstacles systémiques et institutionnels (p. ex. financement limité pour payer les frais de traitement des articles, revues prestigieuses limitées sur l'OA, inégalités dues aux disparités entre les sexes) les ont empêchés de traduire leurs perceptions en pratiques.

Sur la base de ces résultats, il est nécessaire d'accroître la sensibilisation, le partenariat et le plaidoyer pour la publication OA. De même, il est pertinent d'améliorer le prestige et la qualité des revues en libre accès. Il est tout aussi important de créer et d'encourager la culture de l'OA au sein du milieu universitaire, ainsi que de financer des modèles d'OA viables et durables. L'approche holistique de cette recherche contribue à une compréhension plus précise des pratiques de publication de l'OA des chercheurs des disciplines HASS. Cela aidera les décideurs en matière d'OA, les intervenants, les éditeurs, les chercheurs et les établissements d'enseignement supérieur au Canada à mieux comprendre comment améliorer l'adoption de l'OA. Il contribuera également à une meilleure approche pour atteindre l'équité dans l'accès à l'information et au savoir, ce qui est opportun pour favoriser la créativité et le développement. Cette étude appuie l'élaboration de méthodes efficaces d'évaluation des pratiques de communication savante et de moyens efficaces d'améliorer la publication du libre accès au Canada et ailleurs.

Statement of originality and contribution to knowledge

This dissertation is an original work and distinct contribution, specifically to the specific field of scholarly communication and open access, as well as the broad field of information studies. All chapters of this dissertation are the work of Philips Oluwaseun Ayeni, the PhD candidate, with extensive guidance from Dr. Rebekah Willson, the supervisor, as well as Dr. Joan Bartlett and Dr. Max Evans, the research advisory committee members. Data for this dissertation were collected through survey of and interview with researchers from the humanities, arts, and social sciences (HASS) disciplines of research-intensive universities in Canada.

This study contributes to the understanding of OA scholarly communication practices of researchers from the HASS disciplines in Canada. It provides a comprehensive approach using mixed-methods research design in understanding Canadian HASS researchers' OA publishing practices, which has not been the approach of existing research about OA publishing in Canada. The specific findings from this study provide current understanding of the state of OA publishing in research-intensive universities in Canada, which can help to inform strategic ways of achieving the ideals of OA in Canada.

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Chapter 1: Introduction

1.1 Background to the study

Over the past three decades, the scholarly communication landscape has evolved with changes on how research is being conducted, evaluated, and communicated. The advent of the internet and evolving technologies (Kingsley, 2008; Rentier, 2016; Sompel, Payette, Erickson, Lagoze, & Warner, 2004), changing university requirements for promotion and tenure (Bullini Orlandi, Ricciardi, Rossignoli, & De Marco, 2019), as well as the open access (OA) movement, have influenced the scholarly communication system (Bjork, 2004; Cullen & Chawner, 2011). Scholarly communication "generally encompasses the cycle through which research and other scholarly works are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use" (ACRL, 2003, p. 1). Universities and higher education institutions in general are at the forefront of scholarly communication, advancing the society through knowledge creation and dissemination (Bai, Millwater, & Hudson, 2009; Tan, 2016; Travaille & Hendriks, 2010).

Researchers play a crucial role in knowledge creation and dissemination (Jain, Jain, & Triandis, 1997), which makes them invaluable in achieving the mission of universities. Early career researchers (ECRs), who are within five years from the start date of their first research-related appointment (Social Sciences Humanities Research Council [SSHRC], 2012) and mid-career researchers (MCRs) who are within five to 15 years post PhD (Canadian Institutes of Health Reseach [CIHR], 2007) are the fulcrum of research, innovation, and development. ECRs are important in the research process because they are future leaders in the research community (Kent at al., 2022), while MCRs are at most productive and influential years of their academic career, where most of their scholarly achievements occur (Baldwin & Chang, 2006). Thus, ECRs and MCRs are integral part of achieving the ideals of OA because they are more involved in research production and dissemination, and their involvement in OA is crucial in achieving the ideals of OA (Nicholas, et al., 2020a).

Traditionally, researchers disseminate their research findings by publishing in journals and conference proceedings (Correia & Teixeira, 2005), often behind paywalls. However, changes in funders and institutional policies have influenced how research outputs are disseminated, with concerted efforts to make open the default of scholarly outputs

(Hrynaszkiewicz & Cockerill, 2012; Mering, 2020). However, OA practices of ECRs and MCRs may vary significantly as the former are at a vulnerable stage of their academic career (Harley, Acord, Earl-Novell, Lawrence, & King, 2010), facing different constraints while the latter have established their credentials (Bazeley, 2003). These differences may have a corresponding influence on their OA publishing practices. Existing studies have examined scholarly communication attitudes and behaviours of ECRs in general, with less focus on their OA publishing practices (Blanca et al., 2017; Nicholas et al., 2020a; Xu, Nicholas, Zeng, Su, & Watkinson, 2018). However, studies focusing primarily on OA practices of ECRs and MCRs are limited, and the few studies that exist were conducted outside of Canada, leaving a huge gap in knowledge.

1.2 Statement of the problem

The last two decades have seen a growing trend towards the advocacy and practice of OA scholarly communication. As such, the proportion of scholarly literature that is openly accessible has increased continuously (Severin, Egger, Paul, & Hürlimann, 2020). However, OA communication of research outputs has remained low in some academic disciplines, particularly in the humanities and social sciences (Björk, 2017; Piwowar et al. 2018; Suber, 2017). For instance, Piwowar et al. (2018) found that of all articles published between 2009 and 2015, only 3.0% were published in OA journals in humanities, 2.4% in arts, and only 1.3% in the social sciences disciplines. The authors also reported that 18.7% of articles in social sciences were deposited in institutional repositories, compared to 6.3% in humanities and 4.9% in arts. Laakso and Björk (2022) studied the OA availability of articles published during 2014–2019 in business, management, and accounting fields. They report that only 8% of the articles are individually open. This suggests that the majority of articles in the HASS disciplines were not published in OA outlets. It also indicates that the research conducted in the HASS disciplines that could have translated into societal development have remined behind paywalls those who cannot afford the associated cost of access.

Existing studies have examined the OA scholarly communication practices of researchers in general, however, little is currently known about the factors that may be responsible for the low uptake of OA in the HASS disciplines. Earlier studies have found that OA publishing in the HASS disciplines is beset with misconceptions (Eve, 2015; Gross & Ryan, 2015; Steele, 2012)

and limited funding opportunities (Benneworth & Jongbloed, 2010; de Winde et al., 2020; Eve, 2015; Linton, 2018). While these studies have provided a starting point for understanding the barriers to OA, there is paucity of research about the factors that may be responsible for low uptake of OA in the Canadian context.

In Canada, there has been a reverberating push for OA, especially as the three main funding agencies (i.e., Tri-Agency) released an OA policy on publications in 2015 (to be renewed in 2025), requiring all research funded by them to be published OA (Hurrell, Smith, & Wake, 2017). In fact, Canadian researchers were part of early signatories to the Budapest OA initiative (Morrison & Waller, 2008). As such, one would expect that Canadian institutions should lead in terms of OA uptake and practices. On the contrary, however, research has shown that OA uptake across several academic disciplines in Canada is low, with practice and compliance occurring unevenly (Larivière & Sugimoto, 2018; Moskovkin et al., 2021).

A recent study found that Canadian researchers publish less often in OA outlets, although they often cite OA articles (Simard et al., 2022). This suggests that many research being carried out in the HASS disciplines are behind paywalls, inaccessible to users, practititioners and policy makers, particulary those with no institutional susbscriptions to journals. Sadly, empirical research that collects data directly from researchers to find out the factors that may be responsible for the low uptake of OA in Canada is sparse. As such, there is a huge gap in knowledge regarding the state of OA publishing by Canadian HASS researchers. This study therefore fills this gap by investigating OA scholarly communication practices of ECRs and MCRs in the HASS disciplines of research-intensive universities in Canada.

1.3 Significance of the study

This study is significant because it fills a gap in research about OA publishing practices of researchers in the HASS disciplines in Canada. Past literature relating to OA publishing have focused generally on scholarly communication practices of ECRs (Blanca et al., 2017; Nicholas et al., 2020a), with limited attention given to factors influencing or limiting OA publishing practices of researchers at different career stages. Hence, this research provides a complete understanding of OA publishing practices of ECRs and MCRs, through mixed-methods research design. The questionnaire provides a general understanding of factors that influence researchers'

OA publishing. This will help inform practitioners, policy makers, researchers, and universities of what needs to be done to improve OA uptake in Canada.

Of equal importance is developing strategies that will help reduce the barriers to OA publishing in the HASS disciplines. The in-depth discussions from the interviews provide detailed understanding of researchers' OA publishing practices and perceptions, and the barriers limiting their OA publishing practices. Findings from the interviews also provide strategic ways of improving OA uptake in Canada. As such, this study is significant methodologically as it provides a practical guide and step-by-step approach to using mixed-methods sequential explanatory design. It adds to theoretical development and application of Social Exchange Theory and Social Capital Theory in quantitatively assessing OA publishing practices of researchers. It also highlights qualitative thematic analysis approach for evaluating researchers' OA publishing, thereby adding methodologically and theoretically to the growing body of knowledge on OA scholarly communication.

Overall, this study provides valuable insights into the current OA publishing practices, influencing factors, perceptions, and barriers limiting OA publishing in the HASS disciplines of research-intensive universities in Canada. It provides best practices and strategies for reducing barriers to OA publishing practices by researchers, thereby helping to provide valuable ways of improving OA uptake in Canada. To this end, this research should prove of interest and value to the HASS disciplines, faculty and researchers, publishers, academic libraries, research-intensive universities, and funding agencies in Canada. By providing strategic ways to achieving OA to research outputs in Canada, this study also contributes to reducing inequalities in access to knowledge, especially among the Global South.

1.4 Research aim and questions

The overarching research aim is to examine the OA scholarly communication practices among researchers in the HASS disciplines in Canada. To address the research aim, four questions were posed, as follows:

RQ1: What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers' OA publishing practices based on career stage, professional status, and academic disciplines?

RQ2: What factors influence researchers' open access publishing practices?

RQ3: How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication?

RQ4: What inhibits the open access scholarly communication practices of ECRs and MCRs in HASS disciplines in Canada?

These questions helped to adequately address the research aim. For instance, RQ1 helped to identify the OA outputs where researchers have published, the frequency of publishing in those outlets, as well as the percentage of their research outputs published in those outlets. RQ2 provided an understanding of the factors that influence researchers' OA publishing practices, by adapting factors that have been validated in previous research. This addressed the research aim by revealing factors that researchers, policy makers, and OA practitioners might focus on when examining OA publishing. RQ3 addressed the research aim by examining participants' perceptions of OA. This is important because how researchers perceive OA publishing might determine their engagement and practice. Lastly, RQ4 addressed the research aim by revealing the barriers that hinder researchers from publishing OA, which is fundamental to informing policy changes, and what could be done to improve OA among researchers from the HASS disciplines.

1.5 Structure of the dissertation

The rest of this dissertation is organized as follows. Chapter 2 discusses relevant literature on scholarly communication and OA publishing of research, which is presented in five sections: Section 2.1 introduces the main phenomenon of interest by defining scholarly communication of research outputs; Section 2.2 examines the literature on OA publishing, focusing on the routes, models, initiatives, as well as the benefits of, and arguments against OA publishing; Section 2.3 explores the literature on publishing trends in the HASS disciplines; Section 2.4 examines the literature on OA publishing practices of ECRs and MCRs; Section 2.5 identifies the barriers to OA publishing practices of researchers; Section 2.6 reviews the theoretical background of factors influencing OA publishing. It concludes with the summary of literature review.

Chapter 3 provides the discussion of the research paradigm and methodology that informs the design of the study. It then discusses the theoretical framework informing the study's

hypotheses. It highlights the research questions. Next, ethical consideration and approval are discussed. The study participants, data collection, and analyses strategies are also discussed in the chapter. The chapter provides the description of the two phases of data collection and analysis, including the rationale, methods, and approaches used. It concludes with the explanation of how quantitative and qualitative findings are integrated in the study.

Chapter 4 presents the questionnaire findings, with statistical analyses of measures and hypotheses tested using correlation and regression analyses. The chapter closes with a summary of the results, and a summary of whether the hypotheses were supported. Chapter 5 explains the interview findings, starting with the population and response rate, and extensive description of thematic analysis procedures used for analyzing the interview data. It concludes with detailed explanation of four themes derived from the thematic analysis. Chapter 6 discusses each of the research findings by research questions, integrates questionnaire and interview findings, and then compares them with existing research. The chapter closes with contribution to research and theoretical contribution to library and information science scholarship. Chapter 7 concludes the study by providing summary, limitations of the study, and implications for practice. The chapter closes with conclusions and suggestions for future research.

Chapter 2: Literature Review

2.0 Chapter overview

This section presents the review of existing literature on scholarly communication of research outputs. It discusses the routes, models, initiatives benefits of and arguments against OA publishing. It also reviews the publishing trends in the HASS disciplines, open access publishing practices of ECRs and MCRs and barriers and open access publishing. It includes the review of theoretical background and factors influencing OA publishing among researchers and concludes with the summary of the chapter.

2.1 Scholarly communication of research outputs

Scholarly communication is the process of sharing and publishing the outcome of research to a wider academic community and beyond (Cullen & Chawner, 2011; Halliday, 2001). The Association of College and Research Libraries (ACRL, 2003) defines scholarly communication as "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use" (para. 1). The ACRL's definition focuses more on publication and how it is circulated and preserved. Other definitions focused more on the people aspect of the process. For instance, Thorin (2006) described scholarly communication to have "somewhat broader meaning than publication. It also includes the processes by which scholars communicate with one another as they create new knowledge and by which they measure its worth with colleagues prior to making a formal article available to the broader community" (p. 222). Thorin emphasized how scholars interact with each other in the process of creating new knowledge. As such, this definition is more suited for this study, as it focuses on researchers who are the main drivers of research and how its communicated.

Outputs of research have been communicated through traditional channels for a long time. The communication process can include public dissemination in conferences and preprints, publication in scientific journals, or through informal networks as a result of electronic media (Graham, 2000; Shehata, Ellis, & Foster, 2015). Traditionally, research is communicated by speech and writing (Widén, 2010), through the submission of research manuscripts to a journal for rigorous peer review, publication and dissemination, making new knowledge available to a community of researchers who can further build on it (Cullen & Chawner, 2011). This system

included means of communication in print journals which have rapidly evolved over time (Odlyzko, 2002).

Since the beginning of the 21st century, the field of scholarly publishing encountered the OA phenomenon. In the early 2000s, journals subscription costs increased significantly due to internet distribution of journals (Edlin & Rubinfeld, 2004) and an influx of technologies used in scholarly communication (Sompel et al., 2004). Leveraging the internet and technology, publishers began to offer both the traditional and electronic journal forms of publishing, and then raised the price of subscriptions (Chang, 2006). At the same time, the budgetary allocations of academic institutions declined (Harley et al., 2010; Kennison & Norberg, 2014). Hence, most academic libraries were unable to afford the cost of subscription, and the traditional journal system models were no longer sustainable (Cullen & Chawner, 2010).

The rising price of journal subscriptions reached the point that even large academic institutions with large funding also rebelled and started considering a new alternative to the traditional publishing model (Suber, 2012). This occurrence, popularly referred to as the 'serials crisis' (Jurchen, 2020; McGuigan, 2004) caused limited access to research outputs, as many libraries could not provide users access to all the information resources they needed (Mering, 2020). This, therefore, informed why academic libraries, advocates, and research institutions began to seek alternative modes of scholarly communication and potential solutions to the "serials crisis," which led to the rise of OA (Suber, 2003, 2012).

Due the growing influx and ubiquity of the internet, scholarly communication systems witnessed a real paradigm shift in how academic knowledge is being shared, especially with the development and use of new platforms for both the production and the dissemination of knowledge (Demeter, Jele, & Major, 2021). Similarly, the 'pay-to-read system' of academic publishing makes it difficult for non-academic communities, non-governmental organizations, independent scholars, and members of the public to access information. These categories of users are usually not subscribed to academic libraries and/or lack funds to access articles published behind paywalls, thereby stifling scholarly activities throughout the research cycle (Eve, 2014; Gross & Ryan, 2015). Open access, therefore, was deemed a tool for achieving equity of access to knowledge (Fleming, Wilson, Hart, Therrien, & Cook, 2021; Johnson, 2019).

2.2 Open access publishing: overview, routes, initiatives, and models

The OA movement has remained one of the most widely debated trends in the scholarly communication system. As such, several definitions of OA have been proposed. The first definition of OA is by Budapest Open Access Initiative (BOAI, 2002):

> By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (para. 3)

Similarly, the Berlin declaration (2003) and Bethesda statement (2003) on OA both emphasize free, immediate availability, and unrestricted access to scholarly literature (Correia & Teixeira, 2005). Hence, the Budapest Open Access Initiative (2002), Bethesda Statement (2003) and the Berlin Declaration (2003) definitions of OA, commonly called the BBB definitions have practical implications for information usage. A simpler definition was provided by Suber (2003) when he posits that "open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions" (p. 4). Beyond the definitions that have been popularly proposed in literature for the past two decades, a more recent study (Severin et al., 2020) defined OA as "scholarly outputs that are free to read online, either on a journal website or through an open repository, and that might or might not be free to reuse" (p. 3). This study does not attempt to redefine OA, hence, the definition by Severin et al. (2020) is adopted in this study.

Pooley (2016) provides some justifications for OA. The first is the principle of openness which emphasizes that knowledge should be freely available. The second justification is that there is "a systemic mismatch between the existing paywalled publishing arrangements and the promise of worldwide access" (p. 6151). This implies that for-profit publishers are working against the principles of free access to knowledge through exorbitant subscriptions fees, making it difficult for researchers to contribute meaningfully to knowledge advancement. Hence, a more justifiable and user-friendly model for academic publishing is warranted. This echoes the primary goal of OA, which is to ensure that scholarly research is made open and freely accessible to everyone without copyright barriers, except for gaining access to the internet (Bjork, 2004; Bjork, Laakso, Welling, & Paetau, 2014; Suber, 2003). OA is not an attempt to

bypass the peer review process. As Peter Suber clarifies, OA is compatible with every kind of peer review, from the most conservative to the most innovative (Suber, 2003). The next sub-sections discuss the routes, models, initiatives, benefits and arguments against OA in great detail.

2.2.1 Routes to OA publishing

Initially, OA was set to be achieved through two main routes. These are the gold route, also known as OA journals and the green route, also known as self-archiving or institutional repositories (IRs) (Bjork et al., 2014; Furnival & Hubbard, 2011; Suber, 2003). OA achieved through journals is called *gold OA*, while OA achieved through repositories is called *green* OA (Suber, 2003, p. 3). However, as Holzman (2016) puts it, "today OA comes in various colours – gold and green – and with various statuses – gratis and libre. It involves not just access to a scholarly work, but the ways in which the user may re-use copyrighted material" (p. 179). Hence, this section discusses these different routes to OA publishing.

OA journals

OA journals provide free access to research through electronic journals (Harnad et al., 2004). Publishing in OA journals allow authors to retain copyright (i.e., the right to determine how their publications can be used, published, or distributed) of their research work (Bjork, 2004) and this has been the most widely used channel for OA publishing (Ghane & Niazmand, 2016). OA journals operate using information technology infrastructures and are peer-reviewed like the traditional journals systems. According to Bjork (2004), OA journals can include a wide spectrum of unique features. These are storage mechanism for the papers and the metadata (static Web pages vs. database), format of the papers (HTML, PDF, XML etc.), management of drafts and the review process, indexing and linking to external publications, security back up, among others.

OA journals perform their own peer review, whereas OA repositories distribute articles that are peer reviewed elsewhere (Suber, 2012). Creaser (2011) submits that OA journals are closest to the traditional route, in that papers are submitted, peer reviewed, and published. The full text of OA journals and articles can be freely read, as the publishing is funded through means other than subscriptions (Laakso et al., 2011). This is because "the founding motive for OA journals is to make their quality controlled-contents freely available to all comers, without

charging authors or their institutions" (Correia and Teixeira 2005, p. 358). However, the current mode of operation of most OA journals has shifted significantly to profit-making business (Larivière, Haustein, & Mongeon, 2015). Some type of OA journals now require the payment of articles processing charges (APCs) to make contents freely available to the users because of the models they operate. More discussion about OA models is provided in section 2.2.2.

Institutional Repositories

Institutional repositories (IRs) are digital collections that capture and preserve the intellectual output of institutions (Crow, 2002). Crow further described IRs as "digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end users both within and outside of the institution, with few (if any) barriers to access" (2002 p. 16). Similarly, Lynch (2003) defined IRs as a "set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members" (p. 2). Rosenblum (2008) gave a detailed description of IRs as:

> "a resource or a system that facilitates the capture, storage, preservation, and dissemination of an institution's intellectual outputs in an electronic form. Such outputs vary from one institution to the other, but often capture theses and dissertations, while others capture published papers, unpublished preprints, working papers, conference presentations, datasets, and teaching materials" (p. 2).

Some common features from the foregoing definitions of IRs include capturing, dissemination and preservation of scholarly outputs and digital contents. In other words, IRs are digital platforms that enable the capturing, dissemination, use, and preservation of intellectual outputs of institutions. Since the early 2000s, IRs have become a common infrastructure for preserving and ensuring access to scholarly contents in higher education institutions (Francke, Gamalielsson, & Lundell, 2017; Genoni, 2004). It has been reported that several ground-breaking papers first appeared in arXiv, the first repository developed in 1991 at the Cornel University Library (Wang & Zhan, 2019). As research articles and journals become increasingly available in digital formats, the need for preservation and continued access became imperative. Thus, IRs have been used as platforms for ensuring long-term preservation of libraries' digital assets such as e-journals, e-books, and online formats of subscription journals (Cullen & Chawner, 2010).

In Canada, doctoral theses have long been published in a central Canadian repository called Theses Canada, which is a collaborative program between Library and Archives Canada, and Canadian Universities (Canada, 2022). Tri-agency recognize the deposit of final, peer-reviewed manuscript into an institutional or disciplinary repository within 12 months of publication as meeting OA requirement (Tri-Agency, 2016). Researchers have advocated for IRs as an important part of scholarly communication (Koler-Povh, Mikos, & Turk, 2014). In fact, some researchers see IRs as alternative channel and veritable model of scholarly communication (Ferreras-Fernandez & Merlo-Vega, 2015). A growing number of universities and funding agencies then began to require the digital deposit of thesis, dissertation, and funded research outputs in IRs (Harnad et al., 2004; Suber, 2007). Authors are encouraged to deposit preprints (before peer review) and the postprints (author accepted manuscripts) of their articles in IRs. Zhang and Watson (2017) posit that the green route is the most economical approach to comply with OA policies. Hence, the role of IRs in the scholarly communication process is increasingly important.

Libre and Gratis OA

Beyond the green and gold OA, there are other OA types according to access and usage. For instance, Suber (2012) distinguished between *gratis* OA which is free to view, and *libre* OA, which is free to view, reuse, and rework. In his words:

> "Gratis OA is free of charge but not freer than that. Users must still seek permission to exceed fair use. Gratis OA removes price barriers but not permission barriers. Libre OA is free of charge and also free of some copyright and licensing restrictions. Users have permission to exceed fair use, at least in certain ways. . . Libre OA removes price barriers and at least some permission barriers" (p. 66)

In summary, there are various routes to OA, which includes the *gold* OA that uses electronic journal system and conducts peer-review, while the *green* OA is achieved through IRs or self-archiving. In terms of access and usage, the *gratis* OA is free to view, while the *libre* OA is free to view, use, and reuse. The rapid development in scholarly communication system and the use of technology has caused the evolving terminologies. Besides the routes to OA publishing, several models for publishing OA publishing have evolved, particularly regarding the publishing of articles in journals. OA publishing routes focus on access and usage, while OA models focus on the business aspect of publishing, as dominated by various publishers including

for-profit and non-profit academic publishers. The next section focuses on OA publishing models in detail.

2.2.2 OA publishing models

The traditional business model for scientific publishers relies on restricting access to published research in order to recoup the costs of the publication process (Chang, 2006). However, several models of academic publishing have emerged over the past two decades. One of these publishing models is the *gold* OA model. This is the model whereby researchers (or their institutions/funders) make advance payments of APCs to publish articles that are freely accessible in scholarly journals online (Schimmer, Geschuhn, & Vogler, 2015). The increasing push and advocacy to make research open has made for-profit publishers to introduce fees for publishing OA to continue their profitability through scientific publications (Harnad et al., 2008; Piwowar et al., 2018). Many for-profit publishers operate the gold OA model. Since the transitioning to digital publishing, the five most prolific commercial publishers (i.e., Sage, Reed-Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis) have increased their share of the published outputs, dominating the publishing market (Larivière et al., 2015). Whereas subscription journals have been flipping to OA for many years, the increasingly unsustainable economic costs of the subscription model (Schimmer et al., 2015) have led to the rise of alternative model such as the *gold* OA.

Likewise, many publishers also operate the hybrid OA model. According to Björk (2012), *hybrid* OA journals are "traditional closed access subscription journals that offer individual authors the opportunity to open their articles for free access from day one, against a payment" (p. 1). As Mueller-Langer and Watt (2014) discussed, the *hybrid* OA provide delayed, partial, or retrospective OA, or offer an additional open choice to authors (e.g., Springer Open Choice). With the open choice, authors or their institutions are required to make payment of APCs (Mueller-Langer & Watt, 2014). The publishers most times enter deals with libraries and charge them for 'offsetting deals' to combine subscription and OA publications for involved institutions (Kuballa, 2017). For example, some *hybrid* OA journal publishing deals were concluded with major publishers such as Springer Nature and Wiley though the Project DEAL (Demeter et al., 2021), promulgating the use of APCs in OA publishing.

The use of APCs for funding OA publishing was pioneered by BioMed Central, a start-up publishing company in 2002 (Björk, 2012), which is now owned by Springer Nature since 2008 (Borrego, Anglada, & Abadal, 2021). Since then, many publishers who have moved to electronic publishing since early 2000s have been charging authors to make their research available to users. The OA business models that charge APCs are the most widely discussed barriers to OA publishing in literature (Bjork & Solomon, 2015; Bruns, Rimmert, & Taubert, 2020; Copiello, 2020; Johnson, Pinfield, & Fosci, 2016; Morrison, Salhab, Calve-Genest, & Horava, 2015).

Moreover, funding agencies such as cOAlition S, also advocates for the immediate availability of research funded by them, with permission for authors to use funding money to publish in gold and hybrid journals, with a cap on APCs (Johnson, 2019). The gold and hybrid models of OA publishing have been criticized by researchers, advocates, and libraries as 'double-dipping,' that is, maintaining subscription rates while charging authors page recovery costs (Holzman, 2016; Taubert, Bruns, Lenke, & Stone, 2021). Depending on the publishers, authors may have to pay page and colour figure charges for the printed version of their articles. They may also be charged additional APCs for making the articles OA in the online version (Kuballa, 2017). This explains the exploitative nature of the *hybrid* OA and how it continues to entrench inequities in OA publishing landscape. This may be the reason some funders such as the Gates Foundation and Wellcome Trust recently announced that they will no longer cover APCs for hybrid OA journals (Stokstad, 2018).

As such, there is a global movement and strong advocacy in support of diamond OA – a publishing model that works without fees for authors and readers, projected, and advocated for as a sustainable model for OA publishing (Taubert, 2021). This model is also referred to as the platinum OA (Pearce, 2022). For example, In Canada, the Public Knowledge Project (PKP) and its partnership with the dissemination platform Érudit have received support from SSHRC to build open, non-commercial infrastructure for sharing research (Alperin, 2022). Other funders in Europe (e.g., cOAlition S) have continued to support the funding of OA publishing in universities. The diamond OA also is not a perfect model, particularly because it is mostly reliant on volunteer-based service (Alperin, 2022; Bosman et al., 2021). As Alperin (2022) argues, "reliance on volunteers and institutional support (such as access to servers, software, and IT staff) make some diamond OA journals precarious" (p. 233). Similarly, a large study commissioned by cOAlition S in 2020 to gain a better understanding of the OA diamond

landscape reported that 60% of OA diamond journals depend on volunteers to carry out their work (Bosman et al., 2021). Hence, the sustainability of technical infrastructure, staffing, and limited funding have been the main barriers to most diamond OA journals.

One of the widely discussed and controversial publishing models in the OA publishing landscape recently are the transformative agreements. Transformative agreements (TAs) are also known as 'offsetting', 'read and publish' or 'publish and read' agreements (Borrego et al., 2021). Borrego et al. (2021) defined TAs as "an umbrella term that encompasses a continuum of contracts, ranging from traditional subscription licences that grant discounts in publication fees or vouchers to agreements allowing unlimited open access publication" (p. 217). TAs are a form of subscribe-to-open model, with the advantage to maintain existing subscription infrastructure and procurement processes, thereby eliminating the need for costly APCs (Bosshart, Cookson, & Hess, 2022).

Many institutions of higher learning enter TAs with publishers to change their journal subscription model towards paying for an institution's authors to publish in select venues (Given & Polkinghorne, 2021). This helps to shift the cost of publishing OA from authors to institutions. As such, TAs are proving to be a critical steppingstone towards OA goals (Hill, 2022) with potential to increase OA publishing (Bosshart et al., 2022; Given & Polkinghorne, 2021). TAs are recognized as one of the most effective tools for the development of OA (Moskovkin, Saprykina, & Boichuk, 2022). Many universities in Germany, the Netherlands, Austria, the UK, Ireland, and the USA, and funders in Europe are the most active in concluding TAs, with most active participants in signed agreements with Elsevier, Springer Nature, Wiley, Taylor & Francis, and Sage (Moskovkin et al., 2022).

However, TAs have received strong criticisms for keeping authors in the shadows of the negotiation process (Given & Polkinghorne, 2021) with no transparency on price and publication costs (Farley, Langham-Putrow, Shook, Sterman, & Wacha, 2021). Shearer (2022) argues that TAs do not transform journals into OA but make individual articles available for a fee. She submits that TAs alone "will only result in a slow and partial transition to open access, with content remaining siloed in various publisher platforms" (p. 1). TAs only transition highly selective journals to OA, excluding journals with high APCs (Inchcoombe, Winter, Lucraft, & Baker, 2022), thereby marginalizing research voices from the Global South (Raju, Claassen, Pietersen, & Abrahamse, 2020).

Other publishing models include the bronze OA, whereby journals provide temporary but not default access to articles in the form of special issues. This category of miscellaneous OA articles that publishers make open either temporarily or permanently, has been referred to as the bronze OA (Piwowar et al., 2018). This suggests the multifarious nature of OA publishing models and how quickly they are evolving, posing several challenges to adoption and practices across disciplines.

2.2.3 OA initiatives and funders' requirements

Several funding agencies have voiced their acceptance and adoption of opening access to the scholarly output of research funded by them. More recent declarations and coalitions for OA publishing includes the Plan S which was launched in 2018 and supported by 'cOAlition S' a consortium of European research funders. 'Plan S initially planned that from January 2021, they will require immediate open access (OA) to all their scientific publications (Johnson, 2019). However, Plan S later changed the start date to implement their policy to 2023 after several consultation efforts from researchers and stake holders (Bosman, Frantsvåg, Kramer, Langlais, & Proudman, 2021). Other earlier efforts include the Research Councils UK OA adoption in 2006, now referred to as UK Research and Innovation (Research Councils UK, 2006). Likewise, the Higher Education Funding Council for England set out plans to require OA to research submitted to Research Excellence Framework, the system for assessing the quality of research in UK higher education system (HEFCE, 2012).

In North America, many governmental funding agencies have highlighted a set of OA principles researchers have to adhere to. For instance, in Canada, Tri agency released a joint policy in 2015 that grant receivers should make agency-supported research freely accessible within 12 months of publication, either through OA journals or repositories (Hurrell et al., 2017). Also, in June 2021, the Fonds de Recherche de Quebec (FRQ) announced that it joined cOAlition S, which makes the FRQ commit to ensuring immediate access to research funded by them. In the United States, the National Science Foundation (NSF) called for research outputs to be freely available to the public and compliant repository designated by the NSF within 12 months of initial publication. Similarly, the Bill & Melinda Gates Foundation, one of the prominent private funders, also asked that both results and data of research funded by them be made available immediately upon publication with no embargo period (Dalton, Tenopir, & Bo-

Christer, 2020). Just recently, the United States Office of Science and Technology Policy (OSTP) released a policy guidance on August 25, 2022, to make taxpayer-supported research available to the public at no cost (Horder, 2022). This indicates a growing number of funders support and requirements for OA publishing, making the OA movement a widely discussed and controversial policy in the scholarly communication milieu. The next section will discuss the benefits of OA publishing to researchers, readers, and the society at large.

2.2.4 Benefits of OA publishing

Open access has had significant impact on how research is created and disseminated (Correia & Teixeira, 2005; Suber, 2003). OA is beneficial for increasing the reach, usage, and impact of research outputs (Harnad & Brody, 2004). As such, the benefits of OA in terms of increased visibility of research findings has been established in literature for years. For instance, Eysenbach (2006) conducted a foremost study establishing the citation advantage of OA articles, and found that "in an analysis stratified by subject, there was a trend for an OA citation advantage in almost all subjects" (p. 0694). However, two years later, a randomized trial involving 36 mainly US-based journals conducted by Davis, Lewenstein, Simon, Booth, and Connolly (2008) found no citation effect on OA articles, except the positive effect on downloads. This could be because their study was limited to high impact journals with wide subscription bases.

More recent studies have confirmed that OA helps to increase citation of research articles from different disciplines. Clements (2017) assessed citation difference in articles published in hybrid marine ecology journals and found that OA articles received significantly more citations than non-OA articles. Clements' findings confirmed an earlier study that found that OA articles published in ecology and sociology journals received more citations counts than non-OA articles (Norris, Oppenheim, & Rowland, 2008). Other studies have confirmed citation benefits of OA publishing, particularly in hybrid OA journals (Miguel, Chinchilla-Rodriguez, & de Moya-Anegón, 2011; Mueller-Langer & Watt, 2014). Miguel et al. (2011) report that in terms of citation advantage, OA journals have achieved a share of around 15% of citations of all SCOPUS indexed journals for Asia and Africa, with remarkable 73% for Latin America. This is consistent with a recent study which found higher frequency of OA uptake in Latin America, with the proportion of OA journals varying from 70% to 90% across disciplines (Demeter et al., 2021).

In terms of impact and prestige of OA journals, some studies have found similar rating and impact between OA journals and traditional journals. For instance, Björk and Solomon (2012) collected data from Ulrichsweb, Journal Citation Reports 2010 (JCR), SCImago Journal & Country Rank, and the Directory of Open Access Journals (DOAJ). They analyzed the impact factors of OA journals and subscription journals. Their results showed that the impact factors of OA journals were approximately 76% and 67% as high in JCR and Scopus respectively when analyzed by journal. Similarly, several studies have found an increase in subject-based hybrid journals, which offer OA option for a fee (Demeter et al., 2021; Zhang & Watson, 2017). By retaining their agelong practice and prestige, articles published in hybrid journals tend to be cited more (Demeter et al., 2021). Merga and Mason (2020) also found that researchers publish OA because of its citation advantage to ECRs. Although there is no consensus about the citation advantage of articles published as OA, more studies have established the effect of OA publishing on increasing the impact of research outputs.

Beyond the citation advantage to authors, research has shown that OA is beneficial to other user categories as well. With the growing advocacy and positive change in perceptions to OA globally (Gross & Ryan, 2015; Lwoga & Questier, 2015; Serrano-Vicente, Melero, & Abadal, 2016), the scholarly community and non-academic audiences stand to benefit in several ways. Dudley (2021) asserts that almost 50% of scholarly articles are now OA in some form, paving the way for scholars at most institutions and independent scholars to have access to knowledge. Similarly, Gross and Ryan (2015) submit that 49% of their survey respondents strongly agreed that OA increased the circulation of research than subscription models. Other benefits of OA publishing as noted by their respondents included “greater visibility (82%), quick publication turn-around times (34%), and equity of access (68%)” (p. 82).

In terms of the societal impact of OA, Tennant et al. (2016) report that it helps to advance citizen science initiatives, and it serves as a level-playing field for researchers in developing countries. A recent study (Stich, Spann, & Schmidt, 2022) investigated preferences of 243 economists in Germany, Austria, and Switzerland regarding their valuations of OA publishing. Stich et al., (20022) found that “pure open access is preferred to hybrid open access and hybrid open access is preferred to no open access” (p. 278). This further demonstrate the growing acceptance of OA publishing in the social sciences due to the benefits that accrue from providing free access to scholarly articles. As shown in literature, the benefits of OA publishing include

increased reach and visibility of research, citation advantage for researchers, and equity of access to research. The next section will review some arguments that have been put forward against OA in the literature.

2.2.5 Arguments against OA

Despite the widely discussed advantage of OA, there have been several arguments opposing the ideals of OA. As Parker (2013) pointed out, the argument about the quality of scientific publication of OA model should be taken seriously. He highlights that there is a need to develop evidence-based models of publishing which lead to sustainable high-quality research, which cannot be achieved effectively with the imposition of a universal OA model. This is of particular interest to ethicists who are more concerned about the compatibility of OA with sustainable research collaboration (Parker, 2013). One of the major arguments to OA publishing the is the rise of predatory publishing, encouraged by the increasing acceptance of OA publishing in the academia.

Predatory publishers exploit the author-pays gold OA publishing, without providing quality peer-review (Butler, 2013; Lukić et al., 2014), threatening not only the entire field of publishing but are a cause of major concern for academics, as well as the publishers (Padmalochanan, 2019). As Dudley (2021) submits, "the pay-to-publish OA model marginalizes peripheral scholars and incentivizes the development of sub-standard and predatory journals" (p. 1). This suggests that the pay-to-publish OA model entrenches the prevalence of low-quality publications from predatory publishers. Butler (2013) estimates that about 1-10% of authors publish in predatory journals. Authors are often lured through email solicitation, fake editorial board members, with fast review process and quick publication time (Bowman, 2014; Burggren, Madasu, Hawkins, & Halbert, 2018). This has made many researchers to negatively perceive OA publications, limiting their engagements in OA outlets.

Negative perceptions of OA publishing have either been associated with low peer-review quality, or with predatory OA publishing (Beall, 2013; Gross & Ryan, 2015; Schroter, Tite, & Smith, 2005). For instance, Gross and Ryan (2015), in their study on the perceptions of OA journals in the arts and humanities in Australia, found that researchers perceived OA journals to be of lower quality than their pay-to-read counterparts. In fact, 8% of the respondents believed that OA publications are not peer-reviewed. Furthermore, they reported that 9% of their

respondents considered OA journals of lower quality than subscription publications, and 45% were unsure of the quality of OA journals.

In a similar study, Coonin (2011) surveyed 1256 business faculty from American School of Business in 2009. Findings showed that 55.5% of the respondents thought OA journals were less prestigious than subscription-based journals. While only 6.1% said they were not less prestigious, 27.1% said it depends on the journal (Coonin, 2011). However, against several debates that OA publishing are of lower quality, Kingsley (2013) argued that the quality of a journal is defined by its editorial policy and authorship, not its publishing model, and OA need not be an impediment to quality or peer-review. To an extent, business model of OA publishing by some journals has led to the proliferation predatory OA publishing with deceptive practices (Berger & Cirasella, 2015; Burggren et al., 2018), thereby affecting general understanding and acceptance of OA publishing. However, this negative perception is changing as scholars are now valuing OA and are negotiating for its adoption in their disciplines (Gross & Ryan, 2015).

Further, arguments about uncitedness of articles published in OA journals also persist in the literature. According to Liang, Zhong, and Rousseau (2015), uncitedness refers to the status of academic publications, authors or fields that do not receive any citation within a time window. Dorta-Gonzalez, Suarez-Vega, and Dorta-Gonzalez (2020) also investigated uncitedness of OA journals and articles. They found that OA journals were not associated to uncitedness of articles but have lower uncited rates. This may be a different reality for OA monographs/books. In 2013 OAPEN-NL conducted a study to gain experience with OA publication with monographs in the Netherlands. The authors found that there was a significant increase in the number of times a book was viewed on Google Books when it was made OA. However, they concluded that the project found no increase in citation for OA books (Ferwerda, Snijder, & Adema, 2013). This contradicts what has been reported in literature regarding the importance OA journals and articles, highlighting differences and peculiarities of OA publishing according to disciplinary factors. Besides, their study was conducted 10 years ago when OA publishing was just gaining momentum. However, research has shown that there is often a time lag between publication date and citation peak (Glänzel, 2007), which may be the reason some articles are more cited than others.

In summary, several studies have shown that many academics and learned societies have often been opposed to OA due to misconceptions and worries about licensing and plagiarism, or

collegial acceptance (e.g., Cullen & Chawner, 2011). Other arguments against OA exist in literature, but this study does not attempt to cover all of them, as it is focused more on publishing practices and experiences of researchers. More discussions about perceptions and other barriers to OA publishing will be covered in section 2.5.

2.3 Publishing trends in the HASS disciplines

Publishing in the humanities, arts, and social sciences disciplines has evolved over the years, with a shift from traditional publishing (involving books/monographs or printed journals) to electronic publishing. Some examples of the HASS disciplines include history, archeology, art studies, communication studies, economics, business, education, linguistics, literature, political science and sociology (Engels, Starčič, Kulczycki, Pölönen, & Sivertsen, 2018). In this study, disciplines refer to particular areas of study where research is being produced and disseminated, with particular focus on the HASS. Discipline norms and practices are important in determining OA publishing of researchers, as studies have found that OA publishing varies by disciplines (e.g., Lariviere & Sugimoto, 2018). This makes it important to study OA publishing practices of researchers in the HASS disciplines. This section examines the publishing trends in the HASS disciplines. It includes two sections, focusing on publishing trends in the humanities and arts disciplines, and also in the social sciences disciplines.

2.3.1 Publishing trends in humanities and arts disciplines

The humanities and arts (thereafter, humanities) disciplines are characterised with publishing of monographs for academic and research endeavors (Look & Pinter, 2010). This is often seen as vital in the process of evaluating young scholars for hiring and promotion in tenure-track faculty positions (Eve, 2015; Williams, Stevenson, Nicholas, Watkinson, & Rowlands, 2009). With the advances in technology, there has been a growing advocacy and huge shift to electronic publishing, which has made some researchers express fear about the obsolescence and death of book publishing (Song, Ma, & Yang, 2015; Stevens, 2013). The decline in monographs is further exacerbated by the growing cost of monographs which many researchers and students cannot afford (Look & Pinter, 2010). Hence, there has been a growing acceptance of digital publishing in these disciplines (Corlett-Rivera & Hackman, 2014; Engels et al., 2018). Printed books are also declining because many libraries are grappling with study and storage spaces,

leading to deselection of print books, replacing them with e-books (Oliva, 2016). Although, printed books remain relevant in teaching and research, as they serve as complementary form of readership (Zweiffel, 2021). Hence, printed books have not been entirely replaced by digital books, particularly in the humanities disciplines.

Unlike the social sciences and the STEM disciplines–where publishing in journals and conference proceedings may be enough to secure tenure–researchers in the humanities cannot publish articles alone but rely heavily on monographs publishing as it is more valued in meeting tenure and promotion guidelines (Coble, Potvin, & Shirazi, 2014; Harley et al., 2010; Williams et al., 2009). As pointed out by Thorin (2006), "monographs are critical for obtaining tenure and promotion in many areas of the humanities and that books were increasing in price at a slower rate than were journals" (p. 228). This posed a major challenge for publishing in the humanities disciplines such as philosophy and law.

Aside the high cost of publishing with limited funding availability, the humanities disciplines have also been confronted with challenges such as the question of their relevance (or irrelevance) in the society, when compared to the STEM disciplines (Beals, 2013; Brienza, 2012; Engels et al., 2018; Linton, 2018). In fact, Adams, Keane, and Dutton (2005) posit that the social sciences and humanities are not scientific disciplines as they could not, in principle, formulate causal propositions. Arguments like this has often resulted in negative perceptions of the values of researchers in the humanities disciplines. Linton (2018) submits that "politicians and others do not see these areas as contributors to a healthy and prosperous society" (p. 7). Hence, the humanities disciplines have received less attention and support from central policymakers and funding bodies because they are perceived as being less tangible, with reduced measurable outputs (Benneworth & Jongbloed, 2010). In return, funding allocation for research in these disciplines seem to be getting low and non-prioritized (Eve, 2015; Kennison & Norberg, 2014).

Although the STEM fields contributed to the 'serial crisis' (McGuigan, 2004) whereby the cost of subscription to serials increased by approximately 300% above inflation since 1986, the humanities disciplines have also suffered from its effect (Eve, 2015). Thorin (2006) submits that because of the need to fund expensive journals in the sciences, fewer monographs were being purchased by libraries for humanities academics. Albeit, humanities scholars depend more on monographs than do the social sciences such as business and psychology which focus more on journals (Thorin, 2006).

Just like the STEM fields, there has been a growing advocacy and adoption of OA in the humanities disciplines for promoting and modeling transparency, interoperability, and free public access to scholarly outputs (Coble et al., 2014). In fact, the humanities disciplines have come under pressure to experiment with OA business models for books (Adema, 2010; Jensen, 2009). Hence, the growth of OA in the humanities disciplines, in the form open monographs and open e-books. One of the major strides for OA development in the humanities is Open Library of Humanities (OLH) (Eve, 2015). The OLH, modelled on the successful Public Library of Science (PLoS), uses library partnership subsidies in which libraries fund a publishing infrastructure rather than purchasing journals (Gross & Ryan, 2015). One of the ways OA initiatives in the HASS disciplines have been supported is through increasing support from librarians who provides education through outreach to faculties about funding opportunities and copyright concerns (Elder, 2017).

It is also noteworthy that library publishing programs have helped to strengthen OA publishing in the humanities disciplines. According to Holzman (2016), library publishing programs tend to be small and locally produced journals with the library providing an OA platform. Early library publishing operated more like preprints publishing, but in many cases library publishing programs have evolved to full-service publishing involving both intra- and interuniversity items, with infrastructures for manuscripts reviewing, editing, and publishing such as the one provided by Open Journal System hosted in several universities libraries across Canada, and other countries.

However, OA publishing of monographs is more challenging when compared to OA journals. Apart from the age-long tradition of book publishing, OA publishing in the humanities is often faced with economic limitations and uneven distribution of resources (Eve, 2015). For instance, a book for publishing may be up to at least 80,000 words (Eve, 2015), with an average of $10,000 per book (Holzman, 2016). This poses a challenge for OA monographs publishing as well because of the cost of editing and production (Crossick, 2016) differs significantly from what is obtainable in OA journals. Although the humanities are gradually moving fully into digital publishing (e.g., digital humanities), the prevalence of author-pay mode of OA has further limited OA publishing uptake by humanities researchers. The patronage model such as '*gold*' and '*hybrid*' OA has been used in humanities that are poorly funded, making individual

researchers bear the cost of making their research openly available (Morgan, Campbell, & Teleen, 2012).

To summarize, publishing trends in the humanities disciplines revolve around transitioning to digital publishing, challenges with OA monographs publishing, limited funding, and unsupportive OA models. Currently, the shift towards OA is slower in the humanities than in other disciplines (Severin et al., 2020). The next section discusses the literature on publishing trends and development in the social sciences disciplines.

2.3.2 Publishing trends in social sciences disciplines

The social scientists publish to communicate new results after peer review to support knowledge creation and scientific progress, and to ensure direct interaction with professionals, policymakers, and the public (Sivertsen, 2022). As Freese, Rauf, and Voelkel (2022) argued, "social science researchers also seek to impact society by informing public policy and influencing public opinion" (p. 1). This emphasizes the significance of publishing in the social sciences. Just like the humanities disciplines, the social sciences publications culture is characterized with book publishing (Crossick, 2016), as well as journals articles to supplement book publishing (Sivertsen, 2016, 2022; Verleysen & Ossenblok, 2017). Sivertsen (2019) found that when it comes to publishing in books and journals, most active researchers in the social sciences combine the alternatives in practice, and not replace one with the other.

Traditionally, the social sciences have been regarded as disciplines focusing less on discoveries and knowledge development, when compared to the STEM fields (Bonaccorsi, 2018). However, the evolution of fields that work more with digital data and techniques (e.g., communication studies, economics, business, education, political science, and sociology) have introduced across the board scholarship and collaboration, which is also evident in the STEM journal landscape (Engels, Starčič, Kulczycki, Pölönen, & Sivertsen, 2018). According to Engels et al. (2018), although "epistemic cultures may encourage book publishing, the gradual transformations of… some disciplines into digitally driven and interdisciplinary scholarship may result in book publishing becoming less evident" (p. 594). Technological transformation from print to digital has been found to contribute to the decline in book publishing (Elliott, 2015).

As social sciences research is known for generating public value as they interact directly with the society (Brewer, 2013), OA then became one of the tools for ensuring public value of social sciences research, opening the outputs and processes of research (Laakso, 2022). Public value is generated when research directly or indirectly contributes to the society. Hence, OA publishing has been advocated for as viable alternatives to the costly traditional publishing models (Gatti, 2020), limiting access to the privileged few. OA publishing in the social sciences was encouraged through the rise of OA portals such as SSRN, e-Social Sciences used to provide access to e-resources of different social science subjects (Rath, 2015). More importantly, the growing support of funders for OA communication of research funded by them has made social sciences researchers to actively think of the ways to make their research OA (Lariviere & Sugimoto, 2018). This growing support for OA publishing has not been without challenges, particularly in terms of publication fees (Rodrigues, Savino, & Goldenberg, 2022). As discussed by Laakso (2022), publishing fees for OA books need sustainable and continuous funding mechanisms to become viable paths for scholars looking for alternatives to publishing their research.

The uptake and practice of OA varies in the social sciences, as studies have shown that there are disciplinary differences in the use of OA journals and IRs. Miguel, Chinchilla-Rodriguez, and de Moya-Anegón (2011) found that institutional repositories uptake surpassed the percentage of OA journals with a difference close to 30%. A recent study (Laakso & Björk, 2022) investigated differences in business disciplines, and found that the low adoption rate of OA journals is due to the evaluation practices emphasizing publishing in high-impact journals. In another study, Eger, Scheufen, and Meierrieks (2015) found that 36% of respondents from business and economics had higher rate of self-archiving in IRs than publishing in OA journals. This suggests preference for preprints deposit in IRs in the social sciences disciplines. Other studies have also reported varying OA publishing practices by disciplines, with a shift towards OA publishing and compliance occurring unevenly (Larivière & Sugimoto, 2018; Niles, Schimanski, McKiernan, & Alperin, 2020; Severin, Egger, Paul, & Hürlimann, 2020).

Lariviere and Sugimoto (2018) found variations in compliance to OA requirements of funded research in the United States and Canada. They reported that researchers cite norms and needs within disciplines as a reason not to comply with OA mandates. They also reported low compliance particularly in social sciences, chemistry, and engineering, with access varying

according to funders within non-compliant disciplines. The authors further submit that funders have more influence in improving OA publishing than discipline norms, supporting an earlier study (Harnad & Brody, 2004).

In summary, the epistemic culture of most social sciences disciplines makes it unlikely that book publishing would go away (Engels et al., 2018). Books are an integral part of the scientific communication, as they serve as natural space for accumulating knowledge, giving rise to new advancement in knowledge (Bonaccorsi, 2018). Despite the growing acceptance of e-books and digital journal publishing in the digital era, there is a tendency for social sciences scholars to continue publishing print books and monographs (Zweiffel, 2021). In terms of OA publishing, the social sciences disciplines, like the humanities disciplines, continue to experience growing expectations for OA, but are often confronted with limitations such as limited funding, and evaluations practices which favour publishing in paywalled outlets. Detailed discussion of the barriers limiting OA publishing in the HASS disciplines is provided in section 2.5.

2.4 Open access publishing practices of ECRs and MCRs

Researchers at different points in their academic careers have embraced OA publishing differently, although it is increasingly gaining popularity and acceptance. Early career researchers (ECRs) rely heavily on timely publication of their work to gain recognition for their research efforts (Sarabipour et al., 2019; Shehata et al., 2015), in pursuit of tenure which is usually granted by their universities (Orlandi et al., 2019). Tenure (when job security is granted) and promotion (when researchers move up the ladder in their ranking) play a major role in the scholarly communication system. This is because requirements for tenure and promotion determine where researchers publish their research outputs. For instance, Sugimoto et al. (2016) submit that it is "hardly surprising that Assistant Professors who are working on obtaining tenure favour journal articles" (p. 1031), and these journals are usually non-OA subscription-based, with high impact (O'Brien et al., 2019). Hence, researchers who are early in the career are often concerned about the prestige and recognition of the publication outlets they publish in. In contrast, tenured faculty are less likely to value journal prestige and metrics for publishing (Niles et al., 2020). This implies that OA publishing of ECRs might be negatively impacted by journal prestige and metrics, as most OA journals are often newer with lower impact factors and prestige, particularly those not funded through APCs (Björk & Solomon, 2012)

Nicholas et al., (2020b) conducted a global survey of scholarly attitudes and behaviours of ECRs with many responses from China, Russia, and Poland from the social sciences and sciences disciplines. Their study found that journal rank for career progression determined where ECRs published, followed by impact metrics and open science practices. This showed that OA is not the main consideration for ECRs when deciding where to publish. In another study of attitudes of North American academics toward OA journals, Dalton et al. (2020) designate participants with positive attitude toward OA as pro-OA, while those with negative attitude as non-OA. Their study found that many participants from humanities and social sciences fall heavily into the non-OA classification. Reporting about the barriers to OA, their participants agreed that "the shift to an all-open access publishing world would be costly for authors who cannot afford to pay APCs" (p. 86), making them unsure of their future OA publishing intentions (Dalton et al., 2020).

Xu et al. (2018) found a shift in perception, as Chinese ECRs are positive about OA publishing, when compared to their perceptions in 2016. This resonates with an earlier study which found that 64% of US and 57% of UK respondents indicated that they would be happy to see OA system replacing the subscription-based publication model (Wolff, Rod, & Schonfeld, 2016). Similarly, Ruiz-Pérez and Delgado-López-Cózar (2017) investigated Spanish researchers' opinions, attitudes, and practices towards OA publishing. Of the 554 respondents who took their survey, most of their respondents (75.8%) believed that OA was beneficial for their research field. This was confirmed in another study (Jamali et al., 2020) which found that Spanish ECRs are more positive about publishing OA, while Chinese ECRs are less likely to publish OA. They reported that ECRs from Russia are the most likely to publish OA, but the reason for this was not made noticeably clear. This suggests a growing positive attitude in support of OA publishing in different countries.

However, positive attitude does not always translate to an actual practice. For instance, Nicholas et al., (2020b) reported that although ECRs have positive attitude towards OA, they lag in practice because of requirements for grants, promotion, and tenure. This corroborates their earlier study which found that ECRs are constrained by convention and the precarious employment environment, necessitating them to publish in high impact factor journals (Nicholas, Rodríguez-Bravo, et al., 2017). Similarly, Rodriguez (2014) investigated faculty's awareness and attitudes about OA publishing. The study collected data from three categories for faculty

members: tenured, pre-tenure and adjunct/visiting. Rodriguez' findings showed that the highest concern for both tenured and pre-tenured faculty was the credibility of OA journals. She further found that tenured researchers at younger age brackets reported higher percentages of OA publishing history than older age brackets. This supports an earlier study (Larivière et al, 2015) which found that with tenure requirements, "young researchers need to publish in prestigious journals, while older researchers need to do the same to keep their grants" (p. 13). Hence, publishing in high-impact journals is what counts for most researchers, particularly the ECRs, limiting their effort to publish in OA outlets.

While researchers have received OA differently, there is currently a growing uptake and push for OA publishing. A recent study by Nicholas et al. (2023) report that 54% of ECRs who participated in their study of impact of the pandemic on scholarly communication believed that the take-up of open science/open access might be accelerated as a result of the pandemic. This explains the growing push for OA publishing among academics, particularly the ECRs. However, most ECRs are still largely limited on their practices because of barriers such as cost of APCs, quality of research outputs, tenure requirements, impact factors and reputation, among others.

With the growth and proliferation of social networking sites (SNS), academics have also used several SNS for indirect distribution of their research outputs. Some of the commonly used academic social networks are ResearchGate and Academia.edu (Jordan, 2019) and Twitter to post ongoing research updates (Zhu, 2014). There is a growing expectation by research funders and end users for researchers to commit to the creation of research outputs that are accessible beyond academia, known as knowledge mobilization (Cooper, Rodway, & Read, 2018). Hence, researchers, including ECRs have deployed alternative means of disseminating their research findings. Merga and Mason (2020) found that many ECRs create research outputs for non-academic end-users such as those in the industry, government, professional groups, and the public to enhance the impact of their research. Hence, academics are incorporating the practice of disseminating their research outputs in non-traditional outlets, including academic social networking sites, personal blogs, and social media.

In summary, most studies have focused on OA publishing practices of ECRs. There is paucity of research on the current OA publishing practices of MCRs, although they are not faced with the same challenges limiting the ECRs. This is apart from an earlier study (Rowlands &

Nicholas, 2006) which found that OA publishing by senior researchers has grown from 11% (January 2004) to 29% (July 2005) and represents a major shift in their perceptions and behaviour regarding OA publishing. However, their study was conducted 18 years ago, and no recent study has captured the OA publishing of MCRs, leaving a gap in understanding their current OA publishing practices. Several studies that investigated publishing practices of researchers reported that tenure requirements influenced ECRs' preference for journals with high impact factors and prestige. Although research has shown that OA publishing is positively perceived by researchers, their practices have been hugely limited by several factors, particularly the institutional requirements for tenure and evaluation. The next section moves on to review the barriers to OA publishing and how these barriers have limited researchers' OA publishing practices.

2.5 Barriers to open access publishing by researchers

Although OA has been advocated for and largely accepted as important part of the scholarly communication process, its uptake and adoption by researchers has been limited by several factors. One of the frequently discussed limitations to OA publishing in the literature is article processing charges (APCs). Gold and hybrid models of OA publishing often require APCs, an amount paid to cover the cost of production of an article before articles are published OA and made available to everyone to read (Pinfield & Middleton, 2016; Spezi et al., 2017). As such, there is a growing competition from publishers for author fees, giving the rise to fraudulent publishers who are posing serious threats to the future of science communication (Beall, 2012). Although, with the APCs payment, authors take ownership of copyrights or otherwise called copyright retention (Nariani & Fernandez, 2012; Park & Qin, 2007), it also promotes inequity in OA publishing. APCs transform inequity of access into inequity of contribution. That is, instead of pay walling readers, they are pay walling authors such that only those with grants/rich institutions can publish in these venues (Alperin 2022; Parker, 2013). Hence, the payment of APCs has remained inaccessible to many researchers who do not have sufficient funding or those from economically disadvantaged countries from the Global South (Kwon, 2022).

Merga and Mason (2020) found that ECRs reported challenges in securing funding to enable them pay for APCs, and hence suggested that institutions and publishers need to consider subsidizing or full funding ECRs. This was supported by recent studies which found that APCs is

a barrier for researchers in low- and middle-income countries (Rodrigues, Savino, & Goldenberg, 2022), thereby weakening open science (Alperin, 2022). Parker (2013) argues that "gold model would further entrench divisions between richer and poor institutions and would further institutionalise knowledge production by widening the divide between independent researchers and those affiliated with academic institutions" (p. 3). Hence, O'Brien, Graf, and McKellar (2019) note that high APC is a barrier to OA publishing and they implored publishers and editors to help ECRs in their OA publishing efforts.

Kwon (2022) reports that an average cost of APCs equal to USD 2,600 but it can cost more than an estimated USD 10,000. In the same vein, Larivière and Sugimoto (2018) report that the "cost of publishing in open-access journals ranges from less than US$100 to more than $5,000 per article, with dominant publishers such as Elsevier averaging $2,612 per paper in article-processing charges and Springer Nature" (para. 12). This makes OA publishing inaccessible and unaffordable to many researchers, including many HASS researchers in developed countries. As Dalton et al. (2020) argue, to "suggest that paying APCs is reasonable is to assume that shifting the cost of publishing onto authors makes sense. For such a shift to be reasonable, it must lie within the perceived realm of possibility" (p. 90). This explains why the permission of APCs for OA publishing is not a sustainable approach to achieving the ideals of OA.

Currently, several funding agencies in North America and Europe are permitting the inclusion APCs in grant applications, but this has been opposed by many researchers for not helping to achieve the ideals of OA, particularly for researchers in the Global South and low- and middle-income countries (Alperin, 2022; Kwon, 2022; Rodrigues et al., 2022). For instance, Rodrigues et al. (2022) argue that "APCs represent a major paradox in the dissemination of science, since the authors, their institutions, or funders must pay to make their research freely available" (p. 2). Interestingly, a study found that most OA journals (71%) do not require authors to pay APCs. However, most OA articles are published in the minority journals (58%) which charge APCs (Crawford, 2019). Hence, APCs continue to serve as a barrier to OA publishing.

Another impediment to OA apart from APCs, is the tenure and promotion requirements in higher education institutions which favour traditional publication outlets. Studies have found that scholars and faculty in general are afraid that their careers will be negatively affected by

publishing articles in OA journals (Hurrell & Meijer-Kline, 2011; Nowick, 2008). For instance, Nowick (2008) found that 61% of the faculty members they surveyed feared that OA publications would negatively impact their tenure and promotion reviews. Hence, there has been a drawback from some faculty on making their research OA (Cullen & Chawner, 2010, 2011; Dlamini & Snyman, 2017). Resarchers often feel pressured to publish in high-impact journals (O'Brien et al., 2019), most of which are traditional journals. As such, the low adoption of OA publishing in most HASS dsicplines has been linked to evaluation metrics which recognize top-tier journals (Laakso & Bjork, 2022).

In many higher education institutions, there is lack of clarity on the impacts of OA on tenure, and this has further complicated OA publishing by untenured faculty. For instance, Wical and Kocken (2017) assessed tenure evaluation plans of 31 departments at the University of Wisconsin–Eau Claire. They found that vague and occasionally contradictory language in the evaluation plans could create confusion regarding requirements for OA publishing in the review process. Out of the 32 departments investigated, departments from the STEM fields were clearer about expectations for researchers to disseminate findings in a variety of ways, including in OA outlets. Brienza (2012) submitted that "promotion is tied to publications in prestigious outlets known for years to publish the most widely regarded, highly cited scholarship, and the vast majority of these have paywalls or suggested retail prices" (p. 166). This makes it difficult for junior researchers like the ECRs to aim at publishing in OA journals, because they may risk their careers if they boycott the subscription-based outlets where they are expected to publish (Jamali et al., 2020; Rodríguez-Bravo & Nicholas, 2020). This then raises some questions on how to justify the adoption of OA publishing when, in practice, promotion and reputation of ECRs is determined by whether they publish in traditional, high-impact journals that are not usually OA.

For most tenure and promotion evaluation requirements, the prestige and impact of journals where researchers are publishing is important, which is why ECRs are often targeting those venues (Nicholas et al., 2020a). However, it has been documented in research that there is a lack of correlation between the impact of an individual research paper and the impact factor of the journal in which it was published (Casadevall & Fang, 2014; Rostami-Hodjegan & Tucker, 2001; Tort, Targino, & Amaral, 2012). This implies that the impact of research is not necessarily hinged on the impact rankings of journals. Given that journal impact factors could be influenced

in several ways, including publication delays (Tort et al., 2012), measuring researchers' productivity by impact metrics may not be the right approach.

Marcella, Lockerbie, Bloice, Hood, and Barton (2018) decry the use of impact factors as a measure of research quality, as many researchers have not received institutional support to improve their research impact agenda. As one of their interview participants stressed, "I think it's very similar to a lot of government policies based around metrics and scoring, where the metric becomes more important than the actual thing." (p. 615). Impact factors should not be a reliable measure of individual research impact, but this is the case in most social sciences and humanities disciplines. Hence, some studies have suggested that including institutional policies for OA can help normalize OA publishing within the academia (Zerkee, Moore, Shuttleworth, Dowson, & Bird, 2021), with libraries communicating these policies or message in a clear and concise manner, without jargons (Diane, 2018).

In addition, low level of awareness of OA among researchers has also contributed to the low uptake in OA in the HASS disciplines. Although there is a growing trend in knowledge and awareness of OA among HASS researchers, OA publishing activity is still relatively limited (Rodriguez, 2014). Narayan et al. (2018) found that many respondents from the HASS disciplines are not aware of green OA with embargo (42.9%), and gold OA journal with no paywall (40.8%). A previous study also found that most journals offering gold OA in the humanities did not charge APCs, and often also offered green OA options (Ojennus, 2017). However, many researchers are often not aware of these journals, nor the database (Directory of Open Access Journals (DOAJ)) where these journals are listed. This reiterates the need for increased awareness and education of researchers in the HASS disciplines on the quality, resources, process of publishing and research impact of OA.

There is a growing advocacy for the use of IRs for meeting OA requirements of funded research. However, research has shown that faculty and researchers are resisting from self-archiving in their IRs (Cullen & Chawner, 2010; Cullen & Chawner, 2011; Dlamini & Snyman, 2017; Francke et al., 2017; Garcia-Penalvo, 2017). Among other factors, this resistance and lack of willingness from many faculty to deposit contents in IRs has been linked to concerns about copyright and plagiarism (Cullen & Chawner, 2011), age differences among faculty (Kim & Kim, 2008), as well as time and effort involved in depositing their research (Foster & Gibbons, 2005; Kim, 2007).

There is also the issue of sustainability of OA journals and publications, particularly when flipping an existing journal to OA model (Ming & Zhao, 2022). This is a notable barrier to OA as most OA journals rely on volunteer services from academics (Alperin, 2022), making them vulnerable, in case the person in charge stops working with the journal (Bjork, 2004). Hence, Kingsley (2008) recommends that it is essential to incorporate consideration of disciplinary differences in any design and implementation of OA dissemination outlets. This will ensure that they are widely embraced by the scholarly community.

In summary, there are several challenges associated with OA publishing and fewer studies have examined the perspectives of HASS researchers on these challenges (Padmalochanan, 2019). Most existing studies have focused on the barriers caused by the cost of APCs, tenure and promotion requirements, quality perceptions, sustainability, and funding, as well as general acceptance of OA outlets for publishing. These challenges also varied by disciplines, career stages, and countries. The current study will focus more on understanding the barriers affecting the experiences, perceptions, and engagements of HASS researchers in Canada regarding OA publishing. The next section focuses on the theoretical background of the factors influencing OA publishing among researchers.

2.6 Theoretical background

This section discusses theories that have been used in open access (OA) and scholarly communication and related literature. Two theories to be discussed in this section are Social Exchange Theory and Social Capital Theory. The factors that researchers have measured while using these theories and how they influence OA publishing practices will be discussed as well.

2.6.1 Social Exchange Theory

Social Exchange Theory (SET) was originally coined by George Homans in 1958 in his work titled *Social Behaviour as Exchange* (Emerson, 1976). SET emerged from sociology and social psychology, where researchers examined social exchanges that take place between individuals in societies (Chen & Choi, 2005). Social exchange are actions that are contingent on rewarding actions, and better viewed as two sides of a transaction involving the exchange of utility or reward from each other (Homans, 1961). SET has been applied to explain how parties in exchange relationships weigh the benefits of the exchange to determine their commitment (Lambe, Wittmann, & Spekman, 2001). It has also been applied in studies measuring online

community participation behaviour (Jahan & Kim, 2020) and researchers' publishing in institutional repositories (Stanton & Liew, 2011).

There are four key elements in social exchange theory. There are (1) actors; (2) resources; (3) structure of exchange; and (4) process of exchange. Actors can be individuals or groups who are engaged in social exchanges (Emerson, 1976). In the scholarly communication landscape, actors will include researchers who produce scholarly outputs through writing and publishing, publishers who publish their scholarly outputs, and users who use the scholarly research. Resources represent the currency of exchanges which could be tangible and intangible (Kim, 2008). Hall and Widén-Wulff (2008) assert that 'resources' is not always monetary, but value driven, and this has been applied to explain information sharing in online environments. Resources received because of the exchange are defined as outcomes which can be positive outcomes, as in benefits, or negative outcomes, as in costs (Kim, 2008). Resources represent the currency of exchanges which could be tangible and intangible (Kim, 2008). The tangible resources may include the funding needed to publish in OA journals, while the outcome refers to the cost and benefits of disseminating research outputs through the OA outlets.

Existing literature on OA scholarly publishing have considered benefit factors which represent the advantages that accrue from publishing OA (Jahan & Kim, 2020; Lwoga & Questier, 2014; Rodríguez-Bravo, et al., 2007). Benefits factors could be regarded as what motivate or increase researchers' OA scholarly communication practices. For instance, Jahan and Kim (2020) posit that people search for maximizing their benefits and minimizing their costs when exchanging resources with others. In scholarly communication, benefit factors could include citation increase, prestige, or reputation, as well as promotion or tenure (Kim, 2008; Lwoga & Questier, 2014). Rodríguez-Bravo, et al. (2007) found that ECRs tend to publish in high-impact journals for career recognition and rewards.

Research has shown that researchers publish OA to maximize benefits such as perceived visible advantage (Park, 2007), prestige (Kankanhalli, Tan, & Wei, 2005), and altruism (Kim, 2008, 2011; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Park (2007) defines perceived visible advantage as "the extent to which a scientist believes that publishing in an open access journal would enhance the visibility of a publication" (p. 198). This suggests that the extent to which researchers believe OA will increase the visibility of their resarch may influence their OA publishing. Prestige refers to the reputation that researchers get by publishing in OA outlets,

which can be in the form of increased citation and impact of their scholarly work (Kankanhalli et al., 2005). Alrusim, according to Kim (2008, 2011) is intrinsic benefit and the satisfaction that researchers get from sharing their knowledge with others. Studies have shown that altruistic researchers are more likely to publish OA or self-archive in IRs (Ammarukleart, 2017; Lwoga & Questier, 2014; Raju, 2017). Heaton, Burns, and Thoms (2019) found that exactly half (50%) of their study's respondents chose altruism, general sense of social responsibility as a motivation to publish OA.

2.6.2 Social Capital Theory

Social Capital Theory (SCT) states that social capital provides the conditions necessary for knowledge exchange to occur, with the significance of relationships as a resource for social action (Nahapiet & Ghoshal, 1998). According to Nahapiet and Ghoshal (1998), social capital are resources embedded within networks of human relationship. These networks may include proximate and virtual communities. The dissemination of research output is a form of knowledge exchange, more skewed towards reciprocal exchange as authors disseminate their research findings to influence policy and decision making (Wilson, Petticrew, Calnan, & Nazareth, 2010). Three key aspects of social capital that have been explored in the context of knowledge exchange are *trust*, *norms*, and *identification* (Kankanhalli et al., 2005). Kankanhalli et al. (2005) found that generalized trust, pro-sharing norms, and identification are crucial conditions that motivated or challenged knowledge contribution in electronic knowledge repositories. These are often studied as contextual factors in knowledge sharing and scholarly communication literature (e.g., Jarvenpaa & Staples, 2000; Kankanhalli et al., 2005; Kim, 2008; Lwoga & Questier, 2014). They represent the context that influence individual attitudes, and decision making, and can be regarded as structures and relationships that support the exchange of knowledge among actors (Kim, 2008).

Jarvenpaa and Staples (2000) found that information culture of organizations and task interdependence of individuals influence the use of electronic media for information sharing activities. Kim (2008) built on Kankanhalli and colleagues' (2005) study, and found that trust, self-archiving culture, peer pressure, influence of grant funders influenced researchers' decision to self-archive. As seen in existing studies, one factor that has been continuously examined in studies using SCT is trust. Trust has been widely studied particularly in reseaerch related to

business, commerce, and organization behaviour. It has been regarded as an essential tool in knowledge sharing in organizations (Jain, Manjit Singh, & Goh, 2015; Levin & Cross, 2004).

Three types of trust are usually studied in the literature. These are competence-based trust, benevolence-based trust, and institution-based trust (Levin & Cross, 2004; Ozlati, 2015; Tianjiao, Cheng, & Lihua, 2006). Competence-based trust is a form of trusting beliefs, and it means one believes the other person has the ability or power to do for one what one needs done (McKnight & Chervany, 2001). This type of trust is most suited for measuring trust among employees in organizations. The second category of trust, benevolence-based trust, has been defined by Ozlati (2015) as "trusting that others will not misuse the shared knowledge, or get credit for it, and that others will reciprocate and provide necessary help when needed" (p. 202). The third category, institution-based trust, has its origin from sociology. It is the belief that the needed conditions are in place to enable a successful outcome in an endeavor or an activity (Jones & Leonard, 2008; McKnight & Chervany, 2001).

Institution-based trust is imperative for OA publishing. This is because research has shown that one of the barriers to faculty contribution in IRs is that they do not trust their institution to preserve their work, protect it from plagiarism, or breach of intellectual property (Cullen & Chawner, 2011). OA policy and movement are institutional issues, with several higher education institutions and funding agencies adopting it and encouraging their researchers to adhere (Bosman et al., 2021). Researchers' compliance or adherence to OA policies will depend on their trust in the institutions involved, and the assurance that if their scholarly works are made openly available, they will be given proper credit and not plagiarized (Cullen & Chawner, 2011). Hence, institution-based trust is important in measuring researchers' OA publishing practices.

Institution-based trust has been categorized into two dimensions. These are: (1) *situational normality*, and *structural assurance* (Jones & Leonard, 2008; McKnight & Chervany, 2001). *Situational normality* is the belief that the environment is in proper order and success will occur as a result (Jones & Leonard, 2008). In the scholarly communication landscape, *situational normality* suggests the perceptions of standards and regulations being put in place to ensure publishing OA is safe and of high standard. *Structural assurance* has been defined by McKnight, Cummings, and Chervany (1998) as the "belief that success is likely because such contextual conditions as promises, contracts, regulations, and guarantees are in place" (p. 478). Song et al. (2018) found that *structural assurance* positively affected community commitments to programs

and events. Since publishing OA is a commitment that academics and researchers are encouraged to take on (Suber, 2007), *structural assurance* may help shed light on researchers' OA publishing practices.

SCT also touches on how perceptions, attitude, and norms affect knowledge exchanges (Kankanhalli et al., 2005; Kim, 2008). In scholarly communication, the perception of quality of OA outlets is important in examining researchers' engagement with OA publishing. Research has shown that perceived quality influenced researchers' intention to publish in OA scholarly journals (Moksness & Olsen, 2017), and the quality of journal peer-review is a key determinant of researchers' intention to publish (Schroter et al., 2005). Moksness and Olsen (2020) defined perceived quality as "a global concept pertaining to researchers' subjective evaluation of indicators that determine whether a journal is appropriate for submitting research articles to" (p. 340). Perception of quality is important as OA journals are often perceived as having low quality. For instance, Zhu (2017) reported that one of their study's respondents who is a senior faculty "do not believe that open access journals are of good quality in terms of peer reviewing and therefore do not rate them highly" (p. 564). These perceptions may differ according to researchers' experiences with OA publishing or publishing in general.

Furthermore, studies have shown that the uptake of OA differ significantly across disciplines (Pinfield & Middleton, 2016), as there are discipline-specific practices and requirements that enable OA practices (Severin et al., 2020; Zhu, 2017). Zhu (2017) found that publishing in OA journals seemed more established in the medical and life sciences, while green OA repositories are more common in natural sciences and engineering. The author also found that OA practices of academics in the humanities and social sciences were lower compared to their STEM counterparts. This was supported in Larivière and Sugimoto's (2018) study who found that compliance to OA policies in the social sciences, chemistry and engineering disciplines is low, as researchers cite norms and needs within disciplines as a reason not to comply with OA mandates.

Severin et al. (2020) focused on discipline-specific OA publishing practices and barriers to change. They reported that OA uptake in the humanities is lower than in most other fields. The authors found that humanities scholars perceived open repositories to be significant than the gold OA journals. This is consistent with Rodriguez's (2014) study who found that despite increasing awareness of OA in the HASS disciplines, actual OA publishing practices is still relatively

limited. On the contrary, some studies found no relationship between disciplinary culture and self-archiving practices (Covey, 2009; Lercher, 2008; Xia, 2008).

In summary, existing studies have employed SET and SCT to investigate researchers' scholarly communication practices and knowledge exchanges. For SET, research has shown that benefit factors such as visibility, prestige, and altruism influenced researchers' OA publishing practices (Ammarukleart, 2017; Kankakalli et al., 2005; Kim 2008; Lwoga & Questier, 2014; Park, 2007; Raju, 2017). For SCT, research has demonstrated that trust, perceived quality, and disciplinary norms influenced knowledge exchanges, and by extension, OA publishing of researchers (Cullen & Chawner, 2011; Moksness & Olsen, 2017, 2020; Zhu, 2017). However, studies focusing on how all these factors individually and collectively influence OA publishing practices of both ECRs and MCRs are sparse, particularly in the Canadian context.

2.7 Summary of literature review

The development and proliferation of OA publishing is well documented in the literature. The main reasons for the widespread advocacy and growing adoption of OA in the communication of research outputs has been linked to rising cost of journal subscriptions, leading to the serial crisis (Jurchen, 2020; McGuigan, 2004). Similarly, the internet boom in the early 2000s which led to growth of electronic journals through digital publishing, as well as funders and institutional advocacy for OA publishing of funded research is also noted in literature. Despite the growing adoption of OA across several disciplines, research has shown that in the HASS disciplines, OA is faced with several challenges, such as limited funding to pay for APCs, disciplinary customs, tenure, and promotion requirements, among others.

While most of the existing studies have focused on general scholarly communication practices of ECRs, little is known about their OA publishing practices, and how they compare with MCRs. This leaves a huge gap in research regarding OA uptake in Canada, and what needs to be done to improve the uptake in achieving equity of access to knowledge in Canada, and globally. The next chapter will discuss the methodology employed in carrying out this study, including theoretical framework, specific details on the methods, and analysis approaches for both quantitative and qualitative phase of the study.

Chapter 3: Methodology

3.0 Chapter overview

This chapter first discusses the research paradigm of the researchers, which informed the methodology and methods employed in this study. It then discusses the theoretical framework guiding the design of the quantitative phase of this study, followed by research questions and hypotheses. It also comprise ethical consideration and approvals, the description of study participants, data collection, and analysis approaches for both the questionnaire and interview phases. It concludes with the description of the approach for integrating the questionnaire and interview findings.

3.1 Research paradigm and methodology

This study is rooted in an objectivist epistemological stance, which holds that "meaning, and therefore meaningful reality, exists as such apart from the operation of any consciousness" (Crotty, 1998, p. 8). According to Hiller (2016), objectivism assumes a realist ontology, which holds that "a reality exists out there, whether we are conscious of it or not, and that discovering the truth about that reality is best achieved through an accumulation of carefully planned observations" (p. 102). This informs my theoretical perspective, which is a post-positivist paradigm, based on the premise that "any perception of reality cannot be an objective picture but is drawn from empirical observation and existing theory" (Pickard, 2013, p. 10).

A post-positivist researcher assumes that "research consists of rigorous methods and systematic forms of inquiry" (Creswell & Miller, 2000, p. 125), holding to a neutral and value-free axiology (Morrow, 2007) with research design and methods involving quantitative and qualitative approaches (Helms, Henze, Sass, & Mifsud, 2006). Hence, this research employs the mixed-methods approach. Pickard (2013) posits that mixed-methods research (MMR) takes a pragmatic approach in answering research questions and it falls within the post-positivist paradigm. Creswell and Tashakkori (2007) define MMR as "research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry" (p. 4). Mixed-methods research involves the use of two or more research methods in answering research

questions which this research does by employing the sequential explanatory design which consist of two distinct phases; quantitative followed by qualitative (Creswell, 2003).

The rationale for using a sequential explanatory mixed-methods is that one single research method will not be sufficient for understanding the research phenomenon of OA publishing practices of HASS researchers in Canada. Indeed, using both methods will ensure the qualitative method complements the quantitative method, and thus helps to ensure credibility of the findings (Ivankova, Creswell, & Stick, 2006). Sequential explanatory mixed-methods design suggests that data collection is in two phase, with quantitative data collection in the first phase using questionnaires and qualitative data collection in the second phase using interviews. In the first phase of the study, I employed a web-based questionnaire to gain broad perspectives of OA scholarly communication practices of researchers, while the interviews allowed for more in-depth explanation of the phenomena, serving as the main act. According to Ivankova et al. (2006);

> The qualitative (text) data are collected and analyzed second in the sequence and help explain or elaborate on the quantitative results obtained in the first phase. The second, qualitative phase builds on the first, quantitative phase, and the two phases are connected in the intermediate stage in the study (p. 5).

With the sequential explanatory design, quantitative data and analysis provided a general understanding of the research problem, while the qualitative data helped to explore participants' views in more depth (Creswell, 2003; Ivankova et al., 2006). The interviews explored the reasons for the differences in researchers' OA publishing practices, which could not be ascertained in the questionnaire. Hence, the questionnaire served as an introductory role to the interview, which is the main act. The questionnaire helped to define the interview's focus. I have consolidated all these in Figure 1 below, showing diagrammatic representation of the research paradigm, methodology, and design.

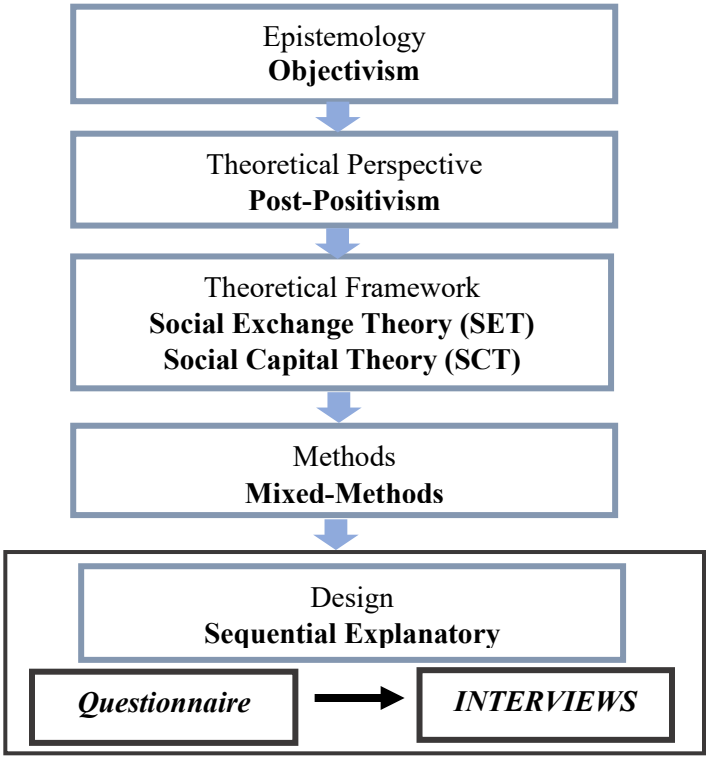

Figure 1. Model of research paradigm, methodology, and design

3.2 Theoretical framework

The theoretical framework for this study was developed using two theories that were previously discussed in section 2.6. These are Social Exchange Theory (SET) and Social Capital Theory (SCT). These theories were deemed appropriate for this study because they have been employed in existing studies that investigated knowledge sharing and exchange in organizations, and self-archiving behaviours and practices of researchers (e.g., Kankanhalli et al., 2005; Kim, 2008; Lwoga & Questier, 2014). Since self-archiving and knowledge exchange are closely related to OA publishing, this study employed these theories in guiding the selection of constructs and variables used in operationalising researchers' OA publishing practices. This section identifies the factors emanating from these theories as extensively discussed in the literature review, and then describes how these factors informed the hypotheses that were tested in this study.

SET emerged from sociology and social psychology, where researchers examined social exchanges that take place between individuals in societies (Chen & Choi, 2005). Social exchange implies actions that are contingent on rewarding actions, and better viewed as two sides of a

transaction involving the exchange of utility or reward from each other (Homans, 1961). These represent the benefit factors that motivate or increase researchers' OA scholarly communication practices. To operationalise the benefit factors, three factors emerged from the literature. These are *visibility* (Park, 2007), *prestige* (Guinot, Chiva, & Mallén, 2015; Kankanhalli et al., 2005), and *altruism* (Kankanhalli et al., 2005; Kim, 2008, 2011; Podsakoff et al., 1990). Hence, the following hypotheses are proposed.

H_1: *Visibility is positively related with open access publishing practices of researchers*

H_2*: Prestige is positively related with open access publishing practices* of *researchers*

H_3*: Researchers' altruism is positively related with their open access publishing practices*

The second theory, SCT emphasizes the conditions necessary for knowledge exchange to occur, with the significance of relationships as a resource for social action (Nahapiet & Ghoshal, 1998). These conditions are referred to as social capital (Nahapiet & Ghoshal, 1998) which are resources embedded within networks of human relationship. Three key aspects of social capital that have been explored in the context of knowledge exchange are *trust*, *norms*, and *identification* (Kankanhalli et al., 2005). These are often studied as contextual factors in knowledge sharing literature (e.g., Jarvenpaa & Staples, 2000; Kankanhalli et al., 2005; Kim, 2008; Lwoga & Questier, 2014). Contextual factors include culture, attitude, and influence of other actors. They represent the context by which individual attitudes and decision making can be influenced in the process of exchanging knowledge among actors (Kim, 2008). In the current study, contextual factors were measured with *trus*t, *perceived quality*, and *disciplinary norm*.

For trust, institution-based trust was found to be relevant in measuring researchers' OA publishing practices. It is the belief that the needed conditions are in place to enable a successful outcome in an endeavor or an activity (Jones & Leonard, 2008; McKnight & Chervany, 2001; Song et al., 2018). In this study, institution-based trust was measured using two factors adapted from previous studies (Jones & Leonard, 2008; McKnight & Chervany, 2001). These are *situational normality* and *structural assurance*. Situational normality is the belief that the environment is in proper order and success will occur as a result (Jones & Leonard, 2008). In the scholarly communication landscape, *situational normality* refers to the perceptions of standards and regulations being put in place to ensure publishing OA is safe and of high standard.

Structural assurance is the "belief that success is likely because such contextual conditions as promises, contracts, regulations, and guarantees are in place" (McKnight, Cummings, & Chervany, 1998, p. 478). *Situational normality* and *structural assurance* may help shed light on researchers' OA publishing practices. Thus, the following hypotheses are proposed.

H_4: *Situational normality is positively related with open access publishing practices of researchers.*

H_5: *Structural assurance is positively related with open access publishing practices of researchers.*

For *perceived quality,* two factors were adapted from existing studies which measured researchers' intention to publish in OA journals *(*Moksness & Olsen, 2020). These are *perceived impact*, and *perceived content quality*. Perceived quality has been previously found to influence researchers' intention to publish in OA scholarly journals (Moksness & Olsen, 2017). Hence, following hypotheses are proposed.

H_6: *Researchers' perceived impact is positively related with their open access publishing practices.*

H_7: *Researchers' perceived content quality is positively related with their open access publishing practices.*

Disciplinary norm was measured in this study by adapting *pro-sharing norm* employed in (Kankanhalli et al., 2005). Kankanhalli et al. (2005) defined *pro-sharing norm* as "prevalence of norms that are intended to facilitate knowledge sharing in the organization" (p.123). Disciplinary norm may have significant relationship with researchers' OA practices, as existing research have reported that OA publishing varies and are influenced by disciplines (Rodriguez, 2014; Severin et al., 2020). Hence, the following hypothesis is proposed.

***H_8*:** *Disciplinary norm is positively related with open access publishing practices of researchers.*

To examine whether all the factors, when combined, have significant relationship with researchers' OA publishing practices, the following hypothesis is proposed.

***H_9*:** *Benefit factors, institutional-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers.*

3.3 Research questions and hypotheses

As previously mentioned, four questions were posed in this study, as follows: RQ1: What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers' OA publishing practices based on career stage, professional status, and academic disciplines? RQ2: What factors influence researchers' open access publishing practices? RQ3: How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication? RQ4: What inhibits the open access scholarly communication practices of ECRs and MCRs in the HASS disciplines in Canada?

To address RQ2, nine hypotheses were posed, as follows:

H_1: Visibility is positively related with open access publishing practices of researchers.

H_2: Prestige is positively related with open access publishing practices of researchers.

H_3: Researchers' altruism is positively related with their open access publishing practices.

H_4: Situational normality is positively related with open access publishing practices of researchers.

H_5: Structural assurance is positively related with open access publishing practices of researchers.

H_6: Researchers' perceived impact is positively related with their open access publishing practices.

H_7: Researchers' perceived content quality is positively related with their open access publishing practices.

H_8: Disciplinary norm is positively related with open access publishing practices of researchers.

H_9: Benefit factors, institution-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers.

3.4 Ethical consideration and approval

Ethics approval was sought from the Research Ethics Board (REB) of McGill University on March 24, 2021, since my research involved human participants. Ethics application was approved on June 15, 2021, with REB #21-06-008. See Appendix A for ethics approval

certificate. Further, ethics amendment was sought for the interview guide because it was not included in the original ethics application due to the nature of the study's research design (i.e., sequential explanatory mixed-methods). Ethics amendment application was submitted on February 3, 2022, and it was approved on February 22, 2022. See Appendix B for ethics amendment approval certificate with REB #21-06-008(0222)

The questionnaire responses were anonymous; no identifiable information (e.g., institution name) or data (e.g., IP addresses) were captured in the survey. Any potentially identifiable information provided by the respondents (e.g., their institutions' names) were removed before analysis. Information about the study and consent was provided in the introduction section of the questionnaire, and participants were required to check the Yes/No response box before they could proceed with the questionnaire. If they checked that they do not consent, the questionnaire was terminated. Participants' names and identities were not required except for their demographics such as rank, career stages, disciplines, year PhD was awarded, and gender which helped in categorizing their responses for comparison. At the end of the questionnaire, participants were asked if they would like to be part of a follow-up interview. If they did, they were redirected to another safe web-based platform (MS form) where they entered their email addresses. Their email addresses were stored securely in a password protected Excel Spreadsheet, accessible only to the researcher and the supervisor. Their email addresses were not collected with their survey responses.

Twenty-nine survey respondents who indicated interest to take part in the interview were sent an information letter where the consent information, ethical consideration, and use of data was provided. Prospective participants were required to read and digitally sign a consent form, and they were sent a password-protected Zoom invite for the online interview. Participants were informed they could withdraw from the study at any time if they felt uncomfortable. Interview participants' names and identities were anonymized using pseudonyms. I sought the consent of the participants before recording the interview using an audio recorder and as such, there was no need for video recording. Raw data collected through the recorded interviews were stored securely on a password protected cloud storage on McGill University OneDrive folder, accessible only to the researcher and the supervisor.

3.5 Study participants

Participants included ECRs and MCRs from the HASS disciplines of the U15 (research-intensive universities) in Canada. The HASS disciplines were determined by consulting the recommended standard of Canadian Research and Development Classification (CRDC) field of research (Statistics Canada, 2020). The list of U15 universities is provided in Table 3.2. The U15 universities consist of 12 English speaking, two French speaking universities, and one officially bilingual university. This study focused on U15 universities because they pride themselves in producing over 80% of all innovative and competitive university research (Ducas, Michaud-Oystryk, & Speare, 2020), worth about 8.5 billion dollars annually. As such, it is important to know whether or not researchers in these universities publish their research in OA outlets, for users to freely access, or if publicly-funded research are increasingly behind paywalls. Aside the tri-agencies OA policy, the U15 universities are also committed to ensuring the widest possible access to research and scholarly outputs (U15 Canada, n. d). Just recently, the Fonds de recherche du Québec announced mandatory OA publishing of research funded by the agency, and also joined the Plan S OA mandate on June 1, 2021, being the first funding agency in Canada to join cOAlition S, a coalition of European funders pushing for OA publishing of funder research (Bosman et al., 2021). Thus, it is important to investigate how researchers in research intensive universities have embraced or are practicing OA publishing.

To cater for the two universities that are French speaking (University of Montreal and Laval University) and one bilingual university (University of Ottawa), the questionnaire was translated to French, and was reviewed for accuracy by a native French speaker. This was to ensure that academics at these universities were not excluded. ECRs included in this study comprised those who are within five years from the start date of their first research-related appointment (SSHRC, 2012) and mid-career researchers (MCRs) who are within five to 15 years post PhD (CIHR, 2007). These groups were chosen because having completed their PhDs and holding research/teaching positions, they are active in research and publishing. The total number of survey invitation sent out was 1,485, with 231 completed responses. For the interviews, 29 professors indicated they were interested and were invited, but 20 professors participated in the interviews. Details of the sampling approach used for selecting participants are provided in sections 3.4.1 and 3.4.2.

Table 3.1: List U15 Universities used for the study population

S/N	U15 Universities
1	Dalhousie University
2	McGill University
3	McMaster University
4	University of Alberta
5	University of British Columbia
6	University of Calgary
7	University of Laval
8	University of Manitoba
9	University of Montreal
10	University of Ottawa
11	University of Saskatchewan
12	University of Toronto
13	University of Waterloo
14	Queens University
15	Western University

3.6 Data collection and analysis

Since this study employs a mixed-methods research, data collection was in two phases. In the first phase, a web-based structured questionnaire was employed, followed by the second phase using semi-structured interview. At the end of the questionnaire, respondents were asked to indicate if they would like to participate in the interview. If they checked the box for yes, they were redirected to a web form where they entered their email address. If they did not want to participate in the interview, they submitted their survey responses and nothing else was required of them.

3.6.1 Phase 1: Questionnaire

The web-based questionnaire designed with LimeSurvey, included a set of items that addressed RQ1 and RQ2. To answer RQ1 (i.e., What *are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers OA publishing practices based on career stage, professional status, and academic disciplines)*, respondents were asked to indicate self-reported actions on scales adapted from Kim (2008) and Thompson et al. (1991), focusing on three dimensions. These are: (a) experience publishing OA; (b) frequency of OA publishing; and (c) the extent of OA publishing.

To answer RQ2 (i.e., *what factors influence their open access publishing practices?)*, respondents responded to the items on the following constructs: *visibility* (3 Items), *prestige* (4 items), *altruism* (6 items), *situational normality* (3 items), *structural assurance* (3 items), *perceived impact* (3 items), *perceived content quality* (3 items), and *disciplinary norm* (4 items). The questionnaire contained a total of 33 questions asked across seven sections of the questionnaire. The questionnaire took approximately 15 minutes to complete. In addition, demographic information (e.g., gender, age, career stage, professional status, disciplines etc.) of the respondents was collected in the questionnaire. This helped to ensure rich description of the respondents and how they compare. Detailed description of how each construct (i.e., variable) of the questionnaire was operationalised is provided in subsequent sections. See Appendix C for the questionnaire.

3.6.1.1 Operationalisation of dependent and independent variables

This section presents the operationalisation and measurement of the constructs in this study, including dependent variable (*OA publishing practices*) and the independent variables (*benefit factors, institutional-based trust, perceived quality,* and *disciplinary norm*). See Appendix D for constructs and items development, including the original items from previous studies and how adapted items are employed in the current study.

OA publishing practices (dependent variable)

The dependent variable for this study comprised self-reported OA scholarly publishing practices, which provided a better understanding of OA scholarly communication practices of researchers. Many studies have measured behavioural intention or intention to publish OA, as intention has been reported to be the most direct predictor of user behaviour (Davis, 1989; Jackson, Chow, & Leitch, 1997). However, behavioural intention was not measured in this study as research has shown that it does not always predict actual behaviour (Ajzen, 2020; Manski, 1990), and only about 25% on average do people act on their intentions (Sheeran, 2002). In the scholarly communication landscape, intentions may not always predict actual behaviour because of other factors. Hence, understanding the degree to which researchers engage in OA publishing practices might give a more accurate understanding of their current OA practices and the factors that enhance or hinder such practices.

Based on existing studies, OA publishing practice (dependent variable) was operationalised in this study using self-reported actions on three dimensions: (1*) OA experience* – whether researchers ever published OA, (2) *OA frequency* – how often researchers published OA in the last three years, and (3) OA e*xtent* – the percentage researchers' publications published in OA outlets in the last 3 years. These three factors, when combined as composite variable, represent the degree of researchers' OA publishing practices, which is related to existing studies (e.g., Kim, 2008; Thompson et al. 1991). Kim (2008) investigated self-archiving behaviour of faculty by measuring (1) whether or not faculty members ever self-archived their research/teaching materials; (2) frequency of self-archiving in the last 3 years; (3) length of time that they have been involved in self-archiving; (4) percentage of self-archived research materials in the past five years.

This is consistent with Thompson, Higgins, and Howell (1991) who examined direct relationships between several factors and the utilization of personal computing (PCs). Thompson et al. operationalised the utilization of PCs with three dimensions: (1) intensity of use, (2) frequency of use, and (3) diversity of software packages used. Although the dimensions measured different items with different responses, combining the dimensions into a composite variable helped to measure the dependent variable, which could not be determined by using only one of the dimensions. This study, therefore, takes this bearing from existing studies that have employed similar approach, by combining the three dimensions (i.e., *Experience, Frequency* and *Extent*) measuring OA publishing practice as a composite variable. The OA channels listed for the respondents include *open access journals, open access monograph/books, open access conference proceedings, and institutional repositories*.

The proposed adapted measure for *OA experience* is also indicated using a single-item measure. Item included: "*Have you have ever published OA in the following channels?"* The *OA experience* item was measured using a two-point scale (1 – No, 2 - Yes). For *OA frequency,* item included: "*In the past three years, how many times have you published in the following OA channels?"* The *OA frequency* item was measured using a five-point scale (1 – None, 5 - 6+times). For *OA extent,* item included: "*What percentage of your research outputs have you published in the following OA channels in the last three years?"* The *OA extent* item was measured using a five-point scale (1 – None, 5 – 76-100%).

Visibility (independent variable)

One of the benefits of OA is increasing visibility of research outcomes. To operationalise visibility in this study, the three items of *perceived visible advantage* as measured in Park's (2007) study was adapted in this study. Visibility was operationalised with three items which focused on making authors work more readily available, increasing readership, and making their work wide open to everybody. The measure for *visibility* is also indicated using a three-item measure. Items included: *"Publishing OA allows the products of research to become readily available"*; "*Open access publishing increases the readership of research outputs"*; and "*Publishing OA makes research work become wide open to everybody."* All *visibility* items were measured using a five-point scale (1 – Strongly Disagree, 5 – Strongly Agree).

Prestige (independent variable)

Prestige measured as an umbrella term for external benefits of OA publishing, was operationalised in this study based on the scale *image* as validated by Kankanhalli et al. (2005), who investigated factors responsible for knowledge contribution to electronic knowledge repositories (EKRs). Their scale on *image* measured the benefits of contributing knowledge to EKRs in a large public study. In this study, the scale was adapted by substituting EKRs with OA publishing, substituting knowledge with research, and substituting organization with discipline. The proposed adapted measure for *prestige* is also indicated using a four-item measure. Items included: *"Sharing research through open access publishing improves my prestige within my discipline"*; *"Researchers in my discipline who share their research through open access publishing have more prestige than those who do not"*; *"Sharing research through open access publishing improves others' recognition of me"*; and *"When I share my research through open access publishing, my colleagues respect me".* All *prestige* items were measured using a five-point scale (1 – Strongly Disagree, 5 – Strongly Agree).

Altruism (independent variable)

Altruism is the enduring tendency to think about the welfare and rights of other people, to feel concern and empathy for them, and to act in a way that benefits them (Emmerik, Jawahar, & Stone, 2005). The scale for measuring *altruism* in this study assessed self-reported altruistic tendencies of researchers by adapting the four items in Kankanhalli et al's (2005) study. In

addition, two items were adapted from studies designed to measure altruism in organizations (Guinot et al., 2015; Podsakoff et al., 1990). This is related to this study as OA has been referred to as greater good, and a form of social justice (Heller & Gaede, 2016). The proposed adapted measure for *altruism* is indicated using a six-item measure. Items included: *"I enjoy sharing my research with others through open access publishing"*; *"I enjoy helping other researchers by sharing research through open access publishing"*; *"It feels good to help other researchers by publishing OA"*; "*Sharing my research with others through open access publishing gives me pleasure"; "I willingly help other researchers who have limited access to research by publishing OA"*; and *"I am always ready to lend a helping hand to other researchers by publishing OA".* All *altruism* items were measured using a five-point scale (1 – Very Untrue of Me, 5 – Very True of Me).

Institution-based trust (independent variable)

Based on the existing research, this study measured *institution-based trust* by adapting the scales used in Song et al.'s (2018) study. These are *situational normality* and *structural assurance*. These scales were based on existing validated scales (e.g., McKnight & Chervany, 2001; Ozlati, 2015). The proposed adapted measure for *situational normality* is also indicated using a four-item measure. Items included: *"The steps required to publish in OA publishing platforms are similar to other traditional publishing platforms"*; *"The nature of the interactions with the OA publishing platforms is similar to other traditional publishing platforms"*; *"The OA publishing platforms operate like other traditional publishing platforms"*; and *"The peer-review quality of OA publishing outlets is of a similar standard when compared with other traditional publishing platforms."*

Similarly, the proposed adapted measure for *structural assurance* is also indicated using a three-item measure. Items included: *"I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the platforms"; "I feel that encryption and/or other security and privacy policies in OA publishing platforms can make it safe for me to use the system";* and *"The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system."* All *institution-based trust* items were measured using a five-point scale (1 – Strongly Disagree, 5 – Strongly Agree).

Perceived quality (independent variable)

The scale for measuring *perceived quality* was adapted from Moksness and Olsen (2017, 2020) as they measured researchers' perceived quality and intention to publish in OA and non-OA journals. Although their scale targeted both OA and traditional journals, this study adapted their items to OA publishing practices. In Moksness and Olsen' study, *perceived quality* was measured in three dimensions; *perceived impact* (3 items), *perceived visibility* (3 items) and *perceived content quality* (3 items). However, this study adapts two of the dimensions for perceived quality (e.g., *perceived impact* and *perceived content quality*) because two of the three items in *perceived visibility* have low reliability scores, making the construct relatively weak.

The proposed adapted measure for *perceived impact* is also indicated using a three-item measure. Items included: *"It is important that the OA journal/monograph/proceedings have a high impact factor"; "It is important that the OA journal/monograph/proceedings enjoy high status within its field of research" ;* and "*It is important that the OA journal, monograph, proceedings are prestigious to publish in."* Similarly, the proposed adapted measure for *perceived content quality* is also indicated using a three-item measure. Items included: *"It is important that the OA journal/monograph/proceedings normally publish very good quality articles"; "It is important that the OA journal/monograph/proceedings publish articles of consistent quality";* and *"It is important that the OA journal/monograph/proceedings offer very reliable peer review."* All *perceived quality* items were measured using a five-point scale (1 – Strongly Disagree, 5 – Strongly Agree).

Disciplinary norm (independent variable)

Disciplinary norm is operationalised in this study by adapting the scales used by (Kankanhalli et al., 2005) for *pro-sharing norm*. Their scale on *pro-sharing norm* has four items which has been validated. Disciplinary norm represents the norms and culture from various disciplines which affect how they carry out their practices. Hence, three of the items from pro-sharing norms are adapted as *disciplinary norm* in this study. The proposed adapted measure for *disciplinary norm* is also indicated using a four-item measure. Items included: *"There is a norm of OA publishing in my discipline;" "There is a norm of research collaboration in OA journals/monographs/proceedings in my discipline;" "There is willingness to promote OA publishing in my discipline;"* and *"There is a norm of citing OA articles in my discipline."* All

disciplinary norm items were measured using a five-point scale (1 – Strongly Disagree, 5 – Strongly Agree).

Table 3.2 below shows the visual presentation of the constructs adapted in the study, the adapted definition of each construct, the original scales, and their sources.

Table 3.2: Constructs, definitions, scales, and sources

Construct	Adapted definition	Source Scale	Reference
OA Publishing Practice	The experience, frequency, and extent of making research outputs freely available to the public.	Self-archiving behaviour	Kim (2008)
Visibility	The extent to which researchers believe that publishing OA would enhance the wider dissemination of a publication.	Perceived visible advantage	Park (2007)
Prestige	The degree to which publishing OA is perceived to enhance one's reputation or status in one's social system.	Image	Kankanhalli, Tan, and Wei (2005) Moore and Benbasat (1991)
Altruism	The intrinsic benefit and the satisfaction that researchers derive from publishing OA.	Altruism	Kim (2008, 2011)
Situational normality	The belief that OA publishing platforms are in proper order, and that success will occur as a result.	Situational normality	Song et al., (2018); McKnight and Chervany (2001); Ozlati (2015)
Structural assurance	The belief that success is likely because such contextual conditions as promises, contracts, regulations, and guarantees are in place in OA outlets.	Structural assurance	Song et al., (2018); McKnight and Chervany (2001); Ozlati (2015)
Perceived impact	Researchers' subjective evaluation of the effects that publishing OA would have on their publications.	Perceived impact	Mokesness and Olsen (2017)
Perceived content quality	The extent to which researchers perceive the contents of OA outlets to be of good quality.	Perceived content quality	Mokesness and Olsen (2020)
Disciplinary norm	The culture of OA publishing in respondents' disciplines of practice.	Pro-sharing norm	Kankanhalli, Tan, and Wei (2005)

3.6.1.2 Sample and sampling technique

For the questionnaire, purposive sampling technique was employed. Guarte and Barrios (2006) described purposive sampling as "random selection of sampling units within the segment of the population with the most information on the characteristic of interest" (p. 277). Respondents who met the characteristics of early and mid-career researchers in the HASS disciplines were selected for this study. The population of the study was determined by counting the total number of faculty members (i.e., Assistant Professors and Associate Professors,

postdoctoral fellows, sessional instructors, lecturers) publicly displayed on the websites of U15 universities. 1485 professors were selected from 31 departments from HASS disciplines of U15 universities. For the questionnaire respondents participants to indicate their disciplines, an open text field option was provided, allowing them to indicate their departments and fields of research beyond those listed by the CRDC. To identify the departments of the respondents, I categorized their responses according to the 31 disciplines highlighted in CRDC field of research. To enable coding in SPSS, I arranged the disciplines alphabetically and assigned code numbers (#1-31). See Appendix E for the list and code numbers of HASS disciplines in Canada**.**

Since this study involved testing of hypotheses with multiple regression analysis, power analysis calculation, using the sample size heuristics by Tabachnick and Fidell (2007) was followed to determine adequate sample size for the study. The power analysis formular according to Tabachnick and Fidell is $N \geq 50 + 8$(number of independent variables). Since this study has eight independent variables, this would mean $N \geq 50 + 8(8)$. This means that at least 114 respondents were required. However, special effort was made to get higher responses to ensure higher factor reliability and validity, and a more reliable hypotheses testing. Hence, the questionnaire respondents of 231 well exceeded the minimum requirement. The questionnaire response rate is 15.5 %.

3.6.1.4 Recruitment and data collection procedure

Email invitation for the questionnaire was first sent to the compiled list of faculty members of first five universities, using the blind copy (Bcc) field in the email. This method of email invitation only yielded 29 responses (6.8%) out of the 425 invitations sent out on August 19, 2021. Hence, the method of email invitation was changed to direct emailing method using "Mail Merge" function in Microsoft Word, which integrated the names of the professors in the email salutation (e.g., Dear Professor <<name>>). This meant that each respondent received a direct questionnaire invitation with their names included in the email salutation. See Appendix F for questionnaire recruitment email.

This method yielded more positive outcome as more responses were received from the remaining 10 universities on September 22, 2021, and reminder emails were sent to the first five universities the same day. A general follow up reminder was sent two weeks after on October 6, 2021. In total, email invitations were sent to 1485 researchers identified on the publicly available

websites of the U15 universities, yielding a total of 231 completed responses. Interview sign-up acknowledgement was then sent on October 13, 2021, informing those who signed up that they would be contacted at the end of the questionnaire analysis. Since more than the targeted responses were received, the questionnaire was discontinued on October 22, 2021. This means that the survey was active for eight weeks.

3.6.1.4 Validity and reliability

Construct validity was relied on to check the validity of the quantitative study. Construct validity measured the extent to which factor items accurately assess what they are supposed to assess. It helped to test if constructs are appropriate and meaningful in the way they claim to be (Drost, 2011; Rosenthal & Rosnow, 2008). Reliability testing measured the extent to which measurements are repeatable by different persons on different occasions under different conditions, with supposedly alternative instruments which measure the same thing (Drost, 2011; Zohrabi, 2013).

To determine whether these measures are likely to be externally valid, previously validated scales from empirical studies were adapted in this study. The scale for measuring OA publishing practices was adapted from existing studies (Kim, 2008; Thompson, Higgins & Howell, 1991). For the benefit factors, *visibility* construct was adapted from Park (2007), *prestige* construct was adapted from Kankanhalli et al. (2005), while a*ltruism* construct was adapted from Kankanhalli et al. (2005) and Guinot et al. (2015). For the scale measuring *institution-based trust*, two constructs were adapted from Song et al. (2018). These are s*ituational normality* and s*tructural assurance.* These scales have external validity as they have been previously measured in previous studies (e.g., McKnight & Chervany, 2001; Ozlati, 2015). The scale measuring *perceived quality* was adapted from previous studies that investigated researchers' intention to publish in OA journals (Moksness & Olsen, 2017, 2020). Out of the three constructs used for measuring perceived quality in Moksness & Olsen's studies, *perceived impact* and *perceived content quality* were adapted in this study. For d*isciplinary norm*, validated scale from a study measuring *pro-sharing norm* (Kankanhalli et al., 2005) was adapted in this study.

This study then confirmed validity of adapted scales by conducting exploratory factor analysis. Bandalos and Finney (2018) recommends that EFA should be used in situations where

minimal research has been conducted regarding the structure of the construct or measure of interest. They recommend using EFA when there is no *a priori* knowledge on the underlying structure that is to be measured. They strongly suggest that EFA should be used for situations when the variables are newly developed or have not been previously analyzed together. Since the constructs identified in this study have not been previously analyzed together in existing research, conducting EFA seems appropriate in this study. Hence exploratory factor analysis was conducted using principal components analysis with varimax rotation. Varimax rotation simplifies the loadings of items by specifically identifying the factor upon which data load (Yong & Pearce, 2013).

Factor loadings were then generated from factor analysis results. Factor loadings give us an idea of how much the variable has contributed to the factor. As such, the larger the factor loading, the more they contribute to the factor (Yong & Pearce, 2013). According to Comrey and Lee (2013), factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent, respectively. Hence, 0.55 was set as cut-off for including an item in a factor. Results from factor loadings showed no poor loading or incorrect loading. Factor analysis results showed that the study factors are unidimensional—that each group of items represents only one factor and not a group of related but different ones. For the reliability testing, a reliability analysis was conducted using Cronbach's alpha, with a score of 0.70 set as a threshold for inclusion of a factor in the analysis. The value of Cronbach's alpha of all factors exceeded the minimally acceptable range of 0.65-0.70 (DeVellis, 1991; Rosenthal & Rosnow, 2008). See Appendix G for the summary table of factor analysis and composite reliability of study factors.

3.6.1.5 Questionnaire data analysis

Data analysis was carried out using descriptive and inferential statistics with the use of Statistical Package for Social Sciences (SPSS v. 27). Cross-tabulation and frequency counts were used to analyze the demographic information and the participants' responses. Bivariate correlation analysis was employed to test the relationships between independent and dependent variables. In addition to the correlation analysis, multiple regression analysis (MRA) was conducted to test the hypotheses while controlling for other factors. The results from the MRA were used for finalizing the hypotheses testing outcome. In-depth discussion of questionnaire data analysis was provided in chapter four.

3.6.2 Phase 2: Interviews

Interviews were employed to collect qualitative data in this study because they allow individuals to explain, in their own words, how they understand and interpret the phenomenon being studied (Knott, Rao, Summers, & Teeger, 2022). It allowed for in-depth discussion of OA publishing practices by the researchers themselves, which may not have been possible using other methods. Qualitative data was collected and analyzed to help explain the findings from the questionnaire in more depth. The questionnaire findings informed the interview questions, which were developed into semi-structured in-depth interview guide. The interviews also helped to specifically address RQ3 and RQ4. The interviews were important as they focused on the perceptions and understanding of researchers regarding OA publishing, and the barriers limiting their OA publishing practices. The questions were semi-structured as it allowed for follow-up questions based on the interviewee's responses. The interview started with general demographic information of the participants, asking them to describe their current contract type, discipline of practice, and how long they have been working in their roles. The main interview questions then followed, including questions such as: *A lot of people are talking about open access, and some disciplines are adopting OA policies and encouraging their researchers to publish OA. Could you talk about the norms (if any) around OA publishing in your discipline?* See Appendix H for the interview guide.

3.6.2.1 Sample size and response rate

The convenience sampling guided the selection of the interview participants. Onwuegbuzie and Collins (2007) describe convenience sampling as "choosing settings, groups, and/or individuals that are conveniently available and willing to participate in the study" (p. 286). However, participants came from a wide variety of the HASS disciplines. This sampling strategy is appropriate for the study as the questionnaire participants were asked to indicate their interest in participating in the follow-up interview by signing up using an optional form included at the end of the questionnaire. This also helped to ensure that questionnaire participants could provide in-depth discussions about their OA publishing practices. As such, 29 professors signed up for the interview, while 20 professors participated in the interview.

3.6.2.2 Interview data collection procedure

The identification of potential interview participants was done by including an optional sign-up form at the end of the questionnaire. The sign-up form ask participants to sign up on a new form if they were interested in further discussing their OA publishing practices beyond their options provided to them in the structured questionnaire. In the end, 29 professors signed up to participate in the semi-structured interview. Invitations to participate in an in-depth semi-structured interview were sent via the email of the 29 professors who signed up, after the questionnaire analysis and interpretation was completed in January 2022.

Interviews invitations were sent on February 24, 2022, and reminders were sent on March 7, 2022. See Appendix I for interview recruitment emails. Interviews were conducted online via Zoom for a period of one month from March 8 to April 7, 2022. Twenty participants (8 ECRs and 12 MCRs) were interviewed for 50-60 minutes for each interview**.** Earlier studies found that data saturation can be achieved after coding 12 interviews (Guest, Bunce, & Johnson, 2006). In this study, interview was discontinued after 20 interviews, as new interviews did not add anything substantive to the findings. Data transcription was completed within two months following the interviews, and transcripts were sent back to the participants to verify that their opinions were accurately transcribed, a process called member checking (Zohrabi, 2013). The interview process workflow is described in Figure 2 below.

Figure 2. Flow diagram of interview data collection procedure

3.6.2.3 Data coding and analysis

The inductive (reflective) thematic analysis procedure (Braun & Clarke, 2021) was adopted in this study. Braun and Clarke defined thematic analysis as “a method for identifying, analyzing, and reporting patterns (themes) within data” (p. 79). As such, thematic analysis was conducted in NVivo software to analyze the interview data collected in this study. The six phases of thematic analysis were strictly followed in this study are. These are (1) data familiarization;

(2) systematic data coding; (3) generating initial themes from coded data; (4) developing and reviewing themes; (5) defining, refining, and naming themes; and (6) writing the report. Detailed description on each of the six phases is provided in the sections following.

Phase 1. Data familiarization stage

In phase one, data familiarization involved transcribing recorded interviews and verifying the accuracy of the transcription. I employed online Office 365 to carry out automatic transcription of audio recorded interviews and listened to all recorded interviews to ensure accuracy of the transcription and cleaned the data where appropriate. To ensure that the interview transcription was well done, I sent transcripts to all participants to verify if their opinions were well captured, and if all information identifying them has been removed. This was to ensure member checking, a protocol used for ensuring the accuracy and representation of qualitative data (Zohrabi, 2013). During the familiarization phase, I highlighted key points from the manuscripts while reading through. I bolded and italicized some key sentences for easy identification during the coding. By familiarizing with the data, my first impression about interview participants' OA publishing is that of lack of awareness of quality OA venues, limited funds to pay for APCs, policy restrictions regarding tenure and promotion and limited institutional and disciplinary support for OA publishing. However, there was increasing willingness to publish OA amongst the early career researchers. This stage led to the development of mind-map of themes emanating from transcripts. See Appendix J for mind-map of initial understanding and familiarization of the data.

Phase 2. Systematic data coding

Phase two involved the systematic data coding of the datasets. This involved systematically coding the data, generating initial codes through open coding of dataset, noting patterns, and observations about the codes. The codes were texts taken verbatim from interviews, done by reading the transcripts line by line, looking for phrases, and sentences that stood out, and then using phrases that best represent them as codes. See Appendix K for examples participants' quotes that were turned into codes. After carefully coding all quotes from the participants, a total of 302 initial codes emerged as presented in Appendix L. To understand the frequently used words in the codes, I ran a word cloud query of 100 most used words (see Figure 3). The word

cloud can help give an idea of the contents of the transcripts. Some redundant words such as "like," "lots," and "cause" were added to stop words and were removed from the word cloud query. The word cloud shows that "access," "open," "publish," "journals" were the most frequently used words. These were followed by "know" and "think" which signifies knowledge and thoughts about OA publishing by the participants and the discourse of OA and research in relevance to the people and public.

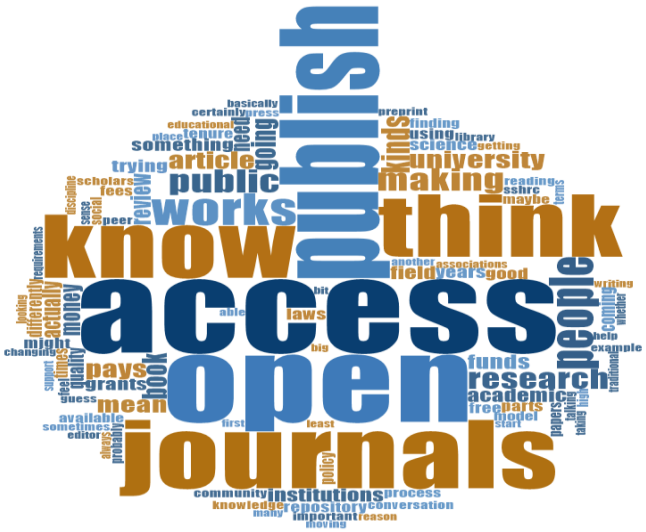

Figure 3. Word cloud of 100 most frequently used words in the data

Phase 3. Generating initial themes from coded data

In phase three, initial themes from coded data were developed. This involved converting codes to initial themes. It involved merging similar codes, renaming codes, and finding themes where codes fit. To generate initial themes from the codes, I carefully read over the codes one after the other, merged similar codes, and found general themes for codes. This also involved moving codes from one theme to a more befitting theme, recoding the codes that were wrongly coded, and moving them to appropriate themes. This reduced the 302 codes generated in phase 2 to 214 codes and 17 initial themes. One of the themes named "Floating Ideas" consist of codes that could not fit into any of the 16 initial themes. Out of the 17 themes, "Barriers to OA" has the highest codes, with 35 codes (171 references/quotes) from 19 files/participants. This was followed by "Motivations for OA Publishing" with 21 codes (74 references/quotes) and "Recommendations for Improving OA Uptake" which has 14 codes (97 references/quotes). See Appendix M for initial themes generated from participants' quotes.

Phase 4. Developing and reviewing themes

Phase four focused on developing and reviewing themes. This means that broad themes generated from phase 3 were further reviewed and developed. Similar themes were merged, and the codes of these themes were compared. Codes with similar meanings were grouped and renamed. To identify and develop distinct themes, I reviewed and read the codes, merged similar codes, and renamed codes to accurately represent participants' discussions (i.e., quotes). For example, the 214 codes identified in phase 3 were reduced to 202 codes. This then led to the development of eight (8) main themes that represented the reviewed codes. See Appendix N for developed and reviewed themes with their associated codes. To further delve into discovering initial patterns and relationship among themes, a framework of themes was developed. Figure 4 shows the inter-connections among the developed themes. This framework helped to deduce that OA experiences of the participants were determined by their perceptions of quality of OA outlets and their engagement with institutional repositories (IRs). Similarly, participants' engagement with IRs could also be determined by OA norms in their disciplines, and these norms could determine the future of OA publishing. In the same vein, perceptions of quality, if positively perceived, could influence researchers to publish OA (influencing factors), and these influencing factors could be leveraged on as recommendations. Lastly, barriers to OA should be reduced as they have the potentials to negatively influence participants' OA engagements, experiences, quality perceptions, norms, and future of OA. Recommendations to reduce these barriers and to improve OA uptake in the HASS disciplines were provided by the participants.

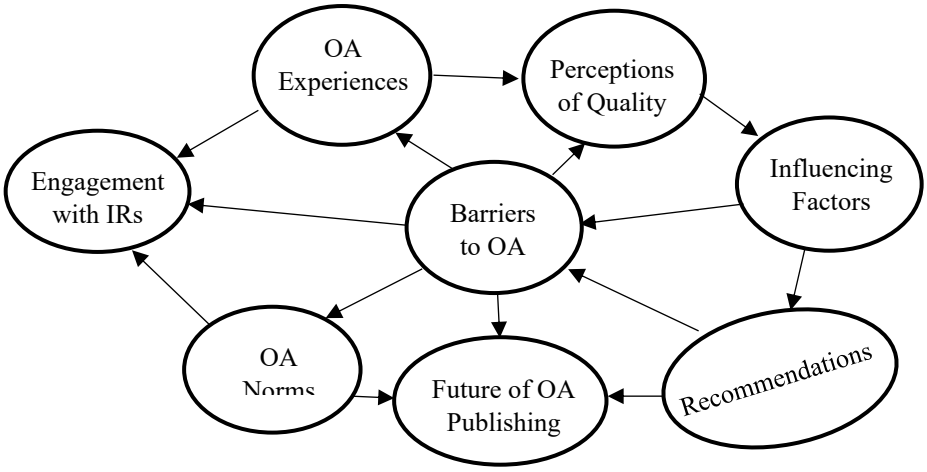

Figure 4. Developed themes and their interconnections

Phase 5. Defining, refining, and naming themes

In phase five, the developed themes were then refined, defined, and named. This phase provided final refining and naming of the themes, giving more refined and nuanced themes which can help answer the research questions. The codes were further reduced from 202 (in phase 4) to 181, with six main themes. These are 1) Barriers to researchers OA publishing; 2) Factors influencing researchers' OA publishing; 3) Norms for OA publishing; 4) OA publishing engagements of researchers; 5) Quality perceptions and assessment of OA outlets; and 6) Recommendations for improving OA uptake. See Appendix O for the themes and codes that emerged from phase 5 of thematic analysis.

Phase 6. Writing the report

In phase six, the procedure for writing the report of the thematic analysis was outlined. The refined themes were finally developed into analytical themes in relation to the research questions. This led to four main themes, each theme having sub-themes which helped to describe the main themes, as presented in Figure 5. The four main themes guided the writing of the findings from the thematic analysis. The final codebook from phase 6 of the thematic analysis was exported and included for reference in this study (See Appendix P).

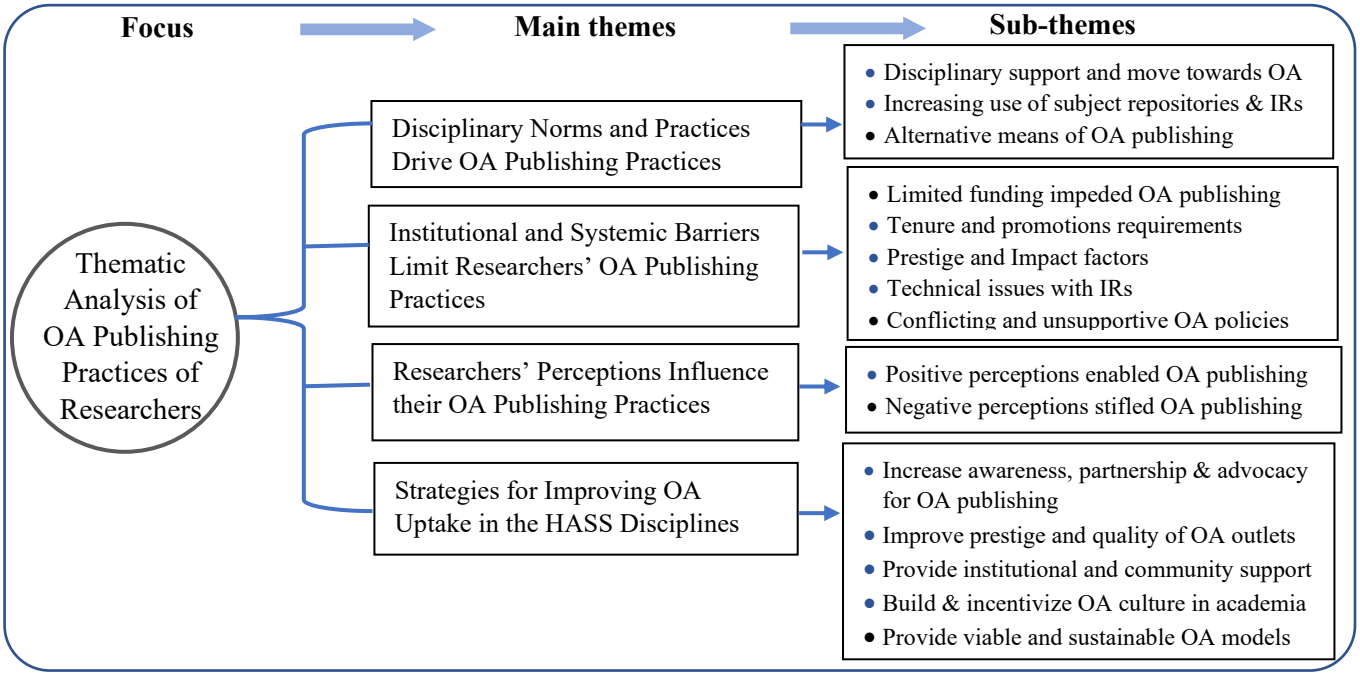

Figure 5. Model of thematic analysis final outcomes

3.6.2.4 Trustworthiness of the interview data

Guba (1981) suggests four criteria for achieving the trustworthiness of qualitative research. These are truth value (confidence in the truth of the findings), applicability (ensuring that findings of a study is applicable in other context), consistency (making sure the findings of the study are consistent if replicated in the same or similar context) and neutrality (free from biases, interest, perspectives of the inquirer). These four criteria have been refined by Lincoln and Guba (1985) and Pickard (2013) as credibility, transferability, dependability, and confirmability. To achieve credibility, interview data transcripts were sent back to the participants to avoid misrepresentation, a process referred to as member checking (Zohrabi, 2013). With member checking, participants can confirm the credibility of the information and narrative account (Creswell & Miller, 2000). Achieving credibility of the interview data through member checking also fits with post-positivism paradigm, which ensures that the views of the participants were accurately captured and represented in the data transcription and analysis (Creswell & Miller, 2000). Post-positivists recognize that prior experience and current social contexts influence our perceptions and shape our consciousness. As such, the experiences of the interview participants were accurately represented. This was achieved in this study through member checking.

To achieve transferability, I ensured thick description and robust data interpretation and analysis of the researchers' OA scholarly communication practices (Creswell & Miller, 2000; Lincoln & Guba, 1985). Dependability of the study was ensured through rich description of the data, study context, research design, and participants. Neutrality was achieved through accurate description of the data as well as through member checking, ensuring that my personal interest, biases, and motivations did not interfere with the interpretation and reporting of the data (Guba, 1981). More so, confirmability was assured through the availability of the audio recordings, transcripts, and code books derived from the interviews (qualitative data), as well as detailed description of these processes in the study.

3.6 Integration of questionnaire and interview findings

Integration of questionnaire and interview findings was done in the discussion of findings section where findings from both phases were compared and discussed in relation to the research

questions and existing studies (Fetters, Curry, & Creswell, 2013; Ivankova et al., 2006). The function or rationale for the integration is to allow for in-depth explanation of the findings by using the qualitative findings to explain the quantitative findings (Greene, Caracelli, & Graham, 1989). The integration also helped to explore other areas the quantitative findings could not cover in relation to the research questions, so the qualitative study is given the priority (Creswell, Plano Clark, Gutmann, & Hanson, 2003), hence the capitalization in the figure below. See Figure 6 for a diagram of the mixed-methods procedure followed in the study, consistent with existing studies (e.g., Ivankova et al., 2006; Ivankova & Stick, 2007; Sun, Loh, & Nie, 2021).

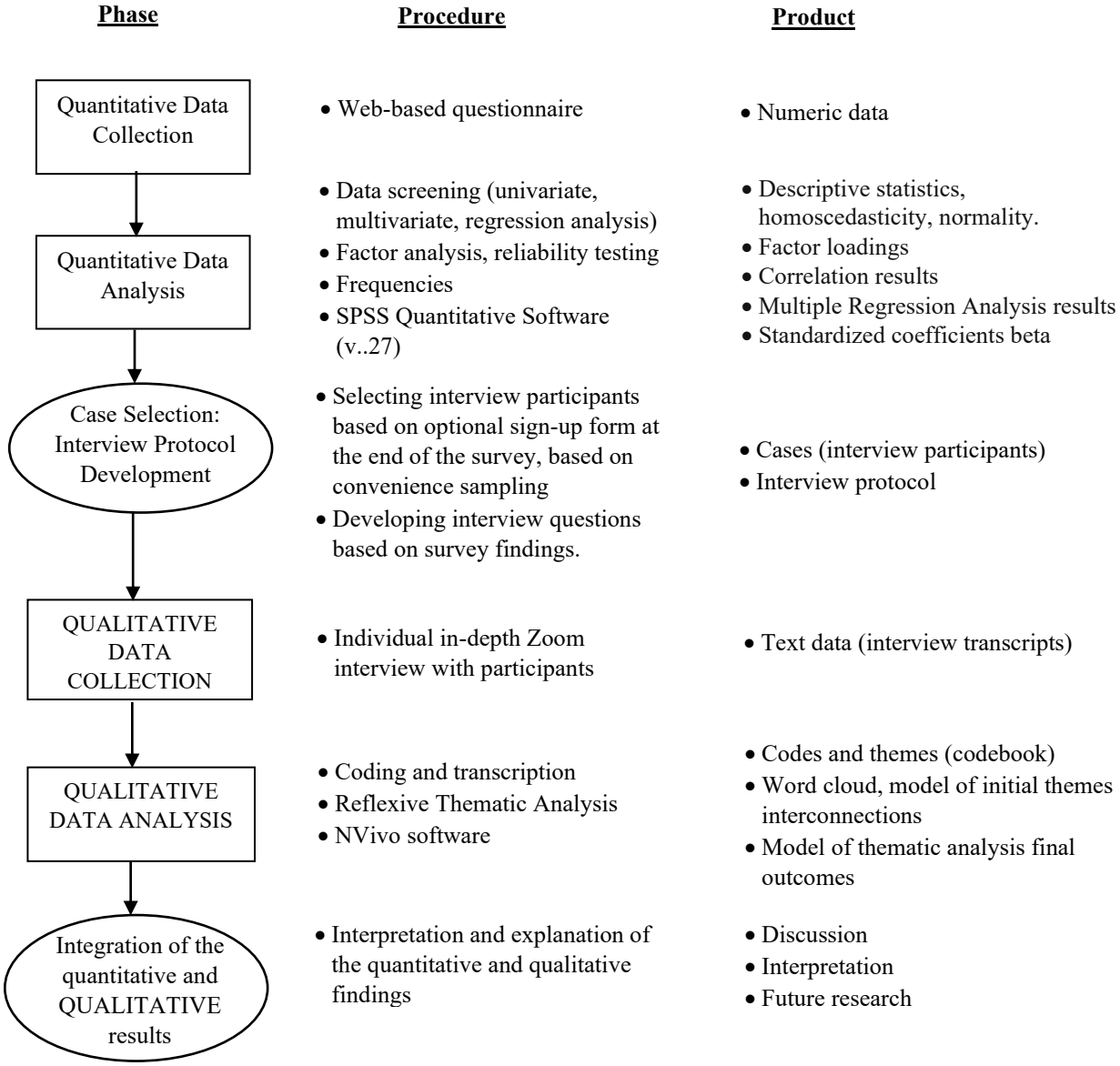

Figure 6. Visual model of the mixed-methods sequential explanatory design procedures

Chapter 4: Phase 1 Findings – Web-Based Structured Questionnaire

4.0 Chapter overview

This section presents the results from phase 1 of the data collection. The first phase employed a web-based structured questionnaire to address RQ1 and RQ2. Again, RQ1 is "*What are the open access publishing practices of early and mid-career researchers in the HASS disciplines in Canada? Are there differences in their OA publishing practices based on career stage, professional status, and academic disciplines?"* RQ2 is "*What factors influence researchers' open access publishing practices?*" This chapter includes the description and analysis of the questionnaire data collected in this study. It presents the sample size and respondents' demographics, factor analysis, and reliability testing. It also presents descriptive statistics of independent and dependent variables, as well as the analysis of measures and hypotheses testing. It concludes by summarizing the hypotheses testing, including whether study hypotheses were supported.

4.1 Questionnaire Sample Size

Out of the 1485 survey invitations that were sent out, a total of 66 incomplete responses, and 231 complete responses were received on October 22, 2021. Only complete responses were used for the data analysis, giving a response rate of 15.5 %. The sample size for this study well exceeded the minimum requirement of 114, determined through power analysis calculation by Tabachnick and Fidell (2007), earlier discussed in section 3.6.1.2. Besides, it also exceeds some earlier studies that employed online survey to collect faculty opinion on OA publishing, with only 6.6% response rate (i.e., Coonin, 2011). Although 231 completed responses were received, data cleaning shows that some participants did not meet the requirements of the study. Three responses were submitted by professors from mathematics, life sciences and geology, and neuroscience. Since this study focused on HASS disciplines, the three responses submitted from the sciences were deleted. This leaves the total responses eligible for data analysis to 228.

4.2 Questionnaire Participants' Demographics

4.2.1 *Participants' profile by professional rank*

Table 4.1 shows that of the 228 participants who completed the questionnaire, about half (108 or 47.4 %) are Associate Professors, followed by those who are Assistant Professors (91 or 39.9%). This implies that findings from this study were mostly provided by these categories of participants. Of the eight participants (3.5%) who chose the *other* option, six are full-time lecturers (may be due to other terminology used by some universities), and two others hold non-academic positions.

Table 4.1: Participants' professional ranks

	Frequency	*Percentage*
Post-Doctoral Fellow	6	2.6
Sessional/Part-time Lecturer/Instructor	7	3.1
Assistant Professor	91	39.9
Associate Professor	108	47.4
Full Professor	8	3.5
Others	8	3.5
Total	228	100.0

4.2.2 Participants' profile by year of PhD, career stage, and contract type

To determine the career stage of the participants, survey participants were asked to indicate the year they earned their PhD. Based on the definition of early and mid-career participants described earlier (CIHR, 2007; SSHRC, 2012), participants were categorized into three career stages based on the following: As shown in Table 4.2, 123 participants (53.9%) are mid-career researchers while 65 (28.5%) are early career researchers. This may indicate that there are more mid-career researchers in the chosen disciplines, or that mid-career researchers tend to engage more in social responsibilities such as participating in surveys. The percentage of senior researchers (11.8%) is comparatively lower in this study. This is because this study was originally designed to include only early and mid-career researchers. However, since some senior researchers chose to participate, it seems appropriate to include them in the analysis as this may give a little understanding of their OA publishing practices which may inform future studies. About 6% of the participants (13 of 228) did not answer this question.

Table 4.2: Participants' profile by career stage

	Frequency	*Percentage*
Early career researcher	65	28.5
Mid-career researcher	123	53.9
Senior researcher	27	11.8
No answer	13	5.7
Total	228	100.0

In addition, participants were asked the type of contract they hold as faculty or researchers. As shown in Table 4.3, of the 228 who completed the survey, 105 (46.1%) are tenured professors, 88 (36.6%) are on tenure-track positions, while only 31 (13.6%) are on short contract-based positions. This is consistent with their career stage described earlier. Some definitions have referred to mid-career researchers as those who have typically established their profiles (Baldwin et al., 2008). In this study, they are those who are mostly tenured. Less than 2% of the participants (4 of 228) chose the *other* option, with three of them indicating that that they are adjunct, not currently holding any academic position, or holding continuing status.

Table 4.3: Participants' profile by contract type

	Frequency	*Percentage*
Contract	31	13.6
Tenure-track	88	38.6
Tenured	105	46.1
Other	4	1.8
Total	228	100.0

4.2.3 Participants' profile by academic discipline

Table 4.4 shows that of the 228 participants who completed the questionnaire, 121 (53.1%) are from the social sciences disciplines, followed by 85 participants (37.3%) who are from the humanities. The percentage of those from the arts (6.6%) is low, but this could be because most disciplines in humanities and arts are often classified as humanities. Only 7 (3.1%) participants chose the *other* options, where two of the participants indicated that their discipline (i.e., linguistics) is both humanities and social sciences.

Table 4.4: Participants' broader academic disciplines

	Frequency	*Percentage*
Humanities	85	37.3
Arts	15	6.6
Social sciences	121	53.1
Other	7	3.1
Total	228	100.0

In addition to the three general academic disciplines described earlier, participants were asked to indicate their discipline variations in terms of: (1) disciplines studied (2) disciplines of practice, and (3) disciplines they currently identify with. This is to ascertain if participants' disciplinary affiliations have changed during their practice. The specific academic departments and units within the HASS disciplines were determined by providing a short open text field for participants to specify their disciplines. As shown in Table 4.5, in the humanities and arts disciplines, participants from the linguistics departments (8.8%) were the majority, followed by those from languages (5.3%), historical studies and history and philosophy of specific fields (4.8%). Only one participant (0.4%) was from the creative writing department. In the social sciences disciplines, most of the participants were from psychology and cognitive sciences (8.8%) followed by political sciences and policy administration (7.0%). Ten participants (4.4%) did not indicate their disciplines, and only one participant (0.4%) was from other disciplines that do not fall under any of the 31 disciplines listed in the CRDC list.

Table 4.5: Participants' academic disciplines

Disciplines	***Disciplines Studied***		***Discipline of Practice***		***Disciplines Identified with***	
Humanities and arts disciplines						
	Frequency	*%*	*Frequency*	*%*	*Frequency*	*%*
Archaeology	5	2.2	1	0.4	5	2.2
Creative writing	1	0.4	2	1	1	0.4
Cultural studies	6	2.6	3	1.3	4	1.8
Design practice and Management	2	0.9	3	1.3	3	1.3
Digital humanities	-	-	-	-	1	0.4
Historical studies	11	4.8	12	17	11	4.8
History and philosophy of specific fields	11	4.8	9	3.9	11	4.8
Languages	12	5.3	17	7.5	13	5.7
Linguistics	20	8.8	20	8.8	19	8.3
Literature and literary studies	3	1.3	2	1	3	1.3
Music	8	3.5	7	3.1	6	2.6
Performing arts	2	0.9	1	0.4	4	1.8
Philosophy	8	3.5	7	3.1	10	4.4
Religion and religious studies	2	0.9	3	1.3	2	0.9
Visual arts and media arts	2	0.9	2	1	2	0.9
Social sciences disciplines						
Anthropology	8	3.5	9	3.9	7	3.1
Criminology	2	0.9	1	0.4	3	1.3
Demography	2	0.9	2	1	5	2.2
Economics and business administration	8	3.5	7	3.1	7	3.1
Education	13	5.7	12	17	11	4.8
Law and legal practice	16	7.0	18	7.9	16	7.0
Media and communications	8	3.5	8	3.5	8	3.5

Political science and policy Administration	16	7.0	17	7.5	16	7.0
Psychology and cognitive sciences	20	8.8	20	8.8	19	8.3
Social and economic geography	7	3.1	6	2.6	7	3.1
Social work	11	4.8	11	4.8	11	4.8
Sociology and related studies	13	5.7	17	7.5	12	5.3
Others	1	0.4	-	-	2	0.9
Not reported	10	4.4	11	4.8	-	-
Total	**228**	**100.0**	**228**	**100.0**	**228**	**100.0**

Similarly, participants were asked to indicate their disciplines of practice. This is to find out whether participants' current disciplines of practice are different from what they studied. As shown in Table 4.5, the disciplines of practice of the participants mostly remained consistent with the disciplines studied. However, languages disciplines increased by 2.2%, while law and legal practice discipline increased slightly by 1% in practice. Meanwhile, archaeology discipline reduced by 1.8% in practice. Other disciplines did not see any significant increase or decrease in practice. To further examine if participants studied in certain disciplines, but identify with different disciplines, they were asked to indicate the disciplines they identify with. Result showed that participants mostly identify with the disciplines they studied. For instance, the number of participants who studied archeology remained the same with the number of those who currently identify with archeology (2.2%). The only difference is evident in their disciplines of practice.

4.2.4 Participants' profile by gender

As noted in Table 4.6, of the 228 participants who completed the survey, 115 are women and thus accounted for slightly half (50.4%) of the total population, a bit higher than 98 participants (43%) who identified as men. Of the two participants who preferred to self-describe, one is two-spirited, the other is Zed and do not identify with any gender. In addition, 10 participants (4.4%) would rather not reveal their gender identity, which may be because it is "a deeply personal question" as one participant noted.

Table 4.6: Participants' profile by gender

	Frequency	*Percentage*
Man	98	43.0
Woman	115	50.4
Non-Binary	3	1.3
Would rather not say	10	4.4
Prefer to self-describe	2	0.9
Total	228	100.0

4.2.5 Participants' profile by Age

As shown in Table 4.7, 98 participants (43%) are between the ages of 41-50, followed by those who are between the ages of 31-40 (36.8%). This is expected and represents the age of most of the participants who are early and mid-career researchers. Five participants (2.2%) chose to not indicate their age, while only one participant (0.4%) did not answer.

Table 4.7: Participants' profile by Age

	Frequency	*Percentage*
21-30	4	1.8
31-40	84	36.8
41-50	98	43.0
51- 60	34	14.9
61 and above	2	0.9
Would rather not say	5	2.2
No answer	1	0.4
Total	228	100.0

4.3 Analyses of Measures

This section presents the analysis of all variables, which includes the dependent variable (i.e., *OA publishing practices)* and eight independent variables (i.e., *prestige, visibility, altruism, situational normality, structural assurance, perceived impact, perceived content quality* and *disciplinary norm*).

4.3.1 Open access publishing practices

To answer RQ1 (i.e., *What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers' OA publishing practices based on career stage, professional status, and academic disciplines?*) this study employed three factors to measure the OA publishing practices of the participants. These include their *OA publishing experience (*i.e., whether they have ever published in OA outlets)*, OA publishing frequency (i.e.,* how often they publish in OA outlets)*,* and *OA publishing extent* (i.e., the percentage of their research outputs published as OA in the last three years). These three components were combined as composite variable, representing the degree of researchers' OA publishing practices. This is consistent with existing studies that measured similar variable (e.g., Kim, 2008; Thompson et al., 1991). The factors were combined to allow for further statistical testing and analysis (correlation and regression analyses). The transform function in SPSS was

used to combine the factors, allowing for strong variable factor and reliability outcome which otherwise was weak when tested separately.

Factor Analysis

SPSS was used to perform an exploratory factor analysis (i.e., principal components analysis with varimax rotation). According Comrey and Lee (2013), factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent. Hence, 0.55 (i.e., good) was set as a cut-off for inclusion of an item in a factor. As noted in Table 4.8, the factor loadings showed the unidimensionality of the three items, indicating that the items can load as one (Segars, 1997). The loadings exceeded the acceptable limit, indicating high construct validity.

Table 4.8: Results of factor analysis of the dependent variable

Factor loadings		Component 1
1	OA Publishing Experience	0.803
2	OA Publishing Frequency	0.949
3	OA Publishing Extent	0.960

Reliability Analysis

The reliability of the dependent variable (i.e., OA publishing practices) was assessed using Cronbach's alpha measure. Cronbach's alpha measured the internal consistency of a construct (DeVellis, 1991). This was found appropriate for checking the reliability of the dependent variable. As noted in Table 4.9, the value of Cronbach's alpha co-efficient score exceeded the minimally acceptable range of 0.65-0.70 (DeVellis, 1991). This implies that the variable is reliable for analysis.

Table 4.9. Reliability results of dependent variable

Reliability Statistics	α	N
OA scholarly publishing practices factors	0.876	3

4.3.1.1 OA Publishing Experience

Participants were asked whether they have ever published in any of the four OA outlets (i.e., OA journals, OA proceedings, OA monographs/books, or IRs). Participants selected one of the following options: (1) No, or (2) Yes. To analyze their OA publishing experience, frequency count analysis of responses was carried out in SPSS, using the crosstabulation feature to

categorize their responses. The percentages were calculated based on the ratio of categories and responses (i.e., within groups) instead of overall responses based on numbers. Table 4.10 shows the OA publishing experience of participants according to rank. Results showed that of the 218 participants who responded to whether they have published in OA journals, 76 Associate Professors (70.4%) have published in OA journals in the past three years, followed by 60 Assistant Professors (66.7%). For OA monographs, a large percentage of Associate Professors (80.6%) have never published their research in OA monographs, followed by 65 Assistant Professors (75.6%).

The same applies to OA proceedings, but some differences can be seen in respondents' experience with self-archiving or pre-prints deposit in IRs. Whereas almost 47% of Associate Professors have self-archived in the last three years, only 35.3% of Assistant Professors have deposited their pre-prints in IRs. This suggests that Associate Professors have more experience in publishing OA than their junior counterparts. However, the percentage of respondents' scholarly outputs published in OA monographs (20.8%) and OA proceedings (28.6%) in the last three years is low, but more than average (67.4%) in OA journals. This suggests that participants have published more in OA journals than in other OA outlets.

Table 4.10: OA publishing experience by academic rank

	OA Journals		**OA Monographs**		**OA Proceedings**		**IRs**	
	(N=218)		***(N=207)***		***(N=206)***		***(N=202)***	
	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)
Post-Doctoral Fellow	3 (50.0)	3 (50.0)	5 (100)	-	2 (40.0)	3 (60.0)	4 (80.0)	1 (20.0)
Sessional	4 (57.1)	3 (42.9)	5 (83.3)	1 (16.7)	5 (83.3)	1 (16.7)	5 (83.3)	1 (16.7)
Assistant Professor	30 (33.3)	60 (66.7)	65 (75.6)	21 (24.4)	59 (69.4)	26 (30.6)	55 (64.7)	30 (35.3)
Associate Professor	32 (29.6)	76 (70.4)	83 (80.6)	20 (19.4)	76 (73.8)	27 (26.2)	56 (53.6)	48 (46.2)
Full Professor	2 (28.6)	5 (71.4)	6 (85.7)	1 (14.3)	5 (71.4)	2 (28.6)	3 (42.9)	4 (57.1)
Total	**71 (32.6)**	**147 (67.4)**	**164 (79.2)**	**43 (20.8)**	**147 (71.4)**	**59 (28.6)**	**123 (59.4)**	**84 (40.6)**

In addition, results revealed the OA publishing experience of participants according to their career stages. Table 4.11 presents the percentage of respondents' OA publishing experience calculated using the crosstabulation feature in SPSS. The percentages were calculated based on

the ratio of categories and responses (i.e., within groups) instead of overall responses based on numbers. Findings showed that respondents have published differently in OA outlets, as 91 MCRs (75%) and 41 ECRs (63.1%) have published in OAJs. Overall, participants at all career stages have published more in OAJs compared to other OA outlets. For instance, only 29 respondents (40%) have deposited their pre-prints in IRs, compared to 148 participants (70%) who have published in OA journals in the last three years. Furthermore, the percentage of MCRs who have deposited their pre-prints in IRs (47.9%) is higher than ECRs (28.3%) and senior researchers (21.7%). Overall, publishing in OA monographs is low among all career stages, as only 43 participants (21.3%) have done so in the last three years.

Table 4.11: OA publishing experience by career stage

	OA Journals		**OA Monographs**		**OA Proceedings**		**IRs**	
	(N=213)		***(N=202)***		***(N=201)***		***(N=202)***	
	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)
Early career researchers	24 (36.9)	41 (63.1)	51 (83.6)	10 (16.4)	43 (71.7)	17 (28.3)	43 (71.7)	17 (28.3)
Mid-career researchers	31 (25.4)	91 (74.6)	87 (74.4)	30 (25.6)	81 (69.8)	35 (30.2)	62 (52.1)	57 (47.9)
Senior participants	10 (38.5)	16 (61.5)	21 (87.5)	2 (12.5)	17 (68.0)	8 (32.0)	18 (78.3)	5 (21.7)
Total	**65 (30.5)**	**148 (69.5)**	**159 (78.9)**	**43 (21.3)**	**141 (70.1)**	**60 (29.9)**	**123 (60.9)**	**29 (39.1)**

Table 4.12 presents the result of participants' OA publishing experience by disciplines. Since this study focused on the HASS disciplines, academic disciplines of respondents were categorized into three primary areas: humanities, arts, and social sciences. Results showed that 71.1% of respondents in the social sciences have published more in OAJs, compared to 61.4% and 60% of respondents in the humanities and arts, respectively. A similar trend is observed in self-archiving or pre-prints deposit in IRs, as about 49% of respondents in social sciences answered yes, compared to about 29% in the humanities and arts disciplines. Interestingly, the percentage of researchers from the arts who have published in OA proceedings (53.3%) is higher than those in the humanities and social sciences (17.9% and 28.9% respectively). This suggests that researchers from the arts disciplines published more in OA proceedings than their counterparts from the humanities and social sciences. Results further showed that about 80% of

respondents have never published in OA monographs, with those from social sciences (81.7%) slightly higher than those in the humanities (76.3%) and arts (78.6%).

Table 4.12: OA publishing experience by academic discipline

	OA Journals		**OA Monographs**		**OA Proceedings**		**IRs**	
	(N=219)		***(N=209)***		***(N=207)***		***(N=209)***	
	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)
Humanities	32 (38.6)	51 (61.4)	61 (76.3)	19 (23.8)	64 (82.1)	14 (17.9)	57 (71.3)	23 (28.7)
Arts	6 (40.0)	9 (60.0)	11 (78.6)	3 (21.4)	7 (46.7)	8 (53.3)	10 (71.4)	4 (28.5)
Social sciences	35 (28.9)	86 (71.1)	94 (81.7)	21 (18.3)	81 (71.1)	33 (28.9)	59 (51.3)	56 (48.7)
Total	**73 (33.3)**	**146 (66.7)**	**166 (79.4)**	**43 (20.6)**	**152 (73.4)**	**55 (26.6)**	**126 (60.3)**	**83 (39.7)**

To further discuss the experiences of respondents beyond their broad academic disciplines (i.e., humanities, arts, and social sciences), a crosstabulation analysis of OA publishing experiences of participants in specific disciplines of practice was carried out. As shown in Table 4.13, among the humanities and arts disciplines, participants who have published in OA journals are mostly from linguistics 13 (68.4%) and languages 9 (56.3%). Whereas only four participants (23.5%) from languages, three (15.8%) from linguistics and two (33.3%) from philosophy have published in OA monographs. More so, 12 participants (63.2%) from linguistics have published in OA conference proceedings, compared to only six participants (37.5%) in languages. None of the participants from performing arts, philosophy, religions and religious studies, visual arts, and media arts have published on OA conference proceedings. Results showed that depositing pre-prints in IRs is still low across most disciplines in the humanities and arts, as 14 participants each from languages (82.4%) and linguistics (73.7%) have never self-archived or deposited their scholarly outputs in IRs.

For the social sciences disciplines, 17 participants (85%) from psychology and cognitive sciences have published in OA journals, followed by 15 participants (83.3%) from law and legal practices, and 11 participants (91.7%) from education. However, most of the participants from social sciences have never published their scholarly outputs in OA monographs. This is evident as 18 participants (94.7%) from psychology, 11 participants (64.7%) from law and legal practice, and nine participants (81.8%) from education have never done so. The same applies to OA

conference proceedings as only five participants each from education (8.3%), political science and policy administration (29.4%) and sociology and related studies (31.3%) have published in OA conference proceedings.

Results suggested that self-archiving/depositing pre-prints in IRs is higher in the social sciences, compared to the humanities and arts disciplines. This is evident as 11 participants (57.9%) in psychology and cognitive sciences, followed by nine participants each from law and legal practice (52.9%), political science and policy administration (52.9%) and sociology and related studies (56.3%) have deposited their pre-prints in IRs. This suggests that preprints deposit in IRs is more common in the social science disciplines than it is in the arts and humanities.

Table 4.13: Participants' OA publishing experience by academic disciplines

	OA Journals		**OA Monographs**		**OA Proceedings**		**IRs**	
	(N=226)		***(N=214)***		***(N=213)***		***(N=214)***	
	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)
Humanities and Arts Disciplines								
Archaeology	-	1 (100.0)	1 (100)	-	-	1 (100.0)	1 (100.0)	-
Creative writing	1 (50.0)	1 (50.0)	1 (50)	1 (50.0)	1 (50.0)	1 (50.0)	2 (100.0)	-
Cultural Studies	1 (33.3)	2 (66.7)	2 (100)	-	1 (50.0)	1 (50.0)	2 (100.0)	-
Design Practice and Management	-	3 (100.0)	1 (50)	1 (50.0)	-	3 (100.0)	-	2 (100.0)
Historical Studies	7 (58.3)	5 (41.4)	9 (75.0)	2 (25.0)	9 (75.0)	3 (25.0)	9 (75.0)	3 (25.0)
History and Philosophy of specific fields	4 (44.4)	5 (55.6)	7 (77.8)	2 (22.2)	7 (87.5)	1 (12.5)	8 (100.0)	-
Languages	7 (43.8)	9 (56.3)	13 (76.5)	4 (23.5)	10 (62.5)	6 (37.5)	14 (82.4)	3 (17.6)
Linguistics	7 (43.9)	13 (68.4)	16 (84.2)	3 (15.8)	7 (36.8)	12 (63.2)	14 (73.7)	5 (26.3)
Literature and Literary Studies	1 (50.0)	1 (50.0)	1 (100)	-	1 (50.0)	1 (50.0)	1 (100.0)	-
Music	2 (28.6)	5 (71.4)	6 (85.7)	1 (14.3)	5 (71.4)	2 (28.6)	5 (71.4)	2 (28.6)
Performing Arts	-	1 (100)	1 (100)	-	1 (100.0)	-	1 (100.0)	-
Philosophy	1 (14.3)	6 (85.7)	4 (66.7)	2 (33.3)	6 (100.0)	-	3 (42.9)	4 (57.1)
Religion and Religious Studies	2 (66.7)	1 (33.3)	2 (100)	-	2 (100.0)	-	2 (100.0)	-
Visual Arts and Media Arts	1 (50.0)	1 (50.0)	1 (50)	1 (50.0)	2 (100.0)	-	1 (50.0)	1 (50.0)
Social Sciences Disciplines								
Anthropology	2 (22.2)	7 (77.8)	6 (75.0)	2 (25.0)	4 (66.7)	2 (33.3)	3 (37.5)	5 (62.5)
Criminology	-	1 (100.0)	1 (100)	-	-	1 (100)	1 (100.0)	-
Demography	1 (50.0)	1 (50.0)	1 (50)	1 (50.0)	2 (100.0)	-	2 (100.0)	-
Economics & Business Administration	4 (57.1)	3 (42.9)	7 (100)	-	7 (100.0)	-	5 (71.4)	2 (28.6)
Education	1 (8.3)	11 (91.7)	9 (81.8)	2 (18.2)	5 (41.7)	5 (8.3)	7 (63.6)	4 (36.4)
Law and Legal Practice	3 (16.7)	15 (83.3)	11 (64.7)	6 (35.3)	16 (94.1)	1 (5.9)	8 (47.1)	9 (52.9)

Media and Communications	1 (12.5)	7 (87.5)	5 (62.5)	3 (37.5)	7 (87.5)	1 (12.5)	5 (62.5)	3 (37.5)
Political Science and Policy Administration	8 (47.1)	9 (52.9)	14 (82.4)	3 (17.6)	12 (70.6)	5 (29.4)	8 (47.1)	9 (52.9)
Psychology and Cognitive Sciences	3 (15.0)	17 (85.0)	18 (94.7)	1 (5.3)	14 (73.7)	5 (26.3)	8 (42.1)	11 (57.9)
Social and Economic Geography	1 (16.7)	5 (83.3)	5 (83.3)	1 (16.7)	5 (83.3)	1 (16.7)	3 (50.0)	3 (50.0)
Social Work	2 (18.2)	9 (81.8)	8 (89.9)	1 (11.1)	8 (88.9)	1 (11.1)	6 (66.7)	3 (33.3)
Sociology and Related Studies	7 (41.2)	10 (58.8)	11 (68.8)	5 (31.3)	11 (68.8)	5 (31.3)	7 (43.8)	9 (56.3)
Others	-	1 (100)	1 (100)	-	-	1 (100)	-	1 (100.0)
Not reported	7 (70.0)	3 (30.0)	8 (88.9)	1 (11.1)	9 (100.0)	-	4 (44.4)	5 (55.6)

Summary of researchers' OA publishing experience

Results suggested that respondents have published their research outputs in some OA outlets. However, MCRs have published more in OA outlets than did ECRs (i.e., 74.6% vs. 63.1%). For OA outlets, the majority (70%) of the participants have published more in OA journals, while few (40%) have self-archived in IRs, especially those from the social sciences disciplines. Publishing in OA monographs and OA conference proceedings is low among all participants, but slightly higher in the art disciplines (53.3%). This indicates that most of the participants who published OA, did so in OA journals. Overall, OA publishing by researchers in the social sciences is slightly higher than those from the humanities and arts disciplines, particularly in education (91%) and psychology (85%). Whereas in the humanities and arts disciplines, participants from linguistics (68.4%), law (64.7%), and languages (56.3%) have more experience publishing OA.

4.3.1.2 OA Publishing Frequency

Respondents were asked how many times they published in OA outlets (i.e., OA journals, OA proceedings, OA monographs/books, and self-archiving in IRs) in the last three years. They chose one of these five responses: (1) none; (2) once; (3) 2-3 times; (4) 4-5 times; (5) over 6 times. As shown in Figure 7, almost half of the respondents 113 (49.8%) have published 1-3 times in OA journals, whereas 89 (39.2%) have never done so. More so, 177 respondents (77.6%) have never published in OA monographs, and only 37 participants (16.2%) have published 1-3 times in OA monographs. Respondents who have published over six times in OA

journals are fewer (3.5%) than those who have published in OA proceedings (7.4%). In addition, only 24 respondents (10.5%) have deposited their pre-prints in IRs at least two to three times in the last three years. Respondents who frequently (i.e., 4 -5 times) deposited their pre-prints in IRs are just 7.4%. This suggests a relatively higher frequency of self-archiving in IRs, when compared to other OA outlets. Overall, these findings indicate that many researchers in the HASS disciplines do not frequently publish their scholarly outputs in OA outlets.

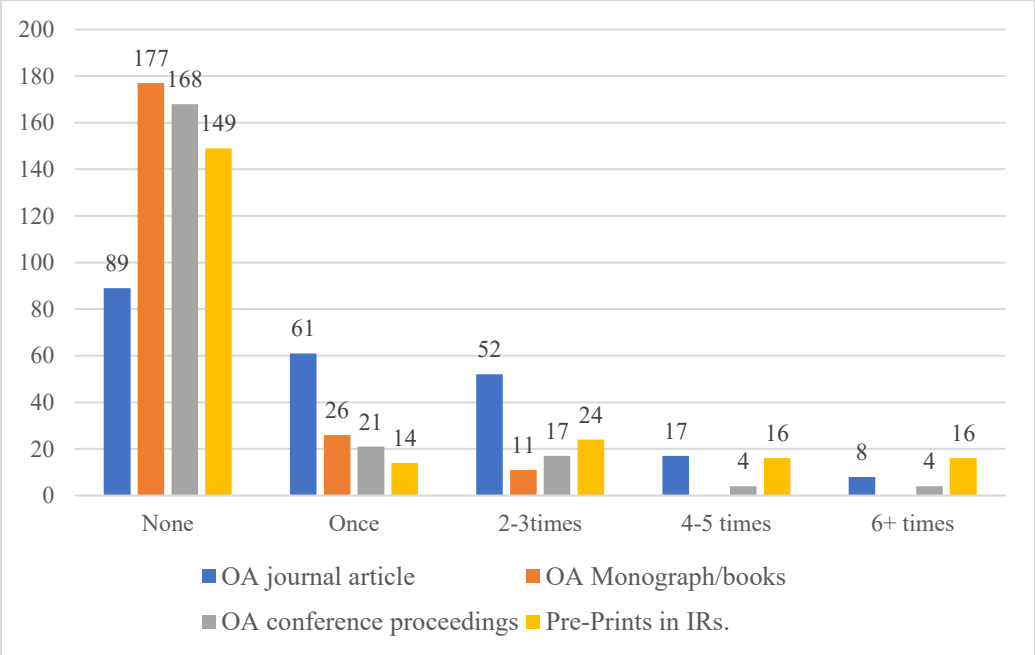

Figure 7. Frequency of OA publishing in the last three years

Summary of respondents' OA publishing frequency

Findings showed that about half of the respondents (49.8%) have published 1-3 times in OA journals. The respondents who have published in OA outlets, have mainly done so in OA journals. Whereas many respondents (77.6%) have never published in OA monographs, only 37 participants (16.2%) have published one to three times in OA monographs. This suggests that OA monograph publishing is not popular in most of the HASS disciplines, and not even common in the humanities where book publishing is the norm.

4.3.1.3 OA Publishing Extent

Respondents were asked to indicate the percentages of their scholarly outputs published in four OA outlets (i.e., OA journals, OA conference proceedings, OA monographs, and IRs) in the past three years. Respondents selected one of these five options: none, 1-25%, 26-50%, 51-75%, and 76-100%. To identify the extent to which respondents have published in specific OA outlets in the last three years, a frequency count analysis of their responses was carried out and presented in Figure 8. Results showed that 83 respondents (36.4%) have published none of their research outputs in OA journals, while only 77 participants (33.8%) published 1-25% of their research in OA journals. Furthermore, 172 participants (81.8%) have published none of their research in OA monographs, while only 24 participants (11.4%) have published 1-25% of the scholarly works in OA monographs.

Regarding publishing in OA conference proceedings, 23 respondents (10.1%) have published 1-25% of their scholarly outputs, while the majority 160 respondents (77.3%) have published none of their research outputs in OA conference proceedings in the last three years. Findings also showed that 139 respondents (66.5%) have deposited none of their research outputs in IRs, while only 23 respondents (10.1%) have deposited 1-25% and 76-100% of their scholarly outputs in IRs in the last three years. Overall, the percentages of respondents' scholarly outputs published in OA outlets is still very low.

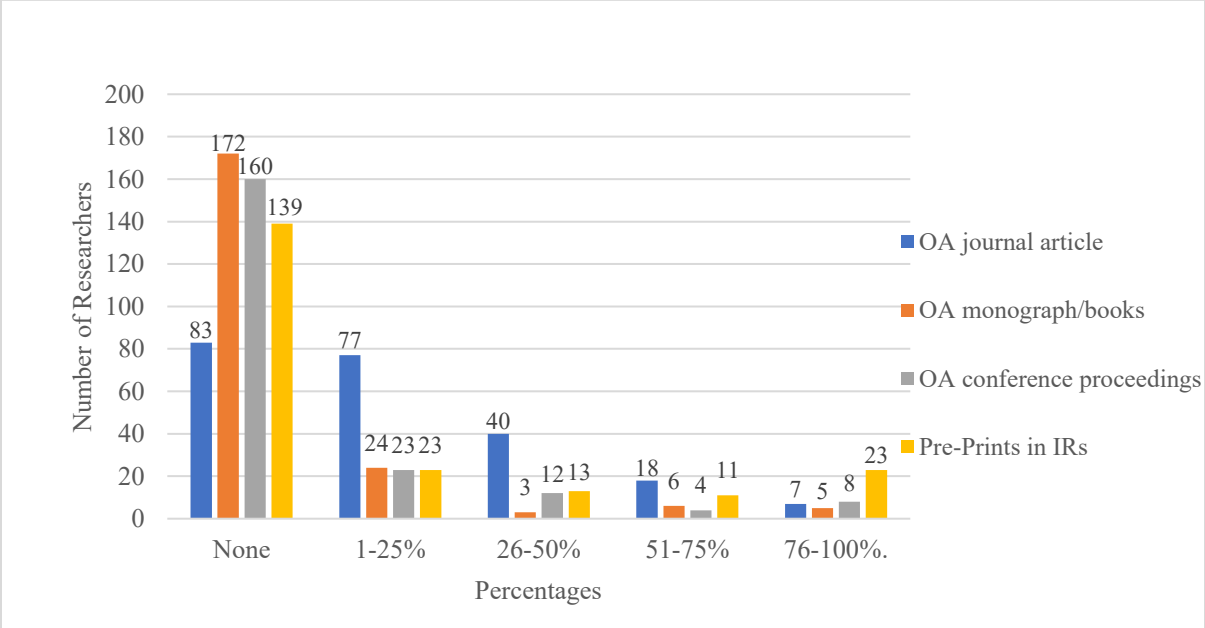

Figure 8. Extent of scholarly outputs published in OA outlets in last three years

Summary of respondents' OA publishing extent

Results showed that most of the respondents have published a lower percentage of their research outputs in OA outlets. Although some have published in OA journals, most of the respondents (75.4%) have never published in OA monographs. This may be because OA monograph or book publishing is predominant in the humanities, and not very common in social sciences which are the majority in this study. The same applies to OA conference proceedings as only 10.1% of the respondents have published their works therein. While most of the respondents have published little of their research outputs in OA journals, OA monographs and OA conference proceedings, only a few respondents have deposited 1-25% and 76-100% of their preprints in IRs. Overall, the percentages of research outputs published in OA is still very low.

4.3.2 Benefit Factors

The benefit factors were measured with three scales: *visibility, prestige,* and *altruism*. The scale on *visibility* was measured by adapting three items of the scale named *perceived visible advantage* in the study conducted by Park (2007). The items focused on questions about the benefits of publishing OA, which includes making authors work more readily available, increasing readership, and making their work wide-open to everybody. The scale on *prestige* was calculated by combining four items adapted from a previously validated scale named as *image* (Kankanhalli et al., 2005). The scale on *altruism* was measured by combining two items adapted from studies designed to measure altruism and organizational citizenship behaviour (Guinot et al., 2015; Podsakoff et al., 1990), and four items from a study measuring altruism in electronic knowledge contribution (Kankanhalli et al., 2005).

Factor Analysis

SPSS was used to perform an exploratory factor analysis (i.e., principal components analysis with varimax rotation). According to Comrey and Lee (2013), factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent. Hence, 0.55 (i.e., good) was set as a cut-off for inclusion of an item in a factor. As noted in Table 4.14, factor loadings exceeded the acceptable limit.

Table 4.14: Factor loadings for benefit factors

Visibility (N=223)		Component 1
1	Publishing OA allows the products of research to become readily available	0.813
2	OA publishing increase readership of research outputs	0.802
3	Publishing OA makes my work become wide open to everybody	0.790
Prestige (N=227)		
1	Sharing research through open access publishing improves prestige within my discipline	0.770
2	Participants in the discipline who share their research through open access publishing have more prestige than those who do not.	0.728
3	Sharing research through open access publishing improves others recognition of me.	0.640
4	When I share my research through open access publishing, my colleagues respect me.	0.642
Altruism (N=225)		
1	I enjoy sharing my research with others through open access publishing	0.808
2	I enjoy helping others by sharing my scholarly work through open access publishing	0.876
3	It feels good to help other participants by publishing in open access	0.832
4	Sharing my knowledge with others through open access publishing gives me pleasure	0.723
5	I willingly help other participants who have limited access to research by publishing OA	0.754
6	I am always ready to lend a helping hand to other participants by publishing OA	0.695

Reliability

Reliability analysis was performed on the independent measures used to calculate overall *benefit factors* (i.e., *visibility, prestige,* and *altruism*). Although, previous studies have shown high reliability coefficients for the adapted scales, this study further carried out reliability analysis for the combined measure of *benefit factors*. As presented in Table 4.15, the value of Cronbach's α well exceeded the acceptable range of 0.65-0.70 (DeVellis, 1991).

Table 4.15: Reliability results for benefit factors

Reliability Statistics	α	N
All benefit factors	0.916	13
Visibility	0.878	3
Prestige	0.842	4
Altruism	0.937	6

Descriptive statistics

Descriptive statistics for the three scales measuring *benefit factors* are presented below. For *visibility* and *prestige* factors, respondents selected one of the following Likert scale: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.

4.3.2.1 Visibility

Respondents were asked to indicate the extent to which they agree or disagree with three statements on one of the benefits of publishing OA (i.e., *visibility*). As shown in Table 4.16, most of the respondents agreed or strongly agreed that publishing OA allows the products of research to become readily available (M=4.42, SD=0.798), and wide-open to everybody (M=4.31, SD=0.901).

Table 4.16: Descriptive statistics for visibility

Question	N	Minimum	Maximum	Mean	Std. Deviation
Publishing OA allows the products of research to become readily available	226	1	5	4.42	0.798
Open access publishing increases the readership of research outputs	227	1	5	4.20	0.904
Publishing OA makes research work become wide open to everybody	226	1	5	4.31	0.901

4.3.2.2 Prestige

The scale on *prestige* asked participants to indicate the extent to which they agree or disagree on whether or not publishing OA improve or increase their prestige. As shown in Table 4.17, although the average means of the responses are relatively low, about half of the respondents (46.3%) agreed or strongly agreed that publishing OA improves others' recognition of them (M=3.33, SD=.991).

Table 4.17: Descriptive statistics for prestige

Question	N	Minimum	Maximum	Mean	Std. Deviation
Sharing research through open access publishing improves my prestige within my discipline	227	1	5	2.90	0.907
Researchers in my discipline who share their research through open access publishing have more prestige than those who do not	227	1	5	2.44	0.857
Sharing research through open access publishing improves others' recognition of me	227	1	5	3.33	0.991
When I share my research through open access publishing, my colleagues respect me	227	1	5	2.94	0.883

4.3.2.3 Altruism

The item for *altruism* asked respondents to indicate their approach to work as researchers, and personal (intrinsic) motivation for publishing OA. Respondents selected one of the following Likert scales: (1) Very untrue of me, (2) Untrue of me, (3) Neutral, (4) True of me, (5) Very true of me. As noted in Table 4.18, many respondents enjoy sharing their research with others (M=3.93, SD=0.973) and enjoy helping others (M=3.93, SD=0.926) through OA publishing.

Table 4.18: Descriptive statistics for altruism

Question	N	Minimum	Maximum	Mean	Std. Deviation
I enjoy sharing my research with others through open access publishing	228	1	5	3.93	0.973
I enjoy helping other participants by sharing research through open access publishing	227	1	5	3.93	0.926
It feels good to help other participants by publishing in open access	227	1	5	3.87	0.934
Sharing my research with others through open access publishing gives me pleasure	226	1	5	3.65	0.950
I willingly help other researchers who have limited access to research by publishing OA	225	1	5	3.68	1.038
I am always ready to lend a helping hand to other researchers by publishing OA	226	1	5	3.45	1.006

Summary of benefit factors regarding OA publishing

Benefits factors measured are *visibility, prestige,* and *altruism*. Factor loadings of the three components exceeded the acceptable limit of 0.55. The reliability analysis was measured using Cronbach α, each factor exceeding the acceptable range of 0.65-0.70. This shows that the items and factors were valid and reliable. Although most of the respondents agreed or strongly agreed that OA makes their research outputs more visible and open to readers (M=4.31, SD=.901), less than half (46.3%) agreed or strongly agreed that OA publishing improves other's recognition of them (i.e., *prestige*). However, most of the participants are altruistic about OA publishing as they enjoy sharing their research with others (M=3.93, SD=0.926).

4.3.3 Institution-Based Trust

Institution-based trust was measured by adapting the scales used by Song et al. (2018). These are *situational normality* and s*tructural assurance*. *Situational normality* consists of four items while *structural assurance* consists of three items, adapted from existing validated scales (McKnight & Chervany, 2001; Ozlati, 2015).

Factor Analysis

To investigate the construct validity and appropriateness of the adapted scales for this study, SPSS was used to perform an exploratory factor analysis (i.e., principal components analysis with varimax rotation). According Comrey and Lee (2013) factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent. Hence, 0.55 was set as a cut-off for inclusion of an item in a factor. As noted in Table 4.19 factor loadings of the two scales exceeded the acceptable limit.

Table 4.19: Factor loadings for institution-based trust factors

Situational Normality (N=225)		**Component**
		1
1	The steps required to publish in OA publishing platforms are similar to other traditional publishing platforms	0.775
2	The nature of the interactions with the OA publishing platforms is similar to other publishing platforms	0.813
3	The OA publishing platforms operate like other publishing platforms	0.763
4	The peer-review quality of open access publishing outlets is of a similar standard when compared with other traditional publishing platforms	0.607
	Structural Assurance (N=226)	
1	I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the OA publishing platforms	0.757
2	I feel that encryption and/or other security and privacy policies in OA publishing platforms can make it safe for me to use the OA publishing platforms	0.867
3	The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system	0.889

Reliability

Reliability analysis was performed on the independent measures used to calculate *institution-based trust* (i.e., *situational normality* and s*tructural assurance*). Reliability analysis was also performed for the composite measure of *institution-based trust*. As presented in Table

4.20, the value of Cronbach's α well exceeded the minimum acceptable range of 0.65-0.70 (DeVellis, 1991) in both measures.

Table 4.20: Reliability results for institution-based trust

Reliability Statistics	**α**	**N**
All Institution-Based Trust	0.841	7
Situational Normality	0.845	4
Structural Assurance	0.829	3

Descriptive statistics

This section provides the descriptive statistics of each of the factors measuring institution-based trust (i.e., *situational normality* and s*tructural assurance)*. Respondents selected one of these Likert scales: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.

4.3.3.1 Situational normality

Participants were asked to indicate their agreement with publishing situations of OA platforms. As noted in Table 4.21, the item that peer-review quality of OA publishing outlets is of a similar standard when compared with other traditional publishing platforms (M=3.29, SD=1.111) has the highest mean. This indicates that many of the participants consider the quality of OA outlets as equal to the non-OA outlets. Only few others agreed that the nature of interactions with OA publishing platforms is like other traditional publishing platforms (M=3.23, SD=1.025). This suggests that respondents do not consider the publishing standards in OA platforms different from the traditional publishing platforms.

Table 4.21: Descriptive statistics for situational normality

Question	N	Minimum	Maximum	Mean	Std. Deviation
The steps required to publish in OA publishing platforms are similar to other traditional publishing platforms	226	1	5	3.19	1.047
The nature of the interactions with OA publishing platforms is similar to other traditional publishing platforms	226	1	5	3.23	1.025
The OA publishing platforms operate like other traditional publishing platforms	226	1	5	3.03	1.019
The peer-review quality of OA publishing outlets is of a similar standard when compared with other traditional publishing platforms	225	1	5	3.29	1.111

4.3.3.2 Structural assurance

The *structural assurance* items asked respondents to indicate whether OA publishing platforms have relevant structures that might encourage them to publish in such platforms. As noted in Table 4.22, there is a close similarity in their responses. However, the item implying that the security and copyright protection in OA publishing platforms can provide a robust and safe environment to use the system had higher mean score (M=3.41, SD=0.850). This suggests that many respondents consider OA platforms to be safe for publishing.

Table 4.22: Descriptive statistics for structural assurance

Question	N	Minimum	Maximum	Mean	Std. Deviation
I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the platforms	227	1	5	3.32	0.910
I feel that encryption and/or other security and privacy policies in OA publishing platforms can make it safe for me to use the system	227	1	5	3.40	0.800
The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system	226	1	5	3.41	0.850

Summary of respondents' institution-based trust regarding OA publishing

Institution-based trust was measured with two factors: *situational normality and structural assurance.* Factor loadings of the two components exceeded the acceptable limit of 0.55. The reliability analysis was measured using Cronbach α, each factor exceeding the acceptable range of 0.65-0.70. This shows that the items and factors were valid and reliable. For *situational normality*, results showed that respondents regard the peer-review quality of OA outlets to be of similar standards to the traditional publishing platforms (M=3.29, SD=1.111). For *structural assurance*, most of the respondents agreed that security and copyright protection of OA publishing platforms are ensured (M=3.41, SD=0.850). This suggests that to a large extent, many respondents trust OA publishing operations, and systems.

4.3.4 Perceived Quality

The perceived quality of OA publishing outlets was measured using two variables: *perceived impact* and *perceived content quality.* These were adapted from studies measuring intention to publish in OA and non-OA journals (Moksness & Olsen, 2017, 2020). The items were adapted to measure respondents' perceptions of quality of OA publishing outlets, and the extent to which these perceptions influence their OA publishing practices. Each of the scales has three items.

Factor Analysis

SPSS was used to perform an exploratory factor analysis (i.e., principal components analysis with varimax rotation). According Comrey and Lee (2013) factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent. Hence, 0.55 ("good") was set as a cut-off for inclusion of an item in a factor. As noted in Table 4.23, factor loadings of two factors show unidimensionality and exceeded the acceptable limit.

Table 4.23: Factor loading results for perceived quality

		Component
Perceived Impact (N=225)		1
1	It is important that the OA journal/monograph/proceedings have a high impact factor.	0.762
2	It is important that the OA journal/monograph/proceedings enjoy high status within its field of research.	0.774
3	It is important that the OA journal/monograph/proceedings are prestigious journal to publish in.	0.755
	Perceived Content Quality (N=226)	
1	It is important that the OA journal/proceedings normally publish very good quality articles.	0.871
2	It is important that the OA journal/proceedings publish articles of consistent quality.	0.854
3	It is important that the OA journal/monograph/proceedings offers very reliable peer review.	0.838

Reliability

Reliability analysis was performed on the independent measures used to calculate *perceived quality* factors (i.e., *perceived impact* and *perceived content quality*). Reliability analysis was also performed for the combined measure of *perceived quality* and *perceived content quality.* As presented in Table 4.24, the value of Cronbach's α well exceeded the

acceptable range of 0.65-0.70 (DeVellis, 1991) in both measures. Hence, the measures can be said to be very reliable.

Table 4.24: Reliability results for perceived quality

Reliability Statistics	**α**	**N**
All Perceived Quality factors	0.843	6
Perceived Impact	0.826	3
Perceived content quality	0.921	3

Descriptive statistics

This section provides the descriptive statistics of each of the factors measuring *perceived quality* (i.e., *perceived impact* and *perceived content quality*). Participants selected one of these Likert scales: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree.

4.3.4.1 Perceived impact

Perceptions of quality of OA publishing has been reported in literature as important determinant of researchers' OA publishing practices. Hence, respondents were asked to indicate the importance of impact when choosing OA outlets to publish. Table 4.25 shows that it is important that OA outlets enjoy high status within its field of research (M=4.10, SD=0.787). This is followed by the importance of prestige of OA outlets (M=3.91, SD=0.888).

Table 4.25: Descriptive statistics for perceived impact

	N	Minimum	Maximum	Mean	Std. Deviation
It is important that the OA journal/monograph/proceedings have a high impact factor	227	1	5	3.78	0.890
It is important that the OA journal/monograph/proceedings enjoy high status within its field of research	227	2	5	4.10	0.787
It is important that the OA journal/monograph/proceedings are prestigious to publish in	227	1	5	3.91	0.888

4.3.4.2 Perceived content quality

Participants were asked to indicate their agreement with the importance of content quality of OA publishing outlets. As shown in Table 4.26, it is more important that OA outlets offer very reliable peer-review (M=4.54, SD=.646). Other items also have high mean scores indicating the importance of publishing with consistent quality.

Table 4.26: Descriptive statistics for perceived content quality

	N	Minimum	Maximum	Mean	Std. Deviation
It is important that the OA journal/monograph/proceedings normally publish very good quality articles	227	2	5	4.46	0.673
It is important that the OA journal/monograph/proceedings publish articles of consistent quality	226	1	5	4.45	0.666
It is important that the OA journal/monograph/proceedings offer very reliable peer review	227	2	5	4.54	0.646

Summary of participants' perceived quality of OA publishing

The perceived quality of OA publishing was measured with two factors: *perceived impact* and *perceived content quality*. Factor loadings of the two components exceeded the acceptable limit of 0.55. The reliability analysis was measured using Cronbach α, each factor exceeding the acceptable range of 0.65-0.70. This shows that the items and factors were valid and reliable. Results showed that it is important that OA outlets are of high status and that they are prestigious to publish in. However, it is more important that OA outlets offer reliable peer-review. The result suggested that participants value content quality over perceived impact of OA publishing outlets.

4.3.5 Disciplinary Norm

Disciplinary norm was operationalised in this study by adapting Kankanhalli et al. (2005)'s factor for pro-sharing norm. Kankanhalli et al., (2005) defined pro-sharing norm as "prevalence of norms that are intended to facilitate knowledge sharing in the organization" (p.123). Since scholarly communication is a form of knowledge sharing, items in *pro-sharing norm* were adapted in this study, and the scale was renamed as *disciplinary norm* to fit with the

focus of this study. Although the scale has been previously validated, adapted items and renamed scale was subjected to further analysis to verify validity and reliability of the scale.

Factor Analysis

SPSS was used to perform an exploratory factor analysis (i.e., principal components analysis with varimax rotation) to check the appropriateness of the adapted items to the present study. According Comrey and Lee (2013) factor loadings of 0.40, 0.55, and 0.70 can be considered as poor, good, and excellent, respectively. Hence, 0.55 ("good") was set as a cut-off for inclusion of an item in a factor. As noted in Table 4.27, factor loadings for the first item (i.e., *There is a norm of cooperation for OA publishing in my discipline)* and the second item (i.e., *There is a norm of research collaboration in OA journals/monograph/proceedings in my discipline)* exceeded the acceptable minimum requirement of 0.55.

How the third item for *disciplinary norm* (i.e., *There is a norm of valuing OA publishing in my discipline*) and the fourth item (i.e., *There is a norm of citing OA articles in my discipline*) had slightly lower factor loadings than the set cut-off of 0.55. However, since each of these items are close to the cut-off, they were retained and used for further analysis. This is consistent with previous studies which retained items with loadings greater than 0.40 (e.g., Cassidy, Hestenes, Hegde, Hestenes, & Mims, 2005; Kankanhalli et al., 2005).

Table 4.27: Factor loadings for disciplinary norm

	Disciplinary Norm (N=227)	**Component**
		1
1	There is a norm of cooperation for OA publishing in my discipline	0.849
2	There is a norm of research collaboration in OA journals/monograph/proceedings in my discipline	0.813
3	There is a norm of valuing OA publishing in my discipline	0.507
4	There is a norm of citing OA articles published in my discipline	0.535

Reliability

Reliability analysis was performed on the independent measure used to calculate *disciplinary norm.* As presented in Table 4.28, the value of Cronbach's α well exceeded the acceptable minimum acceptable range of 0.65-070 (DeVellis, 1991). Hence, the variable is very reliable.

Table 4.28: Reliability result for disciplinary norm

Reliability Statistics	**α**	**N**
Disciplinary Norm	0.800	4

Descriptive statistics

Table 4.29 below presents the four items measuring *disciplinary norm.* Participants selected one of these Likert scales: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree. The mean score showed that there is a willingness to promote OA publishing in the HASS disciplines (M=3.15, SD=1.096). Whereas the "norm of OA publishing in my discipline" has the lowest mean score (M=2.42, SD=0.942), indicating that there is no norm for OA publishing in many HASS disciplines.

Table 4.29: Descriptive statistics for disciplinary norm

	N	Minimum	Maximum	Mean	Std. Deviation
There is a norm of OA publishing in my discipline	228	1	5	2.42	0.942
There is a norm of research collaboration in OA journals/monographs/proceedings in my discipline	227	1	5	2.48	0.947
There is a willingness to promote OA publishing in my discipline	227	1	5	3.15	1.096
There is a norm of citing articles published in OA in my discipline	227	1	5	2.98	1.068

Summary of disciplinary norms regarding OA publishing

Factor loadings of the three components exceeded the acceptable limit of 0.55. The reliability analysis was measured using Cronbach α, each factor exceeding the acceptable range of 0.65-0.70. Result showed that there is a willingness to promote OA publishing among respondents, but there is yet to be a norm for OA publishing in the HASS disciplines. Respondents' willingness to promote OA publishing indicates that they are moving slowly towards that direction, but it is not yet a norm in their disciplines.

4.4 Hypotheses Testing

To answer research question 2 (i.e., *what factors influence the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada?*), the hypotheses described in the previous chapter were tested using Pearson Product-Moment Correlation (PPMC) and multiple regression analysis (MRA). The PPMC coefficient *r* was used to measure the relationships between the independent and dependent variables. The PPMC is the most widely used index of relationships and it is relevant to this study as it tests linear relationships (positive or negative) between two variables but does not test significant differences among variables (Rosenthal & Rosnow, 2008). Correlation analysis was first carried out to check associations among the identified factors, but conclusion was based on the regression analysis which helped to check the influence of independent variables over the dependent variable.

Correlation was used to determine the degree of association among the variables, regression was used for predicting (Asuero, Sayago, & González, 2006) factors influencing OA publishing practices. The MRA was used to rigorously test the hypotheses while controlling for all variables in the model. Conversely, using only correlation analysis could make the results unreliable for drawing conclusions. Hence, the MRA beta results were used to draw conclusions on the hypotheses testing. However, caution should be taken when interpreting the outcome of the hypotheses testing to imply causality. Correlation and regression analyses do not imply causality, but only help to suggest relationships and influencing factors, but these do not absolutely suggest causal effect. As noted by Asuero et al., (2006), "measure of statistical relationship, such as a correlation coefficients should never be used to deduce a causal connection" (p.56). Hence, the quantitative data and findings should be used for understanding relationships between variables, but not to be understood as causal factors.

The three dimensions measuring OA publishing practice (i.e., *OA publishing experience, OA publishing frequency* and *OA publishing extent*) were combined as one using the transform function in SPSS. One of the purposes of the transform function in SPSS is to help combine multiple items in a scale or multiple scales measuring the same factor as one to enable further analysis. This function was employed to combine the three factors measuring the dependent variable to enable relationships measurement among independent and dependent variables. This also allowed for MRA to examine the influence of the independent variables on the dependent variable. Combining the dimensions measuring OA publishing practice is consistent with the

approach followed in previous studies measuring similar factor, which was explicitly described in operationalisation of the study variable (See section 3.6.1.1).

4.4.1 Benefit factors and OA publishing practices

Hypotheses 1, 2 and 3 were concerned with the benefit factors that influence OA publishing practices of participants. Hypothesis 1 states that "*Visibility is positively related with open access publishing practices of researchers.*" Hypothesis 2 states that "*prestige is positively related with open access publishing practices of researchers.*" And hypothesis 3 states that "*altruism is positively related with open access publishing practices of researchers.*" As noted in Table 4.30, there was a statistically significant positive correlation between the benefit factors and *OA publishing practices.* Respondents' altruism is more positively correlated with their OA publishing practices. The results of the correlations suggested that as respondents' altruism (intrinsic benefit) increased, so did their OA publishing practice. Similarly, as respondents' expected visibility and prestige of OA publishing outlets increased, so did their OA publishing practice.

Table 4.30: Correlations between benefit factors and OA publishing practices (*p < .05, **p < .01)

Benefit Factors Independent Variables	Correlation	N
Visibility	0.252**	228
Prestige	0.140*	227
Altruism	0.352**	228

Multiple regression analysis (MRA) was then used to test the hypotheses, while controlling for the effects of other independent variables in the model. Table 4.31 shows the MRA results of the influence of *benefit factors* on the dependent variable (i.e., *OA publishing practices*). An Adjusted R Square of .131 (F=12.339, $p < 0.000$) means that 13.1% of the variance in OA publishing practices can be accounted for by the benefit factors. In particular, p values showed statistical significance for *altruism* ($p= 0.000$). This indicates that only *altruism* has statistically significant contribution on respondents' OA publishing practices. The standardized coefficient values of the significant factor indicate that for every unit increase in *altruism*, there is a 0.33 increase in the degree of respondents' OA publishing practices. Overall, MRA indicated that respondents who are altruistic have published more in OA outlets. Based on the MRA results, hypotheses 1 and 2 are rejected, while hypothesis 3 is accepted.

Table 4.31: Multiple regression analysis results of benefit factors

Independent Variables	Standardized Coefficients β	t	N	Sig.
Visibility	0.139	1.951	227	0.052
Prestige	-0.075	-1.028	227	0.305
Altruism	0.**331**	4.457	227	**0.000**
Adjusted R Square	*0.131*			
Model F	*12.339*			

4.4.2 Institution-based trust and OA publishing practices

Hypotheses 4 and 5 were concerned with *institution-based trust* factors that influence OA publishing practices of the participants. Hypothesis 4 states that "*situational normality is positively related with open access publishing practices of researchers*", while Hypothesis 5 states that "*structural assurance is positively related with open access publishing practices of researchers."* To measure the relationship between these variables and the dependent variable, Pearson Moment Correlation Coefficient (PMCC) correlation analysis was carried out in SPSS.

As noted in Table 4.32, *situational normality* is positively correlated with OA publishing practices of participants (r = 0.310). In other words, an increase in respondents' perceptions of safety and standards (e.g., peer-review) of OA outlets would increase their OA publishing practices. Similarly, correlation results further showed a positively significant correlation between *structural assurance* and respondents' OA publishing practices (r = 0.203). This means that an increase in participants' belief that relevant structures and contextual conditions of OA publishing platforms (e.g., regulations and guarantees) are in place, will lead to an increase in their OA publishing practices.

Table 4.32: Correlations between institution-based trust and OA publishing practices (*p < .05, **p < .01)

Institution-Based Trust independent variables	Correlation	N
Situational Normality	0.310**	226
Structural Assurance	0.203**	227

Multiple regression analysis (MRA) was then used to test the hypotheses, while controlling for the effects of other independent variables in the model. Table 4.33 presents the MRA results of the institution-based trust factors on the dependent variable (i.e., *OA publishing practices*). An Adjusted R Square of .106 (F=13.281, p < 0.000) means that 10.6% of the variance in OA publishing practices can be accounted for by *institution-based trust*. In particular, p values showed statistical significance for *situational normality* (p= 0.000). This indicates that

only *situational normality* has statistically significant contribution on respondents' OA publishing practices. The standardized coefficient values of the significant factor indicates that for every unit increase in *situational normality*, there is a 0.26 increase in the degree of respondents' OA publishing practices.

The standardized regression coefficient of *structural assurance* on OA publishing practices was found to be not significant. Since only one of the factors showed statistically significant effect, hypothesis 4 is accepted, while hypothesis 5 is rejected.

Table 4.33: Regression of institution-based trust on OA publishing practices

Independent Variables	**Standardized Coefficients β**	**t**	**N**	**Sig.**
Situational Normality	0.267	3.893	224	**0.000**
Structural Assurance	0.110	1.598	225	0.111
Adjusted R Square	***0.106***			
Model F	***13.281***			

4.4.3 Perceived quality and OA publishing practices

Hypotheses 6 and 7 were concerned with the perceived quality factors that may influence OA publishing practices of participants. Hypothesis 6 states that "*Researchers*' *perceived impact is positively related with their open access publishing practices*", while Hypothesis 7 states that "*Researchers' perceived content quality is positively related with their open access publishing practices.*" To measure the relationship between these two variables and the dependent variable, Pearson Moment Correlation Coefficient (PMCC) correlation analysis was carried in SPSS.

As noted in Table 4.34, although *perceived impact* positively correlated with OA publishing *(r* =0.066), results showed that it is not statistically significant (*p*= 0.322). Furthermore, correlation result suggested that respondents' *perceived content quality (r* =0.147) positively correlated with their OA publishing practices. This implies that as respondents' perception of content quality of OA publishing outlets increased, so did their OA publishing practices.

Table 4.34: Correlations between perceived quality and OA publishing practices (*p < 0.05)

Perceived Quality Independent variables	**Correlation**	**N**
Perceived Impact	0.066	227
Perceived Content Quality	0.147*	227

Multiple regression analysis (MRA) was then used to rigorously test the hypotheses, while controlling for the effects of other variables in the model. Table 4.35 presents the MRA results of *perceived quality* factors on the dependent variable (i.e., *OA publishing practices*). An Adjusted R Square of 0.022 (F= *2.*475, $p < 0.000$) means that 2.2% of the variance in *OA publishing practices* can be accounted for by respondents' *perceived quality*. In particular, p values showed statistical significance for *perceived content quality* (p= 0.048). This indicates that only *perceived content quality* of OA publishing outlets has statistically significant contribution on respondents' OA publishing practices. The standardized coefficient values of the significant factor indicate that for every unit increase in *perceived content quality*, there is a 0.14 increase in the degree of respondents' OA publishing practices.

The standardized regression coefficient of *perceived impact* on *OA publishing practices* was found to be not significant. Since only one of the factors showed statistically significant effect, hypothesis 6 is rejected, while hypothesis 7 is accepted.

Table 4.35: Regression of perceived quality on OA publishing practices

Independent Variables	**Standardized Coefficients β**	**t**	**N**	**Sig.**
Perceived impact	0.007	0.091	225	0.928
Perceived content quality	0.144	1.988	225	**0.048**
Adjusted R Square	*0.022*			
Model F	*2.475*			

4.4.4 Disciplinary norm and OA publishing practices

Hypothesis 8 states that "*Disciplinary norm is positively related with researchers' open access publishing practices."* To measure the relationship between this variable and the dependent variable (i.e., *OA publishing practices)*, correlation analysis was carried in SPSS using Pearson Product Moment Correlation (PPMC). Table 4.36 reveals that there is a significant positive correlation between *disciplinary norm* and OA publishing practices of respondents (r =0.244). This implies that as the norms for publishing OA in various disciplines increased, so did their OA publishing practices.

Table 4.36: Correlations between disciplinary norm and OA publishing practices (*p < 0.05, **p < 0.01)

Perceived quality independent variables	**Correlation**	**N**
Disciplinary Norm	0.244**	228

Multiple regression analysis (MRA) was then used to rigorously test the hypothesis, while controlling for the effects of other independent variables in the model. Table 4.37 shows the MRA results of *disciplinary norm* on the dependent variable (i.e., *OA publishing practices*). An Adjusted R Square of 0.059 (F= *14.293*, $p < 0.000$) means that 5.9% of the variance in *OA publishing practices* can be accounted for by *disciplinary norm*. The standardized regression coefficient of *disciplinary norm* on OA publishing practices was found to be significant. This indicates that for every unit increase in *disciplinary norm*, there is a 0.44 increase in the degree of participants' OA publishing practices. Hence, hypothesis 8 is accepted.

Table 4.37: Regression of disciplinary norm on OA publishing practices

Independent Variable	**Standardized Coefficients β**	**t**	**N**	**Sig.**
Disciplinary Norm	0.443	3.781	226	**0.000**
Adjusted R Square	*0.059*			
Model F	*14.293*			

4.4.5 Combined independent variables and OA publishing practices

To measure hypothesis 9, multiple regression analysis was used to examine the influence of all the independent variables on the dependent variable. Hypothesis 9 states that, "*Benefit factors, institutional-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers*." As noted in Table 4.38, MRA results showed an Adjusted R Square of .174 (F=6.899, $p < 0.000$) which means that 17.4% of the variance in dependent variable can be accounted for by all the independent variables. Three factors were found to have statistically significant influence on the dependent variable. P values showed statistical significance for *altruism* ($p= 0.000$), *situation normality* ($p= 0.029$) and d*isciplinary norm* ($p= 0.034$), which indicates that only these variables have combined statistically significant contribution on respondents' OA publishing practices.

The standardized coefficient values of the significant factors indicate the amount of increase or decrease in the degree of OA publishing practices of respondents by one unit increase in the factors. For instance, for every unit increase in *altruism*, there is a 0.27 increase in the degree of respondents' OA publishing practices. Similarly, for every unit increase in *situation*

normality of OA publishing platforms, there is 0.16 increase in respondents' OA publishing practices. Lastly, for every unit increase *in disciplinary norm,* there is 0.17 increase in respondents' OA publishing practices. Since only three of the variables showed statistically significance effects, hypothesis 9 is partially supported.

Table 4.38: Multiple regression analysis and VIF results (*p < .05, **p < .01)

Independent Variables	**Standardized Coefficients β**	**t**	**N**	**Sig.**	**Variance Inflation Factor**
Visibility	0.048	0.654	226	0.514	1.446
Prestige	-0.132	-1.675	225	0.095	1.682
Altruism	**0.276**	3.560	226	**0.000**	1.629
Situational Normality	**0.161**	2.205	224	**0.029**	1.449
Structural Assurance	0.015	0.211	225	0.833	1.335
Perceived Impact	0.091	1.327	225	0.186	1.276
Perceived Content Quality	0.028	0.411	225	0.681	1.297
Disciplinary Norm	**0.165**	2.138	226	**0.034**	1.615
Adjusted R Square	*.174*				
Model F	*6.899*				

Since the multiple linear regression model was used to test the combined influence of all the independent variables on the dependent variable, the test of multicollinearity is therefore important. Test of multicollinearity explains whether the predictor variables are highly correlated with each other, and if it does, it creates a problem with the interpretation and reliability of the regression model (Alin, 2010). To test for multicollinearity, the variance inflation factor (VIF) values of the predictor variables (i.e., all independent variables) were examined. If the "VIFs are not unusually larger than 1.0, then multicollinearity is not a problem" (Mansfield & Helms, 1982, p. 160). The VIF values were calculated in SPSS by putting outcome variable (i.e., *OA publishing practices*) and predictor variables (i.e., independent variables) in the linear regression model calculation, with VIF option selection. As shown in Table 4.38 above, VIF values of all the variables are below 2.0. Hence, there is no multicollinearity in the regression model. As such, the assumptions in the regression model are met.

Furthermore, to test for normality, that is, checking if the residuals of the regression follow a normal distribution, a normal Predicted Probability (P-P) plot was examined. Figure 9 shows that the residuals of the regression conform to the diagonal normality line in the P-P plot, and it represents a normal distribution.

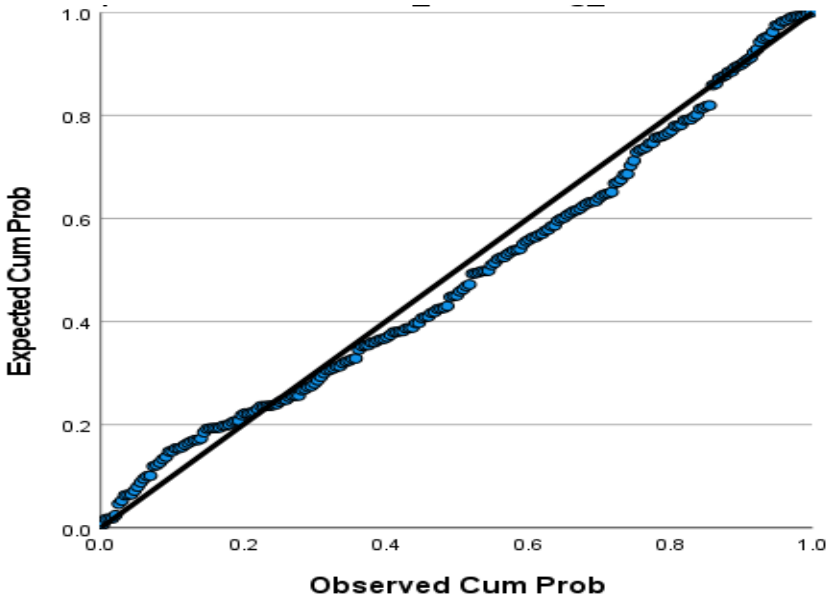

Figure 9. P-P plot of regression standardized residuals

In addition, to check an assumption of whether the residuals (i.e., the independent variables) are well distributed, the test of homoscedasticity was carried out with scatterplot of the residuals. Figure 10 shows the spread of a randomly distributed data, confirming the equality of variances.

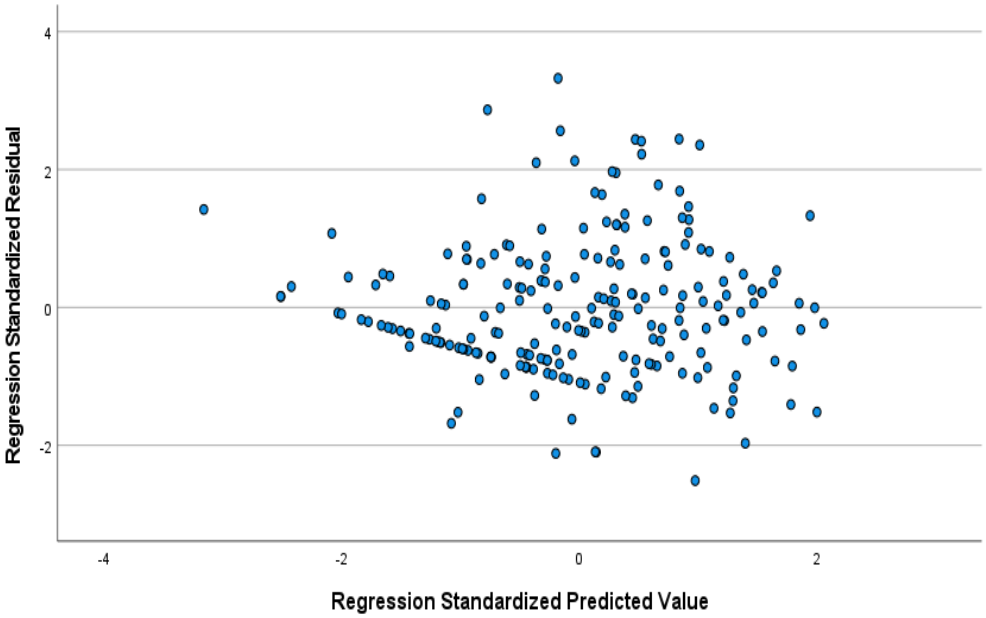

Figure 10. Scatterplot checking homoscedasticity

4.4.6 Summary of hypotheses testing

Table 4.39 presents the summary of the nine hypotheses tested in this study, and whether the predictions are supported by the analysis result. The MRA beta results showed that four hypotheses (H_3, H_4, H_7 and H_8) were supported and accepted, and four hypotheses (H_1, H_2, H_5 & H_6) were not supported and thus rejected. The last hypothesis (H_9), which tested the combined influence of all the independent variables on the dependent variable was partially supported. The results from the MRA were not entirely consistent with the correlation analysis. However, the conclusion on the hypotheses testing was based on MRA beta results and not on the correlation results.

Table 4.39: Summary table of hypotheses testing

	Hypotheses	**Results**
H_1	Visibility is positively related with open access publishing practices of researchers	Not supported
H_2	Prestige is positively related to researchers' open access publishing practices	Not supported
H_3	Participants' altruism is positively related with researchers' open access publishing practices	Supported
H_4	Situational normality is positively related with open access publishing practices of researchers.	Supported
H_5	Structural assurance is positively related with open access publishing practices of researchers	Not supported
H_6	Perceived impact is positively related with researchers' open access publishing practices	Not supported
H_7	Perceived content quality is positively related with open access publishing practices of researchers	Supported
H_8	Disciplinary norm is positively related with open access publishing practices of researchers	Supported
H_9	Benefit factors, institution-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers	Partially supported

H_9 was partially supported because only three factors out of the eight factors (i.e., *altruism*, *situational normality*, and *disciplinary norm*) had combined significant standardized co-efficient beta results. Other factors had non-significant standardized co-efficient beta results, indicating that they did not have a combined contribution on the outcome variable, which is OA publishing practices. Hence, the hypothesis is partially supported.

Similarly, Figure 11 presents the MRA beta results in a model. The solid lines indicate significant influence, while the dashed lines indicate non-significance. In summary, *disciplinary norm* (β = 0.443) ranked highest in the order of factors influencing OA publishing practices of HASS researchers in Canada. This was followed by *altruism* (β = 0.331), *situational normality* (β = 0.267), and *perceived content quality* (β = 0.144)

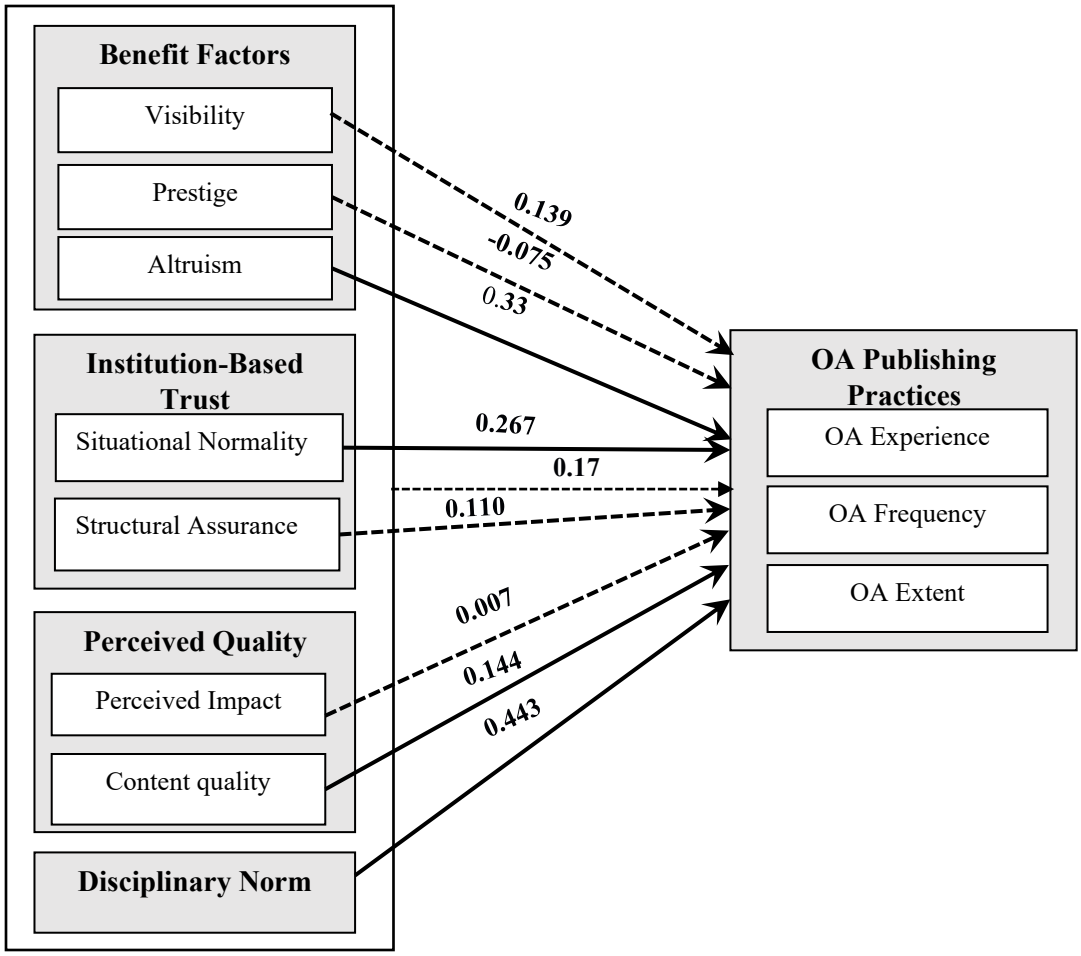

Figure 11. Summary model of hypotheses testing with MRA beta results

Chapter 5: Phase 2 Findings - Semi-Structured In-Depth Interviews

5.0 Chapter overview

To answer RQ3 (i.e., *how do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication*?) and RQ4 (i.e., *what facilitates or inhibits the open access scholarly communication practices of ECRs and MCRs in the HASS disciplines in Canada*?), semi-structured interviews were conducted with 20 professors from the U15 universities in Canada. This section presents the demographic information of the participants and the findings from the thematic analysis of interview data.

5.1 Profile and demographic information of interview participants

Results showed that there were more female professors who participated in the interview. Eleven participants (55%) are female, while 9 participants (45%) are male. For general disciplines, 11 participants (55%) are from the social sciences, while nine participants (45%) are from the humanities. This shows that there were more participants from the social sciences, compared to the humanities. There were no participants from the arts discipline. Participants were drawn from 14 specific disciplines in the humanities and social sciences. Figure 12 shows that four participants (20%) were from the law discipline, followed by two participants (10%) each from political science, geography, and education. Others were from psychology, philosophy, music education, linguistics, classical studies, English, criminology, communication, classics, and anthropology.

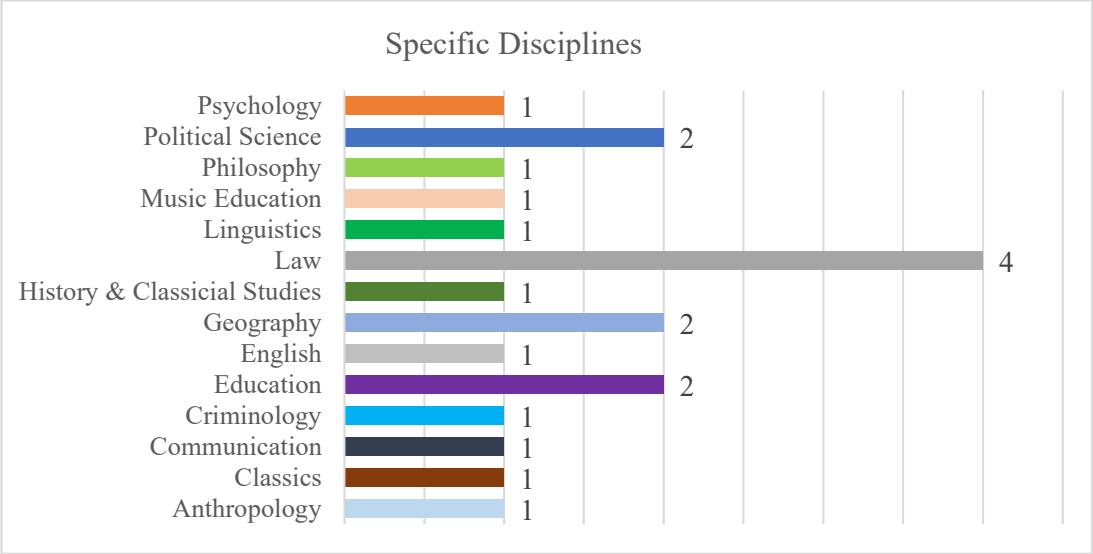

Figure 12. Specific disciplines of the interview participants

Table 5.1. Interview participants' pseudonyms, gender, career stages, and disciplines

Pseudonyms	Gender	Career Stage	Discipline
Amelia	F	MCR	Humanities
Angela	F	ECR	Humanities
Anthony	M	ECR	Social sciences
Ariana	F	MCR	Humanities
Charles	M	MCR	Social sciences
Emma	F	ECR	Social sciences
Evelyn	F	ECR	Social sciences
Farah	F	MCR	Humanities
Freya	F	MCR	Humanities
Georgia	F	MCR	Social sciences
Grayson	M	MCR	Social sciences
Greg	M	ECR	Humanities
Jackson	M	ECR	Humanities
Jessica	F	MCR	Social sciences
John	M	MCR	Humanities
Jordan	M	MCR	Social sciences
Olivia	F	MCR	Social sciences
Paul	M	ECR	Humanities
Robert	M	ECR	Humanities
Sophia	F	ECR	Social sciences

Of the 20 professors who participated in the interviews, 12 participants (60%) were mid-career researchers, while eight participants (40%) were early career researchers. 12 participants (60%) were MCRs while eight participants (40%) are ECRs. As discussed ealier, psudonyms were assigned to the participants to ensure confiendiality. Table 5.1 presents the interview participants' pseudonyms, gender, career stage, and disciplines to provide a context of how they were represented in the thematic anaysis.

5.3 Thematic Analysis Results

This section presents the results of the thematic analysis with detailed interpretation of the main themes and their sub-themes generated from the analysis, backed up with participants quotes and discussed.

5.3.1 Disciplinary Norms and Practices Drive OA Publishing Practices

Participants were asked about the norms for OA publishing in their disciplines. Findings revealed that the norms are multivarious, positive in some disciplines, and entirely non-existing in others. Results revealed that there is a growing support and positive attitude for OA generally, but specific norms for OA publishing are still not common in many humanities and social sciences disciplines. This section presents findings on ways disciplinary norms and practices drive OA publishing of researchers in the HASS disciplines of the U15 universities in Canada.

5.3.1.1 Disciplinary support and move towards OA publishing

Participants discussed growing support and move towards OA publishing in their disciplines. Aside from the funding availability for OA publishing in grant applications, some participants reported the growing effort by their department's head and institution's leadership to support OA publishing. For instance, Anthony, an ECR in social sciences revealed, "Within education or educational administration and policy, that kind of area to be more specific, I think the norms are leaning towards open access or shifting towards open access." The norms are shifting towards OA particularly in the social sciences disciplines, although it's not coming along very fast. This was confirmed by Emma:

> Hopefully coming slowly. It's certainly not coming very quickly, and I don't think that there's a lot of pressure in my discipline, which is outrageous. [My discipline] is really important in many ways. Specific education with all the conversation about public mistrust and lack of civic knowledge… having access to studies of like elections and politics would be really important to contemporary democracy. So, it should happen fast. It seems to be happening at a glacial pace. (Emma – ECR, social sciences)

Some disciplines are in fact receiving support from publishers who are known for paywalled journals operation. One participant shared his experience with Elsevier in making his article freely available to the public. According to Jordan, an MCR in social sciences, "it doesn't strike me that it's particularly hard to get access to publications and get them outside the paywall, and I think every publisher has an interest in that." Some publishers are supporting OA

availability of research published behind paywalls upon request, although for a limited time. This might be the norm in the future. As explained by Jordan:

> I had a publication come out last month, right? And that got picked up on Twitter. And like people were talking about it on Twitter. So, I turned around to Elsevier and I said, "hey, look, all these people were talking about it, but it's behind the paywall and I keep sending stuff out. Will you make it available for free for download for a period of time" And they were very accommodating for like 30 days free download. They put it outside the paywall. So, I don't know if that's going to be kind of more common or not. (Jordan – MCR, social sciences)

Some participants are exhibiting positive attitude towards OA publishing, and they also expect that their departments will move more in that direction. This is the understanding of Farah, an MCR in the humanities, when she stated, "I do have a feeling, if it's the open access, I will have more regard toward the journal. Because I feel like they are thinking actively about dissemination of knowledge. But that is just me thinking personally." Moreso, there is a growing norm for preprints publishing in some humanities and social sciences disciplines, particularly in philosophy in general and psychology. As discussed by Jackson:

> I'd say the norms are pretty – I don't have a good sense of like percentages – but my sense is that most people in philosophy […] are contributing papers to open access publication venues in one way or another. Whether that is through PhilPapers or through PhilArchive, or like many people do, pay the open access fees from the journals to make those publications open access. (Jackson – ECR, humanities)

This suggests that there is growing support for OA publishing particularly through preprints or through the paying of APCs to make their research available freely to the users. This was further confirmed by Jessica:

> I would like to say that it's going to become more normal in […] psychology, especially preprints. There is in [my discipline] a little bit of a move towards preprints, in the sense that there's some move for pre-registered studies. You have to basically register and say this is what I want to do in this study and then you can submit it for publication after you've registered it. (Jessica – MCR, social sciences)

Further, some participants also revealed that the awareness and conversation around OA publishing is increasing in their disciplines. For instance, Georgia echoed, "there is an awareness growing that you should look at where your work is published and who might get to read that as a result." Similarly, Emma also explained:

> There was a big conversation about our central journal in our central discipline in Canada going open access, and I believe that they're figuring something out about that. Because

> our journal receives aid to scholarly journal funding from SSHRC that they might be required to have some sort of open access policy. (Emma – ECR, social sciences)

This shows a growing norm and disciplinary support for OA publishing in most social sciences disciplines. Although, the disciplinary norms for OA publishing are increasing, it does not imply that OA publishing has been normalized in all HASS disciplines. For instance, Jessica, an MCR in the social sciences, described the lack of norms for OA publishing in her discipline. In her words, "I don't hear a lot of conversations around open access in [my discipline], so I'm not sure if that will happen, but I think it would be fantastic." For Jessica, it would be fantastic if there were norms for OA publishing in her discipline. Similarly, in disciplines such as linguistics and geography, the norms for OA publishing are coming slowly. As Ariana described the norms for OA publishing in her discipline:

> There are not a lot of norms yet for open access publishing. I think most people regard it as good. The biggest journals in my part of [my discipline] are not open access like the most prestigious journals that are run by scholarly associations. So, both the Canadian Linguistics Association and the Linguistic Society of America have journals, and they are not open access. (Ariana – MCR, humanities)

5.4.1.2 Increasing use of subject and institutional repositories in social sciences

The use of repositories for self-archiving or depositing pre-prints was common among many participants, especially the early career researchers in the social sciences disciplines. Participants indicated using institutional repositories which are usually hosted by their institutions, or subject repositories which are focused on specific subject disciplines. As discussed by Evelyn:

> I always use the institutional repository to share the pre-approved versions…I mean usually, I primarily rely on the institutional repository. So, my last employer before I came to [this university], I think I've uploaded things retroactively and then I don't know. Maybe whenever my publication went to a year or two, I would upload into the repository (Evelyn - ECR, social sciences).

Evelyn's preference for institutional repository is similar Jackson's experience who affirmed that he publishes the preprints of all his work in preprint servers. The use of institutional and subject repositories has helped many participants make their research outputs freely available to the public. Some participants indicated that doing this helped them meet funders' requirements for OA publishing, especially when they are not able to publish their research outputs in OA journals because of associated article processing charges (APCs). Instead

of their research to remain behind paywalls and inaccessible to the readers, some participants chose to upload pre-prints of their manuscripts either on their institutional repositories or on specific subject repositories. As explained by Georgia:

> Because I've yet been in a situation to be able to afford the fees that are associated with gold open access, I have where possible, uploaded the accepted version of my article [post-prints] to my university repository and then make it so that Google Scholar will find it. But people from around the world will find it and be able to at least read it. If it is sitting behind a paywall, I have a couple of ones where I know for sure, they'll give me permission. So, they give me a PDF of the published article, and I also put it on the institutional repository for people to find, and that has been very successful. (Georgia – MCR, social sciences)

Some participants have also ensured that they understand the restrictions from journals in the form of embargoes (i.e., permission to or not to deposit preprint/postprints in IRs), and when such embargoes are not available, they make sure to deposit their research preprints on their institutional repositories. As Sophia discussed:

> Yes, I have done that, and my institution has its own repository, so I have done that with my publications. Once they based on whether there was an embargo like they were the preprints were published soon, as the embargo was lifted or like whatever the criteria of that publication was. I was thinking mostly publications that have no barriers to access (Sophia - ECR, social sciences).

In addition, some participants have made it a principle to first deposit their manuscripts into a preprint server before sending it out for reviews. As stated by Jackson:

> I do it [publish preprint] basically the day that I'm planning to send it to a journal for referee. I will first upload it to the preprint server and then I will send it to the journal for referee. So, it is basically whenever I finish a paper to send out to referee, I will send it to the preprint server that day and then send it to the referees (Jackson – ECR, humanities)

Although, several participants indicated having deposited their preprints in institutional and subject repositories, a few participants, particularly from the humanities, seldom used or have never used these OA venues. This is because they are either not aware of its existence or they do not understand how IRs work. For example, Ariana an MCR in the humanities submitted, “I have not used institutional repositories. I also do not really understand institutional repositories, so I have never used the one at [my university], for example. But I think it exists”. However, another participant revealed that she did not use institutional repositories because of her projects’ publications which were already open access through their project website, and thus saw no need to deposit it on IRs. As Emma noted:

> In two years that I've been at the University [where I teach], I've done a lot more public facing publications that are open access by virtue of what they are. So, I wrote a very long report. It's like 90 pages that's available freely online through the project website. I have written policy briefs and op-eds that are totally available. I haven't published like I've submitted to journals in that time, but in this specific two-year period of the pandemic, I have a lot of things that have gone out, but that wouldn't be up on a repository yet. (Emma - ECR, social sciences).

5.4.1.3 Alternative means of scholarly communication is becoming the norm

Results showed that several interview participants have been exploring alternative means of scholarly communication to make their research outputs openly available. Participants have explored channels other than OA journal articles and OA conference papers, and this is becoming the norm in many disciplines, particularly in the social sciences and in some humanities disciplines. Formats such as presentations, reports, policy briefs, and supplemental resources have been employed as means of scholarly communication by some participants. As revealed by Angela:

> I do a lot more presentations than I do articles right now and I find that nowadays more and more of my presentations are on Zoom…I know I'm looking more and more at how I present when I present and if those are recorded and how those are available. 'cause I think that nowadays, people will read still, but it's also important to know if somebody has to pay to see you talk, especially since most of the time, I do my talks for free. (Angela – ECR, humanities)

Similarly, Emma discussed reporting her research findings as policy briefs and also making those reports available online on her personal website. She also understands the implications of making non-OA articles available online. Hence, she would rather publish her research findings as policy briefs or translate them in other formats to make them available online. As she explained:

> I'll look first to open access journals that do not have any costs associated or to open access journals that do if it's the right audience and try to budget or move money around in that way… If it's not possible, works like the exact right audience that we are trying to translate our knowledge to is going to be reached through a paywalled journal that does not have open access or we cannot afford. I will summarize the findings and make it available in another way or put it online and or tweet about it when I have free copies or make it happen in another way. (Emma – ECR, social sciences)

Sharing of research outputs on personal websites was seen as an easier and safer way of communicating findings of research to the public. Some participants used their personal websites instead of their institutional repositories which they perceived as been difficult to use. Also,

platforms such as the ResearchGate was used as alternative channels of scholarly communication. As discussed by Georgia, “if my university did not have an easy repository for me to upload things to, then I would have to upload it all to my personal website and people aren't going to find that. There are policies around legality and copyright too.”

Other participants have defaulted to publishing or depositing formatted or accepted version of their manuscripts on ResearchGate or another preprint severs such as the Social Science Research Network (SSRN). As Evelyn noted, “I used other platforms to share my work. ResearchGate, I guess, would be the primary one. But usually, I do not upload full text until a couple of years have passed in case the publisher gets upset.” This was corroborated by Grayson:

> I've personally had defaulted to – if the journal either gives me the copyright, the publishing authority, or they have that policy that allows you to post like preprint versions or pre-formatted version of the paper – I've defaulted to posting them on places like SSRN or ResearchGate or even my personal website, rather than going to my institution’s repository (Grayson - MCR, social sciences)

Higher education institutions and funding agencies have recently been emphasizing alternative modes of scholarly communication. As such, some participants have inculcated the habit of publishing in alternative modes of scholarly communication to ensure free access. For instance, in Robert’s words:

> I've published on the advocates for the rule of law blog as well. So, these are all open access in diverse ways. Some peer reviewed, some not. Occasionally, I will deposit on SSRN usually only for the purpose of making sure people can read it if they're looking for it. But if for instance, if particular […] journal has a policy that you cannot publish a working paper on SSRN, I won't do that, but otherwise, once I'm ready, I'll put it on SSRN (Robert – ECR, humanities).

Similarly, some participants have used social media platforms such as Facebook as a means of scholarly communication. For instance, Amelia, and MCR in the humanities revealed having done a lot of publishing from her community on social media. This implies that beyond publishing in OA journals and institutional repositories, many participants in the social sciences and some humanities alike, are employing alternative modes of scholarly communication in their quest to ensure open access to research outputs.

5.3.2 Institutional and Systemic Barriers Limited Researchers' OA Publishing Practices

Participants discussed having faced institutional and systemic barriers which limited their OA publishing practices. These are the barriers that participants experienced in their institutions, most of which involved their career progression, promotion, and how they were evaluated. These then had a ripple effect on their choices of publishing outlets, which were mostly behind paywalls. This section discusses these institutional and systemic limitations and how they affected participants' OA publishing practices.

5.3.2.1 Limited funding impeded researchers' OA publishing

Limited funding is the most frequently discussed institutional barrier to OA publishing by the interview participants. Many participants lamented the financial limitation they face as scholars in the humanities and social sciences disciplines which grossly put them at a disadvantage when it comes to paying to publish in gold OA journals requiring APCs. As participants pointed out, the frequency of their OA publishing would increase if they were as funded as their colleagues in the STEM disciplines. To many participants, the cost of APCs is the major limitation to their OA publishing. For instance, Charles an MCR in the social sciences pointed out, "the problems that people face in humanities and social sciences are different than the sciences. The insight grant is elusively limited in terms of how much money you can get." The insight grant is a grant awarded from SSHRC to build knowledge and understanding about people, societies, and the world (SSHRC, 2023). For many participants like Charles, there is a common understanding that they are poorly funded, and some have not received funding for their research projects in years. Hence, it becomes extremely difficult to pay-to-publish OA. When asked what the funding looks like and how it affects his publishing decision, Charles expatiated:

> We are competing for tiny pots of money in social sciences like $50,000. We write the same grants, the same sort of amount of grants that you do for $1,000,000 CIHR [Canadian Institutes of Health Research], right? It's like a huge amount of labour to compete for small grants which, not that they need to be bigger, but the scale of funds available to us in social sciences and humanities is part of the reason that it's been a difficult shift to open access. (Charles – MCR, social sciences)

To corroborate Charles' submission, Farah, an MCR in the humanities confirmed that researchers in the STEM fields have better funding. In her words, "they [funding agencies] pay bigger grants to those scholars there. So, they have the means to pay the journals and the

publishers to have their pieces." As many OA journals, particularly the gold and hybrid journals, require the payment of APCs, researchers in the HASS disciplines are limited in their efforts to publish their research in OA journals. Similarly, Jessica and Farah reiterated that they will prefer to publish all their research OA if they have funding. According to them:

> The frequency [of publishing OA] would increase if I had funding for open access publications. And I have a lot of strong opinions about the flexibility of open access because it's expensive. I would publish everything open access if I could afford it. But right now, it ends up being less frequent because of the cost of it. Particularly, you know a lot of them are Americans, and then you have to calculate the exchange rate on top of that as well. (Jessica – ECR, social sciences)

> If I get funded up, I will prefer to publish my pieces as open access so that everyone has access to it. I don't own that knowledge. I'm working with people and research participants who are helping me co-create that knowledge, so it shouldn't be mine …Why not contributing back to the community. That's me. So, if there is funding, I would definitely like to publish open access. (Farah – MCR, humanities)

As Jessica further explained, not having enough funding to pay for APCs was a form of an institutional barrier to her OA publishing effort. With the limited funding available to most HASS professors, it is inherently difficult to use their grant money to pay for APCs. As she lamented, "I think it kind of feels like an institutional barrier because I've kind of repeatedly said to them, if you want me to actually use this money, you have to give me enough money to actually pay the fees." This was similar to the submission by Emma, an ECR in the social sciences, that grants awarded to her was small and could not be used for paying APCs. As she echoed, "SSHRC grants are smaller for the most part, there's simply less money." This means that despite having some funding which can be harnessed for paying APCs, participants could still not afford these exorbitant fees. For some early career researchers, paying to publish is often impossible. As Sophia explained:

> The main barrier to me is funding, right? Is the amount of money it costs to publish open access. And when you're a junior scholar and your SSHRC grants are enough money to do your research, but you know, it's probably 10% no more than that of my SSHRC grant would. I think the SSHRC grant was for like 49 or $50,000 and it was like $6,000 or something to publish open access. I can't remember exactly the numbers, but it's a lot to publish in open access. (Sophia - ECR, social sciences)

As expected, professors have a lot of expenses to incur. These include attending conferences, paying for graduate salaries, managing their websites, among others. Hence, its

increasingly difficult to assign thousands of dollars for APCs which is already more than 25% of their research funding. Hence, it has become difficult for many participants to pay for APCs, and this has impeded their OA publishing practices in a significant way. Although it is expected that some journals charge APCs, lower APCs might encourage researchers to publish more in OA journals. This opinion was shared by Ariana:

> I've always regarded myself as being in the category of person who does have funds and €300 is pretty low for an open access fee. So, I've always paid it. But other journals have charged like $1500 or more. I mean in [my discipline] … they are often about $1500. (Ariana - MCR, humanities)

This implies that lowering the cost of APCs might help improve OA publishing uptake by researchers in the HASS disciplines. Some participants did agree that they understand publishing process involves certain costs, including editorial assistantship and production. But charging exorbitant fees will discourage them from publishing in such venues because they cannot afford the cost.

5.3.2.2 Tenure and promotion requirements hampered OA publishing of ECRs

Aside the cost of APCs and financial limitations hindering OA publishing by HASS professors, another common barrier reported by many early career researchers is the tenure and promotion requirements in their universities. These requirements, according to the participants, largely favour publishing in non-OA traditional journals, or subscriber-based journals. Many participants who are early career researchers believed they are expected to publish in high-ranking journals. Hence, their OA publishing practices have been negatively impacted. For example, Angela discussed:

> And some of that is 'cause as an untenured but tenure-track, I need to get into peer reviewed journals and I don't know how many open access peer reviewed journals there are, specifically ones that would be within the law realm that would garner enough support from the faculty to have them say, “Oh yeah, this lady” right?” (Angela – ECR, humanities)

This echoes the expectations to publish in high-ranking journals, and that participants’ low engagement in OA outlets is not entirely due to prestige of the venues. Other early career researchers such as Evelyn shared the same view when she explained:

> I haven't really pursued open access journals specifically 'cause I'm pre-tenure and most of the so-called high-quality journals that I can keep publishing are not open access. So, I'd say like within the academics I know who are trying to get tenure, we are still

> publishing in the same kind trying to target the top journals and open access is not a huge issue. (Evelyn – ECR, social sciences)

Interestingly, some mid-career researchers also understood this pressure to publish in variety of avenues to get tenure. For example, as Greg, an MCR in the humanities captured it, "there's definitely an implicit or tacit pressure to publish in a broad range of environments, and some of those paid – that's just the reality – or pay to read are not free to everybody." Similarly, Freya corroborated this by describing how the "pressure" can have an impact on how she publishes. According to her:

> Once that pressure is lifted and then you have less stress on you. Like getting tenure is such a major thing, but once that's been granted then you have more freedom to pursue journals that actually align closely would be ideological goals, right? (Freya – MCR, humanities)

A common understanding by most of the participants is that targeting OA journals alone will not be great for their tenure application as they are expected to publish in highly ranked journals. They were aware of how not publishing in recognized traditional paywalled journals would impact their tenure application, promotion, and even their pay. This is because their tenure or promotion applications and research outputs are evaluated based on metrics that mostly favour the non-OA traditional journals. As discussed by Greg:

> Pre tenure, I think there is a soft or an implicit or tacit policy that you should try and get in a wide variety of different publications and open access wouldn't be my only criteria. Then going forward, it may well be. But up until this point in terms of going through the tenure track process, I think very few people would say they just simply would not consider publishing in a paid journal or non-open access journal if it was seen as either prestigious or something that was going to help with an overall tenure application. (Greg – MCR, humanities)

Tenure evaluation also impacts the pay increase or reduction of researchers, which then makes them very cautious of the venues they publish their research outputs. As revealed by Grayson:

> The challenge is when you're being reviewed for tenure or promotion or even your annual performance review at my university, you get scored based on your research and that score affects your pay 'cause it affects your pay increase. And there are still enough traditionalists among the faculty that they're looking at, the prestige of the publication outlet. (Grayson - MCR, social sciences)

Thus, some participants have resolved to publishing in recognized venues which are traditionally paywalled until they get tenure. They believe the pressure to publish in these venues would be lifted once they get tenure. This was confirmed by a recently tenured faculty, Charles who articulated, "it's not entirely the prestige factor, but once I got tenure, I can publish wherever I want." When asked what about how tenure requirements influence his publishing decision, he elaborated:

> Part of what influences my ability to publish in open access places is that once I got tenure, I didn't have to care about prestige anymore. I mean eventually, like when I apply for a full professor, I still plan to go in with another book from McGill/Queens [presses], just to show that I can do it. (Charles – MCR, social sciences)

Feeling overwhelmed with conflicting priorities in pursuit of tenure

Furthermore, some participants have described that publishing OA is conflicting with other tasks that will help them get tenure. This was expressed by some female professors, as they are already overwhelmed with family responsibilities, which made them have little or no time to seek out OA venues. As discussed by Evelyn:

> I already feel pretty overwhelmed with the amount of work I have. Like pre tenure or single parent of 2-year-old, pandemic. This is like another thing to be mindful of when trying to get funding, trying to publish, trying to like to get good teaching scores, trying to do service, trying to have a life. It's not like I'm opposed to open access it's just like…open access is competing with a lot of other requirements. (Evelyn – ECR, social sciences)

Similar to Evelyn's opinion, Freya also stressed that parental responsibilities limited her engagement in OA publishing. In her words, "I think if I had no kids, and I'd had more time, I would be a very different academic for sure." For professors like Evelyn and Freya, there is already so many academic and non-academic engagements. Hence, seeking out time to meet the requirements for OA publishing, particularly depositing pre-prints in IRs would make them feel more overwhelmed beyond what they currently face. This was also shared by Olivia when she stressed:

> What would hinder me is the sort of the work that it takes to go through that and identify what kind of thing I can publish, or I can put in a repository for each piece of work that I've published. What can I put in there if anything? And I feel like probably that would be me doing the work [and] I don't think I could get anyone else to do it, probably. (Olivia – MCR, social sciences)

Hence, some participants would rather spend their time on publishing in journals that will help them get tenure or promotion, than spend more time trying to ensure access to their research outputs through their IRs. This shows that tenure requirements are major institutional and systemic barriers limiting OA publishing among the participants. The next section discusses the impact of tenure requirements on OA publishing practices of researchers.

5.3.2.3 Prestige and impact factors as systemic limitation to OA publishing

Many participants reported that their decision to publish most of their research outputs in non-OA journals is because there are limited OA journals considered to be prestigious and of high impact factors in their disciplines. Participants expressed that they are implicitly expected to publish in prestigious venues, and it is increasingly difficult for them to only target OA journals which are usually newer and with low impact factor. As Grayson stated:

> Automatically, journals that are in their first few years of existence or book publishers that are new aren't going to be perceived as high quality even though they might be excellent quality. They're not going to be perceived as high quality. They're not going to be in the rankings, or they might not yet have an impact factor 'cause they're so new. And that's a disincentive to publish in those places and my suspicion is newer outlets are more likely to be open access, and so there's that disincentive in that sense. (Grayson – MCR, social sciences)

The perceived quality of most journals is not necessarily based on the publication's quality, but usually on their long-standing history which newer OA journals may not enjoy. Hence, their prestige and impact factors are often not as high as the traditional paywalled journals. This has negative influence on researchers when deciding where their research would have maximum impact. For example, Emma, an ECR in the social sciences discussed, "there's something about getting popularity, like we are also concerned all the time about impact factor and how we will be more diffuse about impact factor?"

Perception of prestige of OA venues varies among the participants, and it is an important determining factor for OA publishing. Just as Charles exclaimed, "I think there's still the problem of the perception of prestige." These perceptions of prestige are institutional barrier to researchers' engagement in OA publishing. Consequently, participants expressed their concerns on limited prestigious OA journals in their disciplines. Some participants averred that prestigious and real open access journals are those that do not charge APCs and offer high quality peer reviews. As one participant described:

> The barriers for people who want to publish are limited venues, so like genuinely open access venues. I would say that a for-profit publisher that charges money for your article to be open access is not real open access. Real open access is a journal that is entirely open access. (Ariana – MCR, humanities)

When a journal charges APCs to make their research open access, that journal is not regarded as a genuine OA journal by Ariana, and that will discourage her from publishing her research in such venues. This resonates with Emma, an ECR in the social sciences who stated that the "major prestigious journals are for the most part not open access. That's a major barrier. If I want to be publishing in things that are widely recognized… that's going to be a challenge." This is particularly worrisome as researchers seeking tenure are evaluated based on their publications in high-impact journals, and those are usually not OA journals. As expounded by Evelyn:

> Basically, if I might focus my publishing efforts, I would generally seek out in my fields the best journals and those are not open access. They are traditional paywalled ones that I think I would have to do the gold, whatever label I'd have to have money to make it open access. The bigger concern is for pre-tenure people like where you're publishing for hiring processes, it's like what the quality of the journal is. In my experience in my field, most of those journals are not open access. (Evelyn – ECR, social sciences).

This is relatable to many participants as they extensively discussed limited prestigious OA journals in their disciplines. This is even more stringent in the humanities disciplines such as law, where prestige and impact of journals are firmly and traditionally held. Their principles, traditions and laws have remained consistent over the years, and as such, most researchers in the law discipline tend to be "traditionalists" according to Greg, an MCR in the humanities. As a result, they tend to favour non-OA traditional paywalled journals. According to Greg:

> I think the biggest barrier within legal tradition would be prestige, tradition, right? Just the idea that lawyers don't move very quickly, right? You'll often hear the adage that if you took a physician from the 18th century and put them into an operating theater now, they would be lost, right? If you took a lawyer from the 18th century, and put them in the court, you feel pretty well at home, right? Not much has changed in the law and the way the law is practiced hundreds of years, right? It's very traditional discipline. And I think law academia tends to be more traditional in that sense too. (Greg – MCR, humanities)

The core humanities disciplines like law and philosophy continue to share age-long traditions and values which have impact on how and where their researchers publish their research outputs. As Jackson asserted, "the main bias against open access publishing [in my

discipline] is prestige." When asked how prestige is a barrier for OA publishing in his field, he expatiated:

> I think the most serious obstacle is just the prestige of the journals. The current problem in [my discipline] is that there's no open access journal that is at the very top tier of journals in the field. And so, the very best […] work doesn't get published in open access journals and until there are examples of very high prestige open access journals available in the field, that's going to continue to be the case. (Jackson – ECR, humanities)

This means that it is difficult for newer OA journals to gain high ranking and impact factor like the traditional journals, and this has exacerbated the institutional barriers to OA uptake in the HASS disciplines. As explained by Olivia, "there's a fairly well-established ranking system of journals and it's really hard for an open access journal to kind of climb the ranking because of all the webometrics and impact factors." When asked about what could be done to improve the impact and prestige of open access journals, Anthony opined that key scholars and professors need to be publishing in OA journals. This will improve citation, engagements with such outlets, and in return improve their impact and prestige among scholars. According to Anthony:

> If the major researchers are continuing to publish in non-open access journals, then they're going to continue to be cited, and that drives the impact factor, and up and coming scholars into publishing in those high impact factor journals. And then the circle just kind of perpetuates. (Anthony – ECR, social sciences)

This shows that prestige and impact factors of journals are some of the institutional limitations to HASS researchers' OA publishing efforts. If there are no strict requirements and expectations to publish in high-ranking journals, most ECRs would choose the OA venues for publishing their research outputs. This was corroborated by some mid-career researchers, such as Greg who discussed:

> I think now that I'm tenured, I'll probably strive to only publish open access. I have published in restricted access formats because you kind of have, when you're pre-tenured, in terms of publishing across different law journals and things like that. But now that I don't have to do that, I think I'll focus on trying to publish only where people can access the work for free and not have to go through paid providers. (Greg – MCR, humanities)

One way to reduce the impact of tenure requirements on the freedom pre-tenured professors have about where to publish is to push against impact factor which drives most researchers to non-OA venues. As Olivia discussed, "I think that I can push back against things

like impact factor in the way that I construct any narrative around my research when I go up for promotion." Researchers can articulate their decision to publish in OA venues just like Olivia, but this might be a difficult thing to do for most early career researchers. However, it is important to note that OA publishing is not required in tenure requirements in most institutions. For instance, Sophia, an MCR in the social sciences clarified, "I've not been told that, I go for tenure this year, and nobody said anything to me about having to publish in open access." But as Emma, an ECR in the social sciences puts it, "it is more important than my ambition or my career stage to try to do what I can to publish open access." This shows that many participants who are ECRs will choose to publish their research outputs in OA outlets if tenure requirements for high-impact journals are relaxed.

5.3.2.4 Technical issues with institutional repositories limited preprints deposit

Many participants expressed their concerns on the technical difficulties with some OA outlets, particularly about the findability, accessibility, and discoverability of IRs. Some participants discussed their lack of trust in the capacities of IRs to make their research findable by the users. For example, Ariana, an MCR in the humanities posited, "I don't really believe that they will make it easy for people to find. So, I don't think that is the best way to share my research so that it is findable by people who are interested in it." Other participants also shared Ariana's view on findability of IRs and questioned their discoverability and accessibility. For instance, Olivia submitted:

> The question would be, is it really going to be discoverable? How is it indexed? If somebody uses Google Scholar, for instance, which I will be honest is the way that I reach a lot of what I want to look at… But if somebody uses Google Scholar to search, is it going to get to my article in [our institutional] repository or not? So, I think, I don't have a great deal of confidence or knowledge [about what] the repository is. That would probably help a lot if I knew that the repository was useful and accessible and discoverable, then I would be inclined to use it. (Olivia – MCR, social sciences)

Similarly, other participants also expressed deep concerns on the accessibility issues with IRs, and hence chose discipline-specific preprints servers instead, which help serve their user community. For instance, Jackson stated that he would publish in his disciplinary preprint server rather than use IRs. This is because he believes users will be able to access his research better through their disciplinary repositories. In his words:

> The way that open access has flourished in our sub-community is that there is this dedicated preprint server, and the open access community is kind of centralized around that and the audience that I'm reaching around the world knows how to look into this particular repository for this kind of work. But loads of those people who are interested in that kind of work aren't going to be checking [my university] dedicated institutional repository. It's just not the right venue to reach the audience that I'm interested in. (Jackson – ECR, humanities)

Hence, Jackson opined that posting his research on IRs is redundant because he posts in preprint servers and then post a link on his "personal website which is hosted by the university." Hence, he does not deposit his research on IRs because it will be redundant to do so, and his works are "already publicly and freely available." Further, one participant expressed the confusion around language and terminologies, and how it has limited her use of IRs. This is because of the varying terminologies such as preprints and post-prints which is not clear to many researchers. According to Sophia:

> I find the whole process a bit confusing, honestly. Like trying to figure out what it means, what requirements and what is a preprint like the language around what's a preprint versus a post print, is really it's not consistent. The language is not consistent and so, I think that's quite confusing, but that's not my institution repository specific. That's just, I think, in general across the board. (Sophia – ECR, social sciences)

5.3.2.5 Conflicting and unsupportive OA polices limited researchers' OA publishing

Participants reported several policy barriers to their OA publishing practices. Some participants expressed their concerns on the disconnect between OA policy and practice, and the feasibility of funders' requirements to publish OA, which are not well defined in most cases. In fact, some participants doubted whether funding agencies are serious about their OA publishing requirements. For instance, Georgia, an MCR in the social sciences explained, "now SSHRC is leaning more towards requiring that your research be published open access. My only problem is I don't know if it's like a requirement or just a heavy suggestion." This doubt could have stemmed from the realization that although these policies exist, there are no mechanisms in place to ensure their implementation.

Similarly, Freya, an MCR in the humanities revealed, "SSHRC is always pushing us to do more open access stuff, more open public events, which is great. But sometimes you know there's a disconnect between what academics know about what's happening." This suggests that,

there is a disconnect in OA policies and practice. This was further corroborated by Olivia, who sheds light on the reality of policies in principle and in practice. In her words:

> I would say that the norm in [my disciplines] is to support it in principle and then be a bit vague about how to achieve it in practice (laughs). And I think different people are under different institutional pressures you know, obviously someone who's going up for tenure might be very concerned to publish in top-tier journals that are not open access, depending on what institution they're at, but that might be a big concern, as in U15. (Olivia – MCR, social sciences)

This implies that OA policies, particularly those enacted by funding agencies and institutions may face different realities (i.e., policy versus practice), and these realities may often conflict with each other. Moreover, participants reported not being aware of any expectations, policy-wise, for them to publish OA. Some reported to have heard of ongoing conversations about OA publishing, but no specific requirements for them to publish OA. For instance, one participant revealed:

> No, there is no expectation. I know there is more momentum going on in terms of just having the conversation of open access through our libraries. Like they are having our librarians having conversations with us, but it's not a requirement whatsoever in our field. (Farah – MCR, humanities)

Farah's view was in tandem with Jessica's, who asserted that "there's certainly not an expectation that you should be publishing open access for tenure promotion here. Other than those conversations, we used to pay to get your work published. That doesn't happen anymore." As there are no clear policies requiring researchers to publish their research outputs as OA, some participants do not see the need for OA publishing. They have resorted to using their IRs just for meeting OA requirements by their funding agencies, limiting their engagement with OA publishing.

To see an increase in the uptake of OA publishing by researchers, there needs to be strong institutional support system. However, participants reported not receiving any support from their institutions regarding their OA publishing efforts. For instance, Evelyn echoed:

> I haven't really seen anything by way of support institutionally. I don't know if I missed that; I'm fairly on top of at least my email, and I don't really see any institutional support for trying to pursue open access. (Evelyn – ECR, social sciences)

Evelyn's view on not receiving any OA support from her institution was also echoed by Greg, an MCR in the humanities, who asserted, "Is there any active encouragement from my institution? No. I don't think there's any sort of institutional encouragement." When asked what current support looks like in his discipline, Greg affirmed:

> I don't think we've ever seen programs at the university research level. There's always programs you can go to, learning sessions and all this kind of stuff, right? I've never seen anything like that on open access publishing. And that's not to say there hasn't been, there may well be, but I've never noticed it within our own faculty. We've not really discussed it very often either. (Greg – MCR, humanities)

Hence, participants discussed policy limitation for OA publishing as they experienced lack of institutional support, policy-wise, particularly about including APCs in grant applications. Although most funding agencies now recognize the inclusion of APCs in grant applications, some participants reported being faced with criticism for doing so. For example, Jessica explained:

> I think institutional support for open access is kind of mixed at [my university], like they would like us to do it, but they don't have a ton of support. And then sometimes when I have applied for grants, and I've put open access fees into the budget, I'll get sort of criticism. And I'll use an actual journal to give my estimate. I'll say, here's the cost of publishing in this journal open access. But then reviewers will question the budget like that seems really high or that seems too low. And so, I think the way that reviewers evaluate even funding applications that include open access can be complicated too. (Jessica – MCR, social sciences)

Because of the lack of favourable policy from institutions and funding agencies, Jessica doubted the authenticity of funding agencies to ensure OA publishing of research funded by them. She stressed, "I doubt the authenticity of the Tri-Council funding agencies and their support for open access. It doesn't feel like they really wanted you to publish open access." She believes they would build more support for OA rather than just say they wanted researchers to publish OA. This was buttressed by Greg, who has reviewed grant applications, as he believes Tri-Council funding should not be harnessed for paying APCs. In his words, "I often see people asking for $5000 under SSHRC grants to publish, right? Like because you want to pay for a journal and all this kind of stuff. And philosophically, I don't agree with that." Hence, to some participants, not being able to pay for APCs from their grant money is a sign that there is no institutional support for them to publish their research as OA. Similar to Greg's objection to including APCs fees in grant applications, Jackson also shared:

> One thing I've noted – so I now serve on SSHRC […] committee. I'm on the committee that decides who gets short grants. And one thing I've noted there is that one of the transitions that's happening with this open access directive is to include open access publishing fees in budgets for grants. And I think this is just a disaster, a disastrous model for how to achieve open access. And I think it's something that should be actively resisted. (Jackson – ECR, humanities)

For Greg and Jackson, including APCs in grants applications is not an idealistic way of achieving OA because it will help proliferate predatory models of OA publishing. Hence, they believe this approach is not viable and should not be encouraged. However, the implication of this is that there will be a huge barrier for many professors who need to pay for APCs in gold OA and hybrid OA journals.

Additionally, participants also reported the resistance from publishers as institutional barriers to their OA publishing practices. Some participants were clear about their understanding that most for-profit publishers would not want OA publishing – particularly the diamond OA – to be a reality because they would lose their market value. This resistance from publishers varies and ranges from embargoes for pre-print deposit to hybrid OA models that charge APCs. As described by Ariana, an MCR in the humanities, "I don't think publishers want to move to open access, because in my view, academia should move to an almost entirely open access model and at that point, for-profit academic publishers would essentially lose that part of the market."

The embargo placed on preprints by many hybrid and traditional paywalled journals has also been a barrier for some participants. For example, Jackson, an ECR in the humanities, lamented, "one obstacle is just understanding whether or not the posting of our preprints is allowed in the journal that the paper eventually gets published in. So, that's one obstacle." These policies and embargoes were perceived as resistance from publishers for default OA publishing to be a reality. Participants expressed their frustrations regarding the embargo periods for depositing their preprints in IRs, which are usually one to two years. These are part of the hindrances to OA publishing practices experienced by many participants.

Further, participants expressed that data sharing policy of most OA journals is a barrier to their OA publishing practices. For some participants who do qualitative research, publishing their data is usually not possible because of the ethical issues around sharing of research data, particularly the sensitive ones. As explained by Jessica:

> Open access publishing or even traditional publishing increasingly comes along with the stipulation that you'll share your data. And I'm not sure If that's the norm in your discipline, but it's increasingly not in mine. I have issues with that. So, for example on one hand, I'm not going to share my qualitative data. I'm not gonna upload all my transcripts to go along with the paper, for example. I'm not convinced that social kind of like, I don't want to paint all social science researchers to look unethical. (Jessica – MCR, social sciences)

As a result, some participants have restrained from publishing in OA journals that required them to publish their research data or deposit their data in IRs. This is because it is against ethical standards and requirements of research practices in their disciplines. According to Emma:

> I don't, because of the nature of the work though, like the data that we have, I don't put in repositories because it's been quite personal. It's about people like decisions to be surrogates or egg donors like that kind of stuff. I don't put the raw data in for the most part, but I will put my stuff in repositories if it's available to me at university […] for sure. I really want everybody to have all this stuff. (Emma – ECR, social sciences)

However, some participants are now thinking of incorporating the need to publish their data on their institutional repositories by planning for this from the beginning of their data collection, as well as making these expectations clear in the consent forms to be signed by their research participants.

5.3.2.6 Inequities in OA publishing practices

Participants discussed growing inequity gap in their OA publishing practices based on factors such as the cost of APCs, unequal privileges, and gender disparities. This section focuses on these factors and how they negatively impacted on participants' OA publishing practices.

Inequities due to high cost of APCs

Many participants discussed the inequities caused by gold or hybrid OA journals that charge APCs to publish research articles OA. They discussed that having to pay-to-publish OA has restricted them to publishing in paywalled journals. For example, participants like Jessica, an MCR in the social sciences, believes that OA publishing has remained inaccessible to the majority of researchers, but accessible to only a few researchers who have the grants to pay for APCs. In her words, "I think that open access in general in my area, is just accessible to a very small group of researchers who can afford it, which I don't think is the point of open access."

However, this is not the ideal principle and focus of open access. Open access is meant to close the equity gaps in knowledge creation and access. However, with APCs, these gaps are getting widened and stretched. As explained by Grayson:

> There are people who don't have that [APCs] then don't have access to open access publishing unless they go with a default open access outlets. And so, I think it actually in some ways can increase the inequities in academia a little bit. (Grayson – MCR, social sciences)

In most cases, early career researchers are at the receiving end of these inequities as they are still building their reputations and academic profiles. They are usually not well funded like the mid-career researchers and thus their OA publishing have been further hindered by the cost of APCs. Hence, having them pay to publish is usually difficult, if not impossible, and many of them have resorted to publishing in paywalled outlets. This was echoed by Olivia:

> I think article processing charges inhibit publishing by early career researchers and doctoral students and they inhibit publishing by people who are not in Western academia. You know people who don't have access to […] and I mean they even inhibit publishing by people who are at poorer institutions as well. Because I'm sure that University of Toronto has a massive fund for professors to draw on to pay article processing charges. But [my university] certainly doesn't. (Olivia – MCR, social sciences)

The decision by most ECRs to publish in paywalled journals was influenced by the pressure to publish in high-impact journals which are recognised for their tenure process. These highly prestigious journals are often paywalled or hybrid which charge APCs to make their articles available in OA upon publication. This was confirmed by Farah:

> Prior to becoming an associate, I was just in publish and perish mode. So, I wanted to publish in top tier journals of our field which all required, as I've mentioned, every article is at least 3000 U.S. dollars. So, I thought, OK, I won't think about it right now, I just publish in closed doors. And until I have time to sit back and think about how I would actually want it to happen. (Farah - ECR, humanities)

This shows that APCs have increased the equity gap in knowledge dissemination by researchers, and as such limited their OA publishing efforts. The inequity created by APCs could also lead to other gaps such as limited academic visibility and recognition. This is because researchers who publish OA tend to have more coverage, better citation, and general research outputs than those who do not. As succinctly explained by Grayson:

> I think there is need for real reform. So, it's a very double-edged sword and the inequities issue that we talked about earlier is part of that double edged sword. Because if you're not

> securing grants – success breeds success – it's harder to get published. It's harder to get people to read your stuff if you can't have open access in a lot of ways. But to get published, you need to sometimes get grants. And to get grants, sometimes you need to be published. And this is all very unfair to junior scholars. (Grayson – MCR, social sciences)

Hence, as Grayson suggested, there is a need for real reform regarding APCs because it has disproportionately affected ECRs.

Inequity due to unequal privileges

Some interview participants discussed the inequities caused by unequal privileges, which some researchers enjoy from their universities and countries. Some participants recognized they are in a privileged position in terms of the language of writing and communicating their research, their funding availability, and access to research papers. They understood this might be a completely different experience for researchers who are not well positioned like them, living in a developed country with vast resources for funding and research access. For instance, Freya and Farah both shared similar views about the inequity that exists for scholars in developing countries, particularly those who are economically sanctioned. As they echoed:

> I suppose the thing that's really important is somebody from Kazakhstan, and there's so many inequalities, right? If you cut out researchers from around the world because they're from a poor country or whatever, there's a whole kind of social justice initiative here as well, isn't that? (Farah – MCR, humanities)

> I'm coming from Iran, born, and raised Iranian, and I'm thinking about poorer countries. So, Iran is one of those countries who in terms of global access to knowledge, also because we are sanctioned as a country. So, we don't have that kind of access. Also, with exchange rate because we're economically sanctioned, it becomes very expensive for universities to buy or subscribe to journals. (Freya - MCR, humanities)

The experiences shared by Farah and Freya were acknowledged by some participants who are Canadians or Americans. These inequities exist because of their privileged situations which in most cases cannot be pre-determined. Scholars from developing counties are often incapacitated in their research outputs, and certainly in publishing OA as they cannot afford the cost of doing so, in most cases. As confirmed by Charles, an MCR in the social sciences, "Canada has a subsidy mechanism… and it adds an extra step to the publication process." The subsidy mechanism in developed countries like Canada has helped many researchers deal with the challenge of the cost of publishing OA. This is an equity gap that further complicates OA

publishing by researchers who are not as privileged as Canadian researchers. For instance, one participant acknowledged her privileged situation and how it has played out in her scholarship:

> I am acutely aware that I am in a privileged situation. My university has the money. My university library does subscribe to a lot of journals. I publish in a language that I feel very comfortable writing in. It's one of my first languages. So, I'm in a very privileged position and so it really isn't fair for me to hold other people to this unreasonable standard that they have the very same things I do when I'm not paying for them. (Georgia – MCR, social sciences)

The foregoing shows the growing inequity gaps in OA publishing among the participants due to unequal privileges among scholars based on the country of birth and location of work. These unequal privileges have affected OA publishing among researchers.

Inequity caused by gender disparities

As revealed by some participants, particularly female professors, their engagements, and frequency of publishing OA has been limited by their family responsibilities. Some female participants reported having less time to search for OA outlets, which then limited their OA publishing practices. When asked how gender disparities affect their OA publishing, Freya lamented:

> I'm really busy with children, so I'll publish as opportunities arise and they're not always an open access journal, so that limits the possibilities. It totally affects it 'cause I have less time to search out opportunities, I don't know all the open access journals in my area. What I do is if somebody reaches out to me that I'm more likely to publish with them because of that kind of factor of getting in touch with me. (Freya – MCR, humanities)

Other female participants shared similar views with Freya when they identified family responsibilities, childcare, and university service loads as some of the reasons for not publishing OA. For example, Evelyn indicated, "I published maybe one to two times a year more recently 'cause I had a kid. But otherwise, you know a couple times a year." This was further amplified by Farah, who clearly articulated that:

> It [gender disparity] adds to that whole conversation of service load is considered for female faculty members and not for male faculty members… Not only funding becomes in the situation and the money that needs to be paid, but also it adds pressure and workload and free labor on racialized and gendered faculty members… So, the load is for free on the shoulders of mostly women and racialized members. (Farah – MCR, humanities)

Farah's explanation showed the impact of gender disparity on OA publishing practices by female faculty, particularly racialized women, and it signals how service loads disproportionately affect scholarly publishing practices of gendered faculty. The cost of APCs, unequal privileges, and gender disparities are part of institutional and systemic barriers limiting OA publishing among the participants. These barriers have increased or widened the equity gaps in OA publishing among the participants.

5.3.3 Researchers' Perceptions Influenced their OA Publishing Practices

Participants perceived OA publishing differently and their perceptions varied by disciplines and career stages. Participants with positive perceptions had the tendencies to publish more in OA outlets while those with negative perceptions are likely to avoid publishing in OA outlets. This sections include both positive and negative perceptions of OA outlets by the participants and how these perceptions influenced their OA publishing practices.

5.3.3.1 Positive perceptions enabled researchers' OA publishing

Participants were asked about their perceptions of the quality of OA outlets compared to their perceptions of traditions outlets. These perceptions focused on issues such as prestige, publications quality, usefulness of these outlets, research impact and reputation, among others.

OA is of equal quality and prestige

There is a common perception that since most OA journals are free, then they are of lower quality and not as prestigious as the traditional journals which have a long-standing history of quality outputs and prestige. However, this perception did not sit well with many participants from the humanities discipline, as many of them firmly perceived the quality of traditional journals and OA journals to be the same. For instance, Farah an MCR in the humanities affirmed, "the few open access publications that I've read in our field were all very strong. So, in terms of prestige, I don't consider them less. I consider them equal, especially in [my discipline], which is rooted in public education." Farah's experience with publishing in both traditional and OA journals informed her perception that OA outlets are equally prestigious. Her views were shared by Robert, an ECR in the humanities, who asserted that, "I think we need to acknowledge that open access is important, and it needs not be less prestigious. Maybe it is in practice, but it needs not in principle be an impediment to quality." Robert articulated that OA needs not to be

less prestigious just because it's free. That OA is free to read does not mean the quality of peer-review and editorial process are less. This view was further shared by Greg, who expounded:

> I think generally you're sort of the view that you know something open to all or no one paying for or seemingly paying for it, right? I mean, that's the sort of argument against, health care or being open access, right? Is sort of like it can't be good because if it's free to use or it's got to be lower quality… Well, if it's free, it's going to be crappy, right? And if I'm paying for something, it's going to be better because that's our life experience of quality, right? The more I pay for something, the better it is, right? That's how we all experience it. It doesn't mean it's true either, but it's certainly what we think, right? (Greg – MCR, humanities)

Prestige and quality of publication venues have been the main determining factors for many researchers to publish their research outputs. It is also a key component of most tenure, promotion, and evaluation metrics in higher education institutions. Hence, quality perceptions of publications outlets are important. When asked about their perceptions of the quality of OA outlets when compared to that of traditional outlets, most participants expressed that their perceptions of these outlets are the same. As articulated by Freya:

> No, I don't. I think the few open access journals I know about are really good because they're housed in institutions. And they're really good because I look at them and they have academics running them. I recognize the names. I know they're peer reviewed. The articles are really high quality. I would say they're excellent caliber actually. And so, the few that I know about are actually very good. (Freya – MCR, humanities)

However, some participants expressed the possibility that the quality of OA journals may be lower when compared to the traditional journals, but they were not convinced that OA venues are of lower quality. This is because prestige of some new OA journals may not be comparable to traditional journals that have existed for years and thus accepted by the community of experts and researchers as standard publishing venues. The quality of journals can also be hinged on the location of the journals and quality control techniques that exist in that country or continent. For example, one participant made a distinction of quality based on geographical location of journals:

> Not in Canada. I might, if I was outside of Canada, in the United States or the UK or Australia. Yes, I would consider there is some perception that it may or may not be warranted that the quality in open access journals is not as high. But I do not believe that is true in Canada. (Robert – MCR, humanities)

Robert's opinion on the varying quality of OA journals stemmed from his experiences working in different countries. This is particularly interesting because OA journals with poor quality are often linked with developing countries, and hence there is a possibility that their quality varies. This was further amplified by Sophia, who posited that:

> I haven't sought that direction of publication. I will say that I know that there's a journal like […] is an open access journal. And it seems to produce like regularly I see pieces of work that I look at and that seem to be fairly high quality. So, I don't think it necessarily means it's not, but I think it's possible. (Sophia – ECR, social sciences)

Although many participants shared a common perception that the quality of OA and traditional outlets are the same, one participant expressed that from her experience, OA journals are of greater quality than the traditional outlets. Ariana's perception of quality was mainly linked to editorial typesetting which she perceived as been higher in OA journals than it is in most traditional outlets:

> I actually think in many ways the quality of open access venues has been higher in my experience because it doesn't go through that stage of a non-specialist editorial. So, my experience with the quality as an author is that it's higher and my experience of the quality of what the page looks like and how easy it is to find articles is that it is just as high. If anything, I have been more impressed with the quality of open access publication than traditional publication because of the standards for typesetting. (Ariana – MCR, humanities)

This demonstrates that quality of OA journals and traditional outlets depends on a number of factors which if made available, the outlets will no longer matter.

Funders' OA requirements drive change to publishing

Many participants revealed that requirements for knowledge dissemination in most funding applications, particularly the SSHRC has made them to actively engage in OA publishing. This requirement has been instrumental for them to actively think about the ways in which they can make their research available to the public, beyond the traditional outlets. Although not including OA publishing or knowledge dissemination plans in grants application do not automatically disqualify applications, but that requirement has served as an incentive for many participants to publish OA. As discussed by Anthony:

> I think when you're applying for funding for example, like through SSHRC, when you're talking about your plan for knowledge mobilization. The understanding is they do tend to look for or prioritize publishing in open access outlets where possible, to make sure that

> that information is disseminated as widely as possible. It's not like if you say you're not going to publish in an open access journal, that means you're not going to get funding, but at least want to see that you're thinking about considering open access outlets where you can. (Anthony - ECR, social sciences)

The SSHRC's requirements for OA publishing of research funded by them has changed over the years. Including knowledge mobilization strategies in research grants applications has recently been taken seriously by the funding agency which make current of future application adhere to demonstrating their plans for OA publishing. As confirmed by Georgia:

> There has been a change in SSHRC's policy over the last decade. Because when I first started out as a student, SSHRC did not like the idea of paying open access fees. So now there's actually a policy - it's highly recommending or requiring you to publish Open Access. So, that's a real change. (Georgia – MCR, social sciences)

Although many participants acknowledged the growing requirements from SSHRC to publish OA, it is still not a compulsory requirement for them. This was clarified by Olivia, who asserted, "I know, my open access commitment is voluntary, rather than shaped by this particular grant, right? That might change for a future one but because I haven't applied for another one as a principal investigator." In contrary, one participant emphasized that the only reason she publish OA is because it is a requirement for her funded SSHRC project. These requirements and mandates are making research outputs available either in OA journals or through IRs. So, researchers have the options of publishing their research in OA journals or depositing pre-prints of their articles on IRs. As discussed by Sophia:

> Honestly, the reason I published open access was because it was a SSHRC funded research project. We wanted it published it was a really good journal and that was the only way to do it. So, that's why I engaged in that. The one that I was speaking of was simply because we wanted it published in this place and they had a 24-month embargo, and it didn't comply with SSRHC requirements. That was the main reason. (Sophia – ECR, social sciences)

IRs are usually run by academic libraries of higher education institutions. Pre-prints deposit in IRs have been used strategically by many participants for meeting SSHRC requirements for OA publishing of their research outputs. For instance, Evelyn explained, "my understanding of something like SSHRC is that it considers the repository as meeting open access requirements." Since, depositing preprints in IRs was considered as meeting OA requirements, many participants reported using IRs for meeting funders' OA requirements. As explained by Grayson:

> One of the policies that I'm aware of in more recent years was the Tri-Council or Social Science and Humanities Research Council decision have us make sure that funded research is available Open Access in some form. And so, sometimes that means posting the preprint version on the institutional database or even on my personal website or on SSRN which I guess is actually another format of open access. (Grayson – MCR, social sciences)

OA is necessary for bridging equity gaps in knowledge access

Participants were of strong opinion about the inequity that exists in terms of access to published research. These inequities are compounded because of the cost of accessing articles published behind paywalls. Hence, some participants noted that the main reason they publish OA is the ideal that everyone should have access to knowledge and as such it is important to bridge the equity gaps in access to research outputs caused by cost of access and exorbitant subscriptions fees. As Olivia and Farah discussed:

> I do think there's a global equity issue here as well. I think, ideally, knowledge belongs to everybody and humanity as a whole. And I think it's really important to democratize knowledge in a global level and open access really helps with that. I hope anyway, it's certainly a rewarding thing to be part of. (Olivia – MCR, social sciences)

> There is a huge equity gap that public do not have access to knowledge as much as scholars do have. So, basically the knowledge doesn't go too far, so we are just talking into our echo chambers, and I don't believe that should be the case. Everyone should have access to knowledge, and everyone should be able to create knowledge. So, with that I think open access is very much serving my equitable ideals of how knowledge should be shared. (Farah – MCR, humanities)

As Farah opined, everyone should have access to knowledge which then enables them to re-create knowledge. The subscription fees to paywalled journals have increased the equity gaps in access to knowledge, particularly among countries and libraries with limited resources and dwindling budgetary allocations. Users and researchers from such countries are excluded from accessing ground-breaking research which can help them tackle and overcome their societal challenges. Some researchers have to rely on their colleagues in developed countries to access the articles needed for their research. As such, participants reported publishing OA as a veritable means to overcoming access and equity problems. As further explained by Sophia:

> Open access, I think, is really important and especially for academics at institutions or in parts of the world where their institutions can't afford the subscription fees for these things, right? I think it's really, really important. And I think it's this situation of trying to square the circle where academics either have to pay for or not publish in certain publications even if they want to publish open access, right?… I realize that a lot of

> colleagues in other parts of the world don't have the same access. I work at a big institution; we have a lot of access to journals. (Sophia – ECR, social sciences)

Participants also asserted that publishing OA helps to ensure access to research outputs which are supposed to be public good in the first place. Some participants believed that having the pay-to-publish for the public to access their research outputs is not proper and it is a form of double-dipping. As echoed by Greg:

> I think it's incumbent really on people doing that work to make sure that the public can access that work free of charge. I think that's been the main driver for me; the type of work that I do fits very well into that format. And you know, not everyone does that kind of work I suppose but for me it would seem improper to publish in an environment where the public couldn't access it without paying for it (Greg – MCR, humanities)

The ideals of ensuring free access to research outputs was shared and held by most of the participants. Many participants believed it is ideological to ensure free access to publicly funded research and OA publishing helps them to achieve that. Some participants held a strong belief that knowledge should be open and that is why they publish their research as OA. According to Charles and Jessica:

> It's ideological, I suppose. I think that the work I do as an academic should be free. I mean it's as simple as that. I think that I'm an academic, I'm never going to get rich off my books. I'm not that kind of star, there are people who do that. But it's not me. And so that being the case, I think that what I do should be readily available to as wide an audience as possible (Charles - MCR, social sciences)

> I think the motivation just comes from knowledge should be open. Knowledge should be available particularly for researchers, institutions, or just even people who are in areas of the world where they're not necessarily affording a subscription to a journal or don't have a library that they [can go] through. So, I think for me it's just about making knowledge accessible, and I wish I could make all of my publications open access (Jessica – MCR, social sciences)

This therefore stresses the perception from many participants about OA publishing being instrumental for bridging the equity gaps in knowledge dissemination and access.

OA is a tool for achieving social justice and democratizing knowledge

Publishing OA is important to many participants who shared the views that free access to research helps ensure social justice. For some participants, paying to access research outputs is not justifiable. This is particularly important as some participants have been conducting research based on data they received from their communities. Publishing OA helps them give back to

their communities, especially as their research were informed by those communities. This suggests reciprocity of knowledge and giving back to the society. This is particularly important to one of the participants who is an Indigenous professor, whose data and knowledge was largely based on the knowledge transferred to her from her community – through knowledge transfer from her forefathers and past generations. As Amelia puts it:

> It was Aloha [responsibility] that motivated me to care for my community. And the responsibility comes from the fact that when you were taught and your teachers taught you and then gave you the ability to comprehend or understand or interpret, then it's your responsibility to turn around and pass that knowledge on, so that the knowledge continues. (Amelia – MCR, humanities).

Hence, it is incumbent on her to give back to her community and opening access to her research through open source helps her achieve this mandate. As she further explained:

> The open source is a life-changer for many of our Indigenous professors. You know it came up in a meeting, but we always think about our collective, in terms of what is the Black collective too. And someone said, "If you're black and registered on this academic stage, you can be brought from anywhere, but you have to be Indigenous from somewhere." The open source is what allows us to give back to our communities during this computer/digital publishing. And I know other people are thinking about it like sharing, sort of open collaboration between academics. (Amelia – MCR, humanities)

This notion was also held by another participant who works closely with communities and gather data from the day-to-day activities of her research participants. She opined that the need to give back to the community better described her motivation for publishing OA, more than do altruism. According to her:

> Because in a way the kind of feeling that it's a morally good thing to do in my case it's situational in the sense that's bound up in my social relationships. So, I think about access for the people who I learned from. It's kind of altruistic, but it maybe more about reciprocity. It's about saying, OK, I don't want to be the kind of [resaercher] that sort of swoops in, and still takes a bunch of data and then hoards it. I want people to be able to read what I write. (Olivia – MCR, social sciences)

This is why some participants have been advocating for equitable access to knowledge through open access. As Robert, an ECR in the humanities puts it, "other things being equal, I would rather publish in an open access journal where anyone can read my work. I view it as my duty to contribute to public knowledge". This was further echoed by Farah:

> And especially when we have a sector who's heavily doing social justice and have been doing that in the past three decades. So, those are the conversations that I think public would benefit tremendously… I have been doing equitable access to education like this is

> part of my research actually – to open access publications so that public can have access to them as well. (Farah – MCR, humanities)

Discussions around social justice by the participants also centered on ensuring that the public have free access to the right information – which Greg referred to as the "search for the truth" especially in a world where there is free access to wrong information. Hence, it is important to ensure that rigorous, important, and truthful research been conducted by the researchers are freely accessed by users. As asserted by Greg:

> I also think the world is just changing. I mean, we're in an environment now where classic media publication is no longer a thing, right? I mean we have a world where not necessarily the best information, but all information is free one away or another. And in that kind of environment, I think serious work that's being done by academics that the public can engage with, hopefully learn from, and join a conversation with, that work needs to be accessible. (Greg - MCR, humanities)

Furthermore, some participants believed publishing OA is a way of showing accountability, setting examples, and democratizing knowledge. Open access publishing gives a sense of accountability to researchers, and a sense of accountability to the public, by ensuring that the work they do are freely accessible. As such, from an ethical standpoint, some participants would rather ensure public access to research than prioritize their ambitions. This opinion was shared by one participant:

> Ethics or ambition, you know, so I think it's a balance. And for me especially when I'm publishing with students – like, how do we set a good example for democratizing knowledge, especially if I'm working in areas of social justice-oriented work? And I want the communities I work with to be able to access that information. I think it's important that I do everything I can to make sure it's not totally hidden behind paywalls. We're not to assume that community only wants summaries, or they should have access to everything we're doing. So, I think that from an ethical standpoint, it's more important than my ambition or my career stage to try to do what I can to publish open access. (Emma – ECR, social sciences)

OA helps to improve readership and knowledge mobilization

One important reason why some participants engage in open access publishing is to improve the reach and readership of their research, especially among audiences that may not think about the traditional venues such as journals and books. Participants revealed having engaged in knowledge mobilization strategies which helped to reach readers with foreign languages, policy makers, and practitioners. These include translating their research into other

languages, summarizing, and converting their research outputs as artistic visual representations, photo essays, and policy briefs. As discussed by Charles:

> There was a master's student in a translation program in China who wanted to translate part of my book into Chinese, which again I'm like this is really cool. I'm deeply flattered that that people would like to do that. But the reason they could do that is because they could download the PDF for free (Charles, MCR, social sciences)

Similarly, OA is believed to help ensure knowledge mobilization of research outputs by some participants. For instance, Evelyn discussed:

> I can think of scholars or colleagues who are trying to resist that sort of dominant pull to publish where they think is good. I've seen a few journals come up … with a few different things, like more in terms of art artistic visual submissions you know, photo essays, etc. And as part of the kind of not knowledge dissemination, knowledge mobilization like having something more open access would help people reach wider audiences potentially (Evelyn - ECR, social sciences)

Moreso, some participants believe OA publishing helps to uphold their beliefs for sharing knowledge as it enables readers to access it freely and contribute to the creation and advancement of knowledge. In fact, one participant believed the OA helps to reduce the consumption of fake news because readers can have access to sites that contain rigorous research. As Farah expatiated:

> Knowledge creation should be created by the public, we should not consider ourselves elites who have access to knowledge creation and consumption. This is just my general beliefs about life and humanity/post humanity, that I want knowledge to be shared. (Farah – MCR, humanities).

Similarly, OA helps increase the reach of research outputs. This is particularly important in some disciplines that are usually private, wherein access to such research is fundamental to expanding conversations and knowledge. As echoed by Greg and Evelyn:

> I do think in the law discipline and again because even if you do private law, it's a public discipline, right. So, you know you're engaging with a legal framework or context that governs everybody, right? I think, there's going to be more conversation about it. But my major thought there would be there's an evolution or certainly not, if not an evolution that then certainly a gradual realization that this is a good thing for us, for lawyers. And you're probably going to get read by more people that matter if you're open access. (Greg – MCR, humanities)

> To extend to the widest reach possible. Now I've worked at different institutions, so I know some institutions have better libraries, library databases and access through libraries than others. So, I think the open access would allow wider reach, particularly countries or parts of the world where there's less money for library and journal subscriptions. (Evelyn – ECR, social sciences)

Further, OA publishing was considered by some participants as a tool for increasing the impact of their research, resulting in increased reputation. This is because as their scholarly works are being read by users and other researchers, their reputation would increase. This was echoed by Farah, an MCR in humanities, when she posited that, "universities measure our success based on impact factor. So, open access will help the impact factor because it's accessible to public. So, that's how it helps, I think." As such, researchers strive to make their works available in open access to increase their readership and reputation. As further explained by Paul:

> Well, I'm not going to see any money from having my work published right. So, the actual benefit I get is entirely reputational. So, I guess maybe I'll see more money by having my reputation being more sold after getting other contractual offers etc. So, I don't care if people get to my work by paying or by free or by piracy it doesn't matter. I want as many people to read my work as possible. (Paul – ECR, humanities)

Interestingly, many participants reported publishing OA because they perceived it is pragmatic or practical for them to do so. They noted that publishing OA helps to increase citations and impact of their research. By publishing in OA outlets, users can easily access their research and in return this improve their impact and citation rates. The strong relationship between OA publishing and increasing citation rate was strongly held by one participant. According to Georgia:

> If I'd be honest, I would say every time I'm asked to make a case for promotion or some kind of recognition of my work or merit or whatever, I have to speak about the impact of my work. And it does make it easier when I can speak to the rising citation rates of some of the work that I do. The ones that are open access are the ones that people are citing more because they're finding them easily. [There is] a pretty strong relationship between those articles that are accessible open access and those are the ones that get cited. (Georgia – MCR, social sciences).

With an increased readership to scholarly outputs, some participants believed that their research would have impact on policies and decision making by the government. This impact could help improve the justice system and systems of governance. According to Grayson:

> Open access allows me to share my work with those audiences and to try to, I mean, on the one hand, just try to have readers, but on the loftier goals to actually have policy influence to help convince governments what they should and shouldn't do. And I've been fortunate to be able to do nonpartisan policy advising […] for various parliamentarians.

> And I think open access helps facilitate that because it gets the work more broadly distributed to those audiences. (Grayson – MCR, social sciences)

In summary, most participants positively perceived OA publishing because they believed OA is of equal quality and prestige when compared to the traditional outlets, and that it helps in meeting funding requirements. Others positively perceived OA because it is instrumental for bridging equity gaps, and that it helps to democratize knowledge, improve readership, and help their knowledge mobilization efforts.

5.3.3.2 Negative perceptions stifle researchers' OA publishing

Participants with negative perceptions expressed their concerns for OA publishing and why they preferred the traditional publishing route. They also extensively discussed why they objected to publishing their research outputs in OA outlets.

Objection to APCs stifled researchers' OA publishing

Due to the cost of APCs, many participants expressed their displeasure for OA journals that charge APCs. This is because they believed that APCs models discourage their OA publishing efforts. Some participants got discouraged about OA publishing because of having to pay to publish. For example, Jackson, an ECR in the humanities explained having his article accepted in a prestigious hybrid journal but was discouraged to choose an OA option as he needed to pay APCs. In his words, "the problem is then I need to pay $3000 or something like that to make the article open access across the board." Hence, Jackson chose to publish in a paywalled journal with an embargo period of one year. This concern was also shared by Grayson who revealed:

> I think social science and humanities disciplines paying to publish, feels more like a STEM model than a social science and humanities model. I do wonder if that affects attitudes even though you're paying not for just getting published, you're paying for open access. But I wonder if it does affect some people's mindsets, it certainly [does]. Initially, when I first started learning seriously about open access, the idea of paying for it rubbed me the wrong way. (Grayson – MCR, social sciences)

Other participants have also expressed strong concerns about the APCs models of many OA journals as egregious, producing a vicious circle. For instance, Farah explained why paying to publish creates a vicious circle:

> I believe that knowledge should be shared for free with everyone and open access gives us that access. However, us having to pay for it is a bit problematic – it creates a vicious circle, I think. Researchers in Global North countries pay for the research. The research is being done and the research is only being consumed by people who can't afford it. I think it's a sick circle that we need to a change at some point. (Farah – MCR, humanities)

This shows that some participants are firmly opposed to the principles behind APCs and why some journals charge fees to make their publications OA. As Paul, an MCR in the humanities also pointed out, "the egregious [APCs] fees that are associated with Elsevier and with other publishing companies, do not really exist in the law journal market. So, that might be another reason why the discussion is mostly absent." The perceptions about APCs by the participants has negatively impacted their OA publishing. In fact, some participants find APCs to be predatory and undemocratic, and this has increased the notion that most OA journals are predatory journals as they are just after researchers' limited funding money. For example, Olivia, an MCR in the social sciences exclaimed, "I think article processing charges are anti-democratic and unfair. Even though I also think that the amounts of money that the traditional publishing houses make from journal publishing is crazy." Similarly, Emma stated:

> I find [APCs] to be quite predatory, and it doesn't have to be that way. It should be quite cooperative and supportive, and I know that there's infrastructure that's needed, but you know the fees that Elsevier is charging to our libraries so that we can buy back our own research seems really troublesome to me. (Emma – ECR, social sciences)

Some participants believed that most traditional publishers are extortioners. This is why it is surprising to them that some OA journals, particularly the hybrid OA and gold OA journals, are inculcating the same practices of making money from researchers' hard work. Some participants noted that the publishing houses do very little in the publishing process, and it is not justifiable to charge huge fees to get them published. As Jackson, an ECR in the humanities, pointed out, "this information [on APCs] is hidden for obvious reasons. But if you look at the amount of money, they are collecting to provide these very limited services, there's just no rational reason."

This shows that many participants believed that APCs models are predatory and should not be encouraged. As such, many participants are strongly opposed to the ideology of pay-to-publish model, because it is not the best model for achieving the ideals of OA. In addition, some participants believed that having to pay APCs is double-dipping and unfair to the public and

taxpayers. This is because research is already funded by the public money and having the libraries pay for subscriptions to journals is not fair. As nuanced by Olivia an MCR in the social sciences, “research is already publicly funded, and then the libraries have to pay subscriptions to access the journals. To me that is just so unfair that people are making money out of that process.” Hence, some participants expressed their dislike for pay-to-publish models. For instance, Emma echoed:

> I also find the current journal model where; you know we as academics doing our work with our salaries and then volunteering our labour or it's part of our salaried work to review and contribute to the process. I find the current model of paying for journals predatory, it's like extortive. There's extortion, it's exploitative, and there’s discussion going on in terms of access to publicly funded knowledge. So, that really inspires me to publish open access when whenever I can. (Emma – ECR, social sciences)

Similar to Emma’s opinion of the pay-to-publish model of OA, Jordan an MCR in the social sciences also exclaimed, “It's awful. When you have a pay-for-play scheme like they have so many of them and people are being asked to pay so much money.” This explains why some participants in the humanities and social sciences disciplines are reluctant to publish their research outputs in OA journals. The pay-to-publish model of many OA journals continues to serve as a barrier to OA publishing practices of many researchers, particularly among those in their early career stages.

Hence, participants reported that the amount of money required to publish in some pay-to-publish journals made them to seek OA journals that won’t charge them any APCs to publish. They believed that they have done so much work in conducting their research and in many cases providing free services for journals in the form of peer-reviewing. Hence, they opined that having to pay-to-publish their research outputs is uncalled for and they could not comprehend the rationale behind that. As Farah echoed:

> If you have to pay let’s say, for example, $3000 per article for it to be published for free on top of free labour that scholars are doing as peer reviewers and editors, they also have to pay the journal for it to be accessible to everyone. I think there is something very wrong in this conversation. Basically, it’s a for profit business model rather than caring for knowledge being shared for free**.** (Farah – MCR, humanities)

Based on their perceptions and dislike for APCs models, some participants have expressed their preferences for journals that do not charge publishing fees. For example, Charles emphasized, “I have no grant money to pay for publishing fees, and so I choose journals that

don't require publishing fees." Thus, it is important to promote no-APCs based models such as the diamond OA journals, which do not charge authors to publish, nor readers to read articles published in them.

Preference for traditional journals over OA journals

Some participants expressed concerns over the quality of OA journals, particularly regarding peer-review and impact ranking of the journals. This is because their experiences and preferences for traditional journals were shaped by the need to publish in highly ranked journals when preparing for tenure and promotion. For others, their preference for traditional journals were informed by the influence of older professors who have been the face of scholarly outputs evaluation in their disciplines. And since researchers are expected to publish in high-ranking journals to secure tenure, they are inextricably compelled to prefer traditional journals to OA journals. As Grayson explained:

> I think there are some academic traditionalists or people who have very narrow perceptions of quality. For example, there are people who only look at impact factor ranking. And I think that in aggregate that makes them perceive open access journals as lower quality because it's the older, stodgy, or subscription-based journals that tend to be higher in the rankings. (Grayson – MCR, social sciences)

For other participants, their preference stemmed from the quality of peer-review and "stamp of approval" of traditional journals. They believe the quality of peer-review is guaranteed in traditional journals but may not be the case in OA journals which are usually newer, with less standardized practices in place. For example, John explained:

> I think, yes. I think the problem is how the peer review is guaranteed for the individual outlet. But in a traditional field, there are few new journals because basically you only need new jobs because you want to tackle the quantity of outlets not the quality or new tendencies. (John – MCR, humanities)

Although there are negative perceptions regarding OA publishing, the positive perceptions by participants were significantly higher than the negative perceptions. This indicates that most of the participants are more positively disposed to publishing OA.

5.3.4 Strategies for Improving OA Uptake in the HASS Disciplines

This section presents five strategies for improving OA uptake and reducing the barriers to OA publishing in the HASS disciplines, as suggested by the participants. Figure 13 presents the diagrammatic description of the strategies for improving OA publishing.

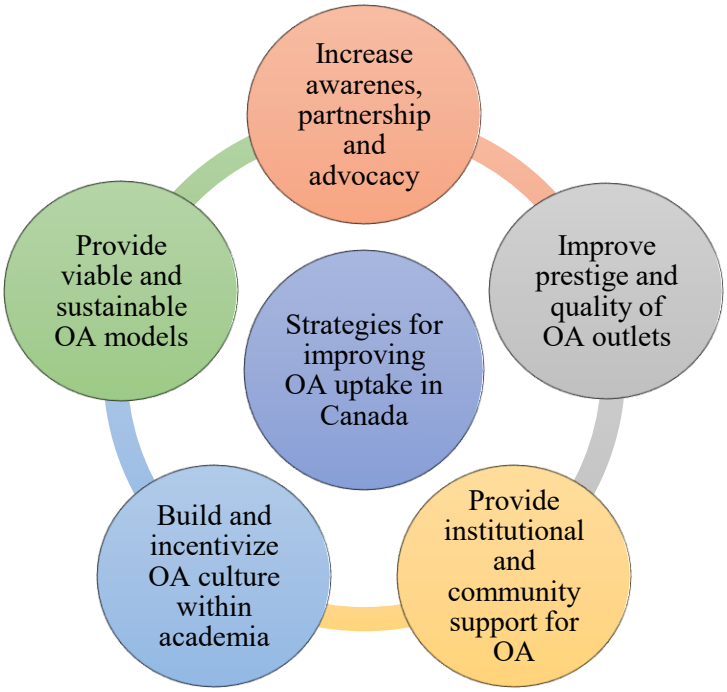

Figure 13. Strategies for improving OA uptake in the HASS disciplines

5.3.4.1 Increase awareness, partnership, and advocacy for OA publishing

Many participants discussed the importance of awareness creation, support, and advocacy for OA publishing as an important strategy for improving OA uptake in their disciplines. Participants lamented the absence of conversations around OA, and limited support for OA publishing in their disciplines. They revealed that to see a systemic change or cultural shift in support of OA publishing, there has to be an increasing discussion of the benefits OA publishing. For instance, Evelyn, an ECR in the social sciences equivocally suggested, "to bring about any kind of systemic change, I think it would have to be like more conversation about it or more support." The systemic change Evelyn was talking about has to do with a system where OA publishing is the norm or supported. Similarly, Freya, an MCR in the humanities discussed the lack of discussion about OA in conferences. In her words, "I have been going to conferences for a long time, and I have never heard a panel or speakers talking about the importance of open

access, which is really strange because it does seem like something that's very important." Hence, several participants stressed the need for more conversations, awareness, and advocacy for OA publishing by libraries and associations, and in conferences. It is important to talk about how OA is done and what the researchers should know about it. For instance, Georgia stressed:

> One thing that has been helpful for us that I think would be helpful for other institutions is when our institution puts on workshops featuring the librarians and research facilitators that talk about how to make your work open access, and kind of demystify some of what goes on. (Georgia – MCR, social sciences)

Similarly, one participant discussed the need to demystify OA publishing, informing researchers of the benefits and challenges they may face while publishing OA. According to Greg:

> We should probably be having that conversation and this research that you're engaging in is important. Because I think that's what this conversation is about – is to try and make sure that the institutions probably are trying to actually focus on what's the good, the bad and the ugly of open access publishing. And having those conversations at an institutional level… I don't think I've even heard the term open access publishing other than from my own institution. Right? It's not a not a conversation that's being had. (Greg – MCR, humanities)

Further, participants revealed that not receiving enough support and help for OA publishing is part of the barriers for not engaging it. This confirms the need for more support and help around OA publishing in higher education institutions. As discussed by Angela:

> How do we go about publishing and how do we like publishing open access versus not open access and all those other things, right? Like this 40% time, it gets eaten away so quickly with other things that's like, is that yet another thing that we need to find out and we need to learn?. And there's nobody out there – that's for me anyway – that will really guide me through the process. (Angela – ECR, humanities)

In creating awareness and support for OA publishing, some participants suggested the need to partner with libraries at the local level. This will help researchers learn about OA publishing, with necessary toolkits and learning resources they would need. This was echoed by Freya who suggested, "maybe partnerships with local libraries might help, which means you then have the municipality involved." She further elaborated:

> I think the onus might be on the open access journals to create more panels and roundtables to talk about how important they are. I think they're important. I think they are really urgent, and in other ways to do it top down from within institutions themselves

> is to encourage people to publish more open source and reward that accordingly. Because academics are motivated by things. (Freya – MCR, humanities)

The conversations around OA publishing should be seen as important because OA helps to ensure that research remains the public good and the public should access it freely. As argued by Greg:

> Now thinking about that from an institutional perspective. Why are we not having that conversation more openly in an environment that's publicly funded, which our university is right? Not exclusively like money is generated from businesses money generated from fees, but the vast majority of the money that operates my university is from the public purse, you know, $300 - $400 million a year is being put into the institution by the government by our taxpayers basically. (Greg – ECR, humanities)

Participants' discussions demonstrate that they are thinking of ways to improve OA uptake in their disciplines. Hence, there is a need for more support in terms of awareness creation, partnership, and strong advocacy for OA in the HASS disciplines.

5.3.4.2 Improve prestige and quality of OA outlets

For some participants, it is important for OA journals to be prestigious to attract them to publish OA. This is necessary for improving the uptake of OA publishing because once the issue of prestige is sorted out, then researchers might be able to publish in them and get expected recognition for their efforts. As Paul, an ECR in the humanities asserted, "I think the reason why people publish in non-open access to begin with is just the prestige of the title itself." This suggests that preference for traditional journals by most researchers, particularly the ECRs is as a result of the prestige those journals enjoy. Hence, improving the prestige and quality of OA outlets is one of the important steps towards improving OA uptake in the HAS disciplines.

Paul's view on prestige was confirmed by one participant who shared his reasons for publishing in an OA journal:

> That journal has an incredible reputation. I mean it is probably one of the kinds you considered very high level of scholarship. But nobody pays. There's no pay, nobody gets anything. And the people that work there do it and do the editorial work because the journal has a very good reputation. (Anthony – ECR, social sciences)

This suggests that ensuring quality in OA journals is important to attract service commitment of reputable researchers which then have a positive effect on the prestige of the journals. One way of improving prestige of OA journals is to improve the quality of peer-review

and editorial process. This is an important factor for deciding the quality of OA outlets by John, an MCR in the humanities. In his words, "the peer review has to be as easy as well, double-blind, over the same system." Quality peer-review improves the general outputs of journals and attract reputable researchers as reviewers and authors. Once the prestige of journals has been established and sustained over a period of time, it will be left for researchers to continue to publish and serve as reviewers for the OA journal. This was echoed by Jackson:

> I think the main thing, as far as I can tell, is to try to establish some really good open access journals that really are prestigious and that are regarded as prestigious in the field. I think once there are a few that will make space for there to be more. I think that it's not just the individual journal prestige that matters. (Jackson – ECR, humanities)

Hence, improving the quality and prestige of OA journals is an important strategy for improving uptake of OA in the HASS disciplines.

5.3.4.3 Provide institutional and community support for OA

Participants suggested that providing institutional and community support for OA publishing is an important strategy for improving OA uptake in their disciplines. This support ranges from improving funding for OA publishing, to promoting the needs for OA by journals as well as providing resource persons who will help to answer questions and inquiries on the process of publishing or developing OA. For instance, Emma, an ECR in the social sciences suggested that there needs to be "increased funds from universities or from the Social Science Humanities Research Council to establish open access journals." Since publishing includes monetary cost for editing, journal hosting and maintenance, it is expedient that journals are properly funded to cover these costs of operation. Hence, institutions of higher learning and funding agencies should provide adequate and sustainable funding that will help journals offset the cost of OA publishing.

Emma's suggestion on providing funding to journals was echoed by Jordan, an MCR in the social sciences, who stressed the importance of providing journals with the resources they need. In his words, "I think a lot of that comes from not properly providing resources to editors to do the work that would be required to get a journal so that it has a good reputation, and it keeps a good reputation." This confirms that sustaining the prestige of OA journals – which drives researchers' patronage – is incumbent on the provision of adequate resources by

institutions and funding agencies. In addition, institutional support could also come from funding requirements for OA publishing in grants applications. This will serve as incentives to publish OA if there is a requirement for OA publishing in grant applications. According to Anthony:

> If the different funding organizations say "OK, look, in order to obtain future research grants, you have to publish in open access outlets or when you're submitting your grant, you have to have a demonstrated record of publishing in open access outlets." Then you know everyone else is going to fall in line because research grants are kind of the lifeblood of a researcher's work. So, that would make a big difference. (Anthony – ECR, social sciences)

The inclusion of OA publishing in grant application will serve as an institutional support, and as such researchers will see the need for more engagement in OA publishing. It is equally important to emphasize the significance of OA to researchers and their academic profiles and recognition. Support system from researchers' community might increase their confidence to publish in OA venues, especially if researchers could see their colleagues publish in the same venues. As Jackson, an ECR in the humanities echoed, "it is like having a community of users that are comfortable with it. And that all come to the same place for that information." Hence, it is important to project the importance of OA among researchers, as well as to project their value. As Jordan further explained:

> More realistic disclosure about the value of it. You know, though, because there's a lot of expectation among people who don't know about publishing that when they put something into an open access or not, they pay a few 1000 bucks, that it's just the reputation matters of the journal. And so, you know, unfortunately, if they're putting in journals that had bad reputations with bad scholarship, that's going to filter down to how scholars interpret their scholarship. (Jordan - MCR, humanities)

Institutional and community support system is important to improve OA uptake among researchers. For many journals, the commercialization of their operations and profits have consistently affected researchers' engagements in OA publishing. As such, one participant suggested that those commercial structures need to be eradicated to improve OA publishing in the HASS disciplines. The impact factor evaluation systems have also put scholars from the HASS disciplines at a disadvantage and has strengthened journals with commercial structures and focus. Hence, some participants suggested removing these structures in order for OA publishing to thrive among the researchers. As Farah discussed:

> The impact factor doesn't really work in humanities and social sciences, and that's how [our success] is being measured in our own University […]. I'm sure in a lot of institutions as well. So, that also puts social sciences and humanities at a disadvantage, because this is not how we push our knowledge and our fields forward. (Farah – MCR, Music Education)

Hence, there is a need to remove commercial structures hindering OA publishing by removing journal embargoes for post-prints deposit in IRs. As echoed by Sophia, a support system which removes embargo period in postprints deposit is necessary for improving OA uptake. In her words:

> Continued work between the funding agencies and publishers to align those sort of preprint embargoes with what funders are requiring. So, like you know, 12 months. A preprint within 12 months on some sort of a public platform… at a broad level, sort of trying to align publishers embargo policies with the funders requirements. Things such as having institutions pay for open access publishing. If it's work that's funded by let's say tri-council, so great. (Sophia - ECR, Geography)

Postprints deposit in institutional repositories will improve if journals remove 12 months or 24 months embargo period and allow immediate deposit of post-prints. Hence, some participants suggested that libraries and funding agencies should collaborate with journals to remove embargo periods for postprints. This will provide institutional and community support for OA publishing in the HASS disciplines.

5.3.4.4 Build and incentivize OA culture within academia

Participants discussed the necessity of building and normalizing OA culture within academia. They revealed that this is an important step towards improving OA uptake in their disciplines. Some participants argued for a cultural shift in favour of OA publishing, particularly among older faculty members. They believed OA publishing will be normalized if its embraced and practiced by older professors. This is because they are more influential and doing so will set a precedent for junior scholars to follow. For instance, Freya, an MCR in the humanities opined, "I think normalizing [OA publishing] a bit more in the culture, because a lot of people don't always realize more funding and support of open access journals from universities would be a great start." This suggests that allocating more funding for OA publishing by universities and funding agencies might help normalize OA publishing. Another participant emphasized:

> I think that one of the hurdles we face is this idea of prestige and tradition. And open access is somewhat of an uncomfortable fit there sometimes. So, it's this common normalization, and it becomes normalized when leaders in the field begin to embrace it. That's where the change is going to come from. (Greg – MCR, humanities)

Greg expressed his opinion in normalizing OA publishing within the academia, emphasizing the importance of having the leaders lead by example by publishing OA. He firmly believes that others would publish OA if influential professors were prioritizing and publishing OA. He summarized by admonishing older faculty, "if you're a leader in these academic fields, really think about leading the way in open access publishing because people will follow." Similarly, Angela suggested that it is important to educate older faulty on the usefulness of OA. In her words, "educating the older faculty [on open access] and making it allowable for younger faculty or newer faculty… That is just another avenue and a way to get out there but that takes a lot of education." This implies that younger faculty members will be encouraged to publish OA if older faculty are supportive of it and are actively engaged in OA publishing.

However, one of the participants warned about making OA publishing a requirement in the academia. Greg believes that although it is important to normalize OA publishing, making it a requirement might cause faculty to publish in outlets that have low quality. According to him:

> Building culture – I'd hate to make it a requirement but building a culture of acknowledging that open access is legitimate prestigious work. I'm reluctant to make it a requirement 'cause that can create perverse incentives to potentially publish in a low publication or low-quality journal just to meet the requirement. (Robert – ECR, humanities).

In addition, participants also discussed other strategies for building the culture for OA publishing by recognizing OA publishing efforts of researchers as part of their university service works. Some participants believed that OA uptake will increase if OA efforts in terms of engagement and advocacy are recognized as part of professors' service load. This is particularly important as professors are already inundated with work and tend to circumvent additional loads of work beyond what they already have. Hence, if institutions, hiring, or promotion committee recognize OA publishing efforts, advocacy and engagements as service loads, more faculty might include that as part of their workload, thereby improving OA publishing. In more practical terms, one participant suggested the inclusion of OA publishing in tenure requirements to normalize OA publishing within academia:

> We talked about tenure requirements and that sort of thing. So, if it was made clear to new researchers that when they go up for tenure, the committee will also be looking for a track record of publishing in open access, and it's then you know that's what people are going to do. So, I think things like that would make a difference in participating. (Anthony – ECR, social sciences)

This shows that participants are mindful of and thinking about normalizing OA publishing in the academia, and that starts by recognizing and incentivizing OA efforts and advocacy among researchers.

5.3.4.5 Provide viable and sustainable OA models

Similar to normalizing OA publishing, participants also discussed the need to provide and support viable and sustainable OA models such as the diamond OA and association's journals. In order to limit the influence of for-profit publishers, there is a need to support journals that do not charge APCs (i.e., diamond OA journals) or those that charge little fees for access, such as those from disciplinary association's journals. This support may be in the form of funding these journals or advocating for their patronage, as well as improving their prestige. As suggested by Grayson:

> Maybe they would change that culture by changing the rules and changing how funding happens. And it might make more sense to have funding go to disciplinary associations and even to universities just to provide the editorial infrastructure for self-publishing by institutions and associations so they didn't have to rely on subscriber money, and everything could be automatically open access. So that's my big utopia. (Grayson – MCR, social sciences)

Interestingly, some participants understood that it will take time for disciplinary association's journals to build the prestige and reputation similar to big publishers such as Elsevier and Taylor & Francis. However, it is important for authors and funders to support the efforts of these journals which are more viable and sustainable for OA publishing without the associated cost of APCs, that are largely unsustainable. One participant revealed that one way for association's journal to build sustainable OA publishing is by surveying their members on the cost of APCs. This signifies the need to carry authors and members along in key decision-making regarding operations and sustainability of OA journals. As society or association journals belong to the society and people, efforts for sustainability should be informed by them.

Other efforts to providing viable and sustainable OA models were discussed by the participants. These include the patron model and pay-to-submit model. These models helped some association and society journals to sustain their journals by covering the cost of publishing. Some journals charge around $40 a year, which helps them to go open access. One participant described the membership subscription fee he has been paying to his association journal:

> Through a patron model. So, I donate $10 a month. I've been giving $10 a month to [our association journal] for two years. Oh my goodness! which isn't a lot for me, you know. I mean it's worth it. I download enough books from them. I'm sure I'm getting my money's worth, but they have enough people doing that to make it viable. (Charles – MCR, social sciences)

On the other hand, the pay-to-submit model is the publishing model where authors are charged a certain amount when submitting their articles. This would help publishers to cover the cost of running the journals and publishing OA of accepted works. As revealed by Jackson:

> We are moving to a pay-to-submit model. So, you pay to submit your article, and this is a common open access journal model that's been adopted in Philosophy. So, you have something like a $20 fee to submit an article, and with those contributions, you can actually cover the costs of maintaining a web platform for the journal and copyediting fees and all the other factual intellectual labours… My hope is that that will become the model and that some of those journals will become quite prestigious. (Jackson – ECR, humanities)

These models are already being adopted by some of the participants' association journals, and as such they are recommending the acceptance and adoption of such models for sustaining OA publishing by other association or society journals in the HASS disciplines. Some participants think this is a better approach to providing viable and sustainable OA publishing, particularly OA journals that are not funded by governments or funding agencies.

5.3.5 Summary of thematic analysis results

Interview findings showed that disciplinary norms and practices drive OA publishing in the HASS dsciplines. This is because many participants from social sciences discussed growing norms and support for OA publishing through preprints and postprints deposit in IRs and subject repositories. Participants from the humanities disciplines were more limited in their OA publishing because of the tradition of monograph publishing, although they perceived the quality of OA journals to be equal with the traditional outlets. Also, findings showed that OA practices in the HASS disciplines are resistant to change because of institutional and systemic barriers.

The most notable barriers discussed by the participants include limited funding to pay for APCs and tenure requirements which largely favour publishing in prestigious top-tier paywalled journals. Other barriers include technical issues in IRs (e.g, findability, discoverability, and accesbility limtiations), conflicting and unssoprtive OA policies from funders, and growing equity gaps in OA publishing.

In terms of reserchers' perceptions of OA publishing, many participnats perceived OA journals to be of equal quality as the traditional journals. By quality, participants meant that OA journal have a high quality process in place, and that all papers get proper peer reviews, and are properely vetted. In addition, many particpants perceived OA publishing as a means of ensuring public access to research, democratizing knowledge, and achieving social justice. On the contrary, few participants discussed that OA journals lag behind in quality and prestige when compared to traditional journals. Hence, they preferred the traditional outlets to OA outlets. However, participants who positively perceived OA publishing were more than those who negatively perceived OA publishing.

Five strategies for reducing the barriers limiting OA publishing in the HASS disciplines emerged from the interviews. These are: increase awarenesss and advocacy for OA publishing among researchers; improve the prestige and quality of OA journals through quality peer-review; provide instittutional support for OA publishing in higher education institutions; build OA culture within academia by encouraging older faculties to publish OA; and provide and fund viable OA publishing models, such as the diamond OA.

The next chapter provides the discussion of findings in relation to the study's research questions. It also provides the integration of both questionnaire and interview findings, comparing findings with existing studies.

Chapter 6: Discussions

6.0 Chapter overview

This chapter integrates and discusses the questionnaire and interview findings. The overarching aim of this study is to assess open access scholarly communication practices of researchers in the HASS disciplines in Canada. To achieve this aim, four research questions were posed:

RQ1. What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada?

RQ2. What factors influence researchers' open access publishing practices?

RQ3. How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication?

RQ4. What inhibits the open access scholarly communication practices of ECRs and MCRs in HASS disciplines in Canada?

The discussion of the research fundings is organized in sections according to research questions. Sections 6.1 and 6.2 contain discussion of findings from the quantitative phase (questionnaire) which answered research RQ1 and RQ2. Sections 6.3 and 6.4 contain the discussion of findings from the qualitative phase (interviews), most of which were not covered in the quantitative phase. The interviews helped to explain the questionnaire findings in more depth, and also addressed the questions that could not be covered in the questionnaire. Hence, the interview findings are given more weight and priority. Sections 6.3 and 6.4 contain the discussions of the perceptions of and barriers to OA publishing as discussed by the interview participants, specifically addressing RQ3 and RQ4. The chapter also discuses the findings in comparison with existing studies. It closes with the study's contribution to research, and theoretical contribution to library and information science (LIS) scholarship.

6.1 Open access publishing practices of researchers

RQ1: *What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers' OA publishing practices based on career stage and academic disciplines?*

This section provides the discussion of findings on OA publishing practices of researchers in the HASS disciplines of Canada, as well as how they compare with existing studies. The discussion focuses on three main findings on OA publishing practices of researchers and concludes with research question one summary.

6.1.1 Varying use of OA outlets due to career stages and disciplines

From the quantitative findings, results suggested that mid-career researchers (MCRs) have published more in OA outlets that did early career researchers (ECRs). This is evident as 70% of MCRs have published in OA journals in the past three years, compared to the 37% of ECRs who did. The same was noticed about the use of IRs, as 47% percent of MCRs have deposited their preprints in IRs compared to only 33% of ECRs. As reported in this study, the age range of tenured faculty was between 41-50 years. This finding corroborates Rodriguez (2014)'s study which found that tenured professors in a younger age range (41-50 years) reported higher percentages of OA publishing history. This suggests that career security is necessary for pushing forward with OA goals, but those who are earlier in their trajectory and have received exposure to OA don't yet have that security. As such, they may choose to publish in traditional journals. Notably, it is also possible that people who are further along in their careers are somewhat less likely to have been exposed to these discussions and so may have less formed views of OA and the best ways to achieve its goals. This may explain my some MCRs have not published in OA outlets.

Further, quantitative results also showed that respondents have published more in OA journals than other OA outlets such as IRs, OA monographs, and OA conference proceedings. However, qualitative findings revealed that participants have used IRs and subject repositories for OA publishing, especially those from the social sciences. Some participants revealed to first deposit their preprints in IRs or preprint servers before sending out their manuscripts for journal review. While some participants viewed preprints deposit as a way of ensuring access to their scholarly outputs, others regarded it as a way of ensuring their intellectual property rights. An

existing study (Miguel et al., 2011) published over a decade ago found that IRs uptake surpassed the percentage of OA journals with a difference close to 30% in nearly all cases. This situation seems to have changed as quantitative findings suggest that researchers are publishing more in OA journals, although they are also depositing their pre-prints in IRs and subject repositories.

Interview participants from the social sciences discussed having used IRs as part of the scholarly communication practices. This finding confirms another study conducted in Germany (Eger et al., 2015) which found that 36% of respondents from social science disciplines such as business and economics had higher rate of self-archiving in IRs. The interview findings helped explain the probable reason for the increasing use of IRs by many participants from the social sciences. This is because many participants regarded preprints deposit as meeting OA publishing requirements by most funding agencies. Hence, many participants in the social sciences reported using IRs to meet OA publishing requirements especially when they are not able to afford the gold OA publishing fees (APCs). This contradicts an existing study which found a decline in the use of IRs (Björk & Solomon, 2012). However, it should be noted that preprints deposit in IRs or subject repositories makes available an unvetted and potentially problematic version of the work OA. The tri-agencies recognize postprints (author accepted manuscripts) deposit as meeting the requirement for OA publishing of funded research (Tri-Agency, 2016). Several studies have also confirmed that OA journals have received more engagements than other OA routes (Demeter et al., 2021; Miguel et al., 2011; Mueller-Langer & Watt, 2014), and that is consistent with this study.

Furthermore, the quantitative findings revealed that participants from the social sciences have generally published more in OA outlets than those from the humanities and arts disciplines. Findings showed that 71% of respondents from the social sciences have published in OA journals and IRs, while fewer respondents have published in monographs (18.3%) and OA conference proceedings (28.9%). Existing studies have found that a decline in the use of OA outlets by researchers in humanities and arts disciplines has been linked to the uncitedness of OA monographs (Dorta-Gonzalez et al., 2020). Dorta-Gonzalez et al. (2020) found that articles from the arts and humanities had higher uncited rates above 85%, particularly from literature and literary theory (89%), classics (87%), visual arts and performing arts (87%), and religious studies (85%). This brings a new perspective to citation advantage of OA, which varies by disciplinary norms and practices. The uncitedness of OA articles from the arts and humanities may be

responsible for the low of uptake OA in humanities disciplines, as most research outputs in these disciplines are still predominantly traditional.

Quantitative findings also revealed that publishing in OA monographs is low among all respondents, particularly from the social sciences. This may be because monographs publishing is more common in the humanities and arts disciplines, and the number of humanities professors who responded to the questionnaire was low. Another reason could be because switching traditional monographs to OA monographs is currently challenging. This finding was confirmed in the qualitative findings as some participants (e.g., John) revealed the difficulty with converting existing monographs in the humanities to OA due to limited funding and age-long tradition of the discipline. This confirms existing studies which reported that the excessive costs of producing monographs are a key structural factor limiting OA publishing in the humanities (Crossick, 2016; Eve, 2017).

6.1.2 Exploring alternative means of scholarly communication

Although the questionnaire findings suggested that many respondents from the humanities and arts disciplines seldom published in OA journals, OA monographs, OA proceedings and IRs, interview findings gave some insights on how researchers ensured access to their research outputs. The low uptake in OA proceedings and OA monographs could be linked to the rate of uncitedness of these OA outlets, as they are traditionally non-OA (Dorta-Gonzalez et al., 2020). Interview findings showed that some participants from social sciences disciplines have explored alternative means of scholarly communication for ensuring access to their scholarly works. These alternative channels include disseminating research findings as presentations, reports, policy briefs, and supplemental resources. Participants also revealed having used ResearchGate, SSRN, personal websites and social media platforms for promoting readership of and access to their research, instead of publishing in OA journals or self-archiving in IRs.

The use of alternative channels for scholarly communication is becoming the norm in the social sciences, and in some humanities disciplines. This finding is consistent with previous studies which found that researchers are using Twitter to post ongoing research updates (Zhu, 2014) and many ECRs ensured access to their research outputs to non-academic end-users to enhance the impact of their research (Merga & Mason, 2020). The use of alternative means of

scholarly communication has been encouraged by funding agencies when developing knowledge mobilization strategies of research funded by them (Cooper et al., 2018).

Knowledge mobilization plans in grants are expected to demonstrate researchers' commitments to providing access to their research outputs beyond the confines of the academic walls. Grant seeking researchers often demonstrate their plans to reach non-academic audiences, use several channels that are available to the public, as well as demonstrate their knowledge translation plans and strategies. This is becoming a widespread practice in most funding applications for Canada national funding agencies (i.e., tri-agency). In support of this, research has shown that researchers from social sciences are increasing their efforts in mobilizing their knowledge although with limited support from their institutions and government (Cooper et al., 2018; Sá, Li, & Faubert, 2011).

6.1.3 Increase in disciplinary support and move towards OA publishing

Quantitative findings suggested that there is willingness to promote OA publishing in the HASS disciplines. Although OA publishing has not yet become the norm in most disciplines in this study, particularly in the humanities and arts, qualitative findings suggested that some disciplines (e.g., philosophy, psychology, and law) are promoting OA publishing through awareness creation and by encouraging their researchers to publish OA. Hence, there is a growing support and move towards OA publishing in the participants' universities. This finding was confirmed by the qualitative results as many participants revealed that their disciplines (e.g., philosophy and psychology) have normalized OA publishing through their subject repositories and preprint servers, to a considerable extent. Most journals in the law discipline are open by default, and participants sometimes do not know if this is a true OA model. Hence, participants from the law discipline have seen an increasing support for OA publishing. This supports existing research which found that law is radically different from both the humanities and the sciences (Thorin, 2006). According to Thorin (2006), "articles [in law journals] are not peer-reviewed but are most often reviewed by students who edit the law journals. The journals are inexpensive and subsidized by the universities that publish them" (p. 229). This may explain why the law discipline continues to experience increasing uptake of research in OA.

Interview participants also revealed their support for OA publishing as funding agencies now allow the inclusion of the cost of APCs in their funding applications. Although some interview participants opposed the idea of using grant money to pay for APCs, many participants saw this as a supportive way for them to publish OA. However, many participants in the social sciences discussed the barriers they experienced through limited funding allocated to them by SSHRC. They lamented that the cost of APCs might take up to 25% of their research funding and thus questioned the genuineness of funding agencies' support for OA publishing. This confirms the study by Larivière and Sugimoto's (2018), which found that cost of publishing in OA journals can range from less than US$100 to more than $5,000 per article. Hence, many studies have argued against the payment of APCs for OA publishing (e.g., Alperin, 2022; Rodrigues et al., 2022). With the payment of APCs, authors are still paying to make their work available for free in a way, even though they have funding to do so. Rodrigues et al. (2022) argue that "APCs represent a major paradox in the dissemination of science, since the authors, their institutions, or funders must pay to make their research freely available" (p. 1). Although there is a growing disciplinary support for OA publishing, the cost of APCs has been a major barrier to engagement by most participants.

6.1.4 Research question one summary

The first research question asked, *"What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? And are there differences in researchers' OA publishing practices based on career stage, professional status, and academic disciplines?"* To answer these questions, findings showed that some HASS researchers have published in a variety of OA outlets, particularly in OA journals. Findings showed that MCRs have published more in OA outlets, than did the ECRs. Researchers are also exploring alternative means of scholarly communication through presentations, policy briefs, and supplemental resources. Interestingly, findings showed that there is a growing support for OA publishing, particularly in the social sciences disciplines through the use of IRs and preprint servers. Overall, OA publishing in the humanities and arts disciplines is low, especially among the ECRs.

6.2 Factors influencing researchers' OA publishing practices

RQ2: *What factors influence researchers' open access publishing practices?*

To answer RQ2, this study tested nine research hypotheses, with factors adapted from previous studies, which were extensively discussed earlier (See Section 4.4). The discussion focuses primarily on the quantitative findings (hypotheses testing), but also compare with the interview findings and existing literature. Again, the hypotheses tested in this study and their outcomes are as follows:

H_1: Visibility is positively correlated with open access publishing practices of researchers (*Not supported*)

H_2: Prestige is positively related with open access publishing practices of researchers (*Not supported*)

H_3: Researchers' altruism is positively related to their open access publishing practices (*Supported*)

H_4: Situational normality is positively related with open access publishing practices of researchers (*Supported*)

H_5: Structural assurance is positively related with open access publishing practices of researchers (*Not supported*)

H_6: Researchers' perceived impact is positively related with their open access publishing practices (*Not supported*)

H_7: Researchers' perceived content quality is positively related with their open access publishing practices (*Supported)*

H_8: Disciplinary norm is positively related with researchers' open access scholarly communication practices (*Supported*)

H_9**:** Benefit factors, institution-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers (*Partially supported*).

6.2.1 Visibility and OA publishing practices

Visibility is the extent to which researchers believe that publishing open access would enhance the wider dissemination of a publication (Park, 2007). In this study, visibility focused on the

reach and wide availability of research publications. The quantitative findings suggested that most of the respondents believed that OA makes the outcome of their research widely open and readily available to the users. While this is true in most cases as users would have access to research outputs published in OA outlets, hypothesis testing showed that *visibility* did not influence respondents' OA publishing practices. Hence, the first hypothesis was not supported. This suggests that visibility of OA publications might not be a big factor in influencing. By definition, OA makes your work more visible in that it makes it available to more people, but likely it doesn't improve visibility among your peers in many situations -- if all the experts in your area are looking to non-OA journals.

This questionnaire finding is in contrast with the interview findings, as participants heavily indicated that OA helps to increase the reach of their research outputs. Many participants stated that it is ideological for them to publish OA as they believed the work they do is funded by public tax money, and thus should be available to the public for free. Hence, many participants wished that they could publish most of their research as OA because they believe knowledge should be free and accessible to everyone. The interview findings lend strong support to existing studies which submit that publishing OA is beneficial for increasing the reach, usage, and impact of research outputs (Harnad & Brody, 2004), and that OA publishing is instrumental for greater visibility (82%) of their research (Gross & Ryan (2015).

6.2.2 Prestige and OA publishing practices

Prestige was operationalised in this study as the degree to which publishing OA is perceived to enhance one's reputation or status in one's social system (Kankanhalli et al., 2005). While the descriptive findings showed that some respondents believed OA publishing helps to improve their reputation, hypothesis testing suggested otherwise. The results showed that prestige did not have significant influence on respondents' OA publishing practices. Hence, the second hypothesis was not supported. This means that prestige or reputation of OA outlets may not necessarily influence researchers' OA publishing practices. This may be because OA publishing has not been recognized as a compulsory requirement for career advancement, as it is not recognized in the tenure and promotion process of professors. This finding is in contrast with existing studies which found that OA publishing is associated with increasing citation of articles, which in turn improves the reputation of researchers (Miguel et al., 2011; Mueller-Langer &

Watt, 2014). It also contradicts other studies which found that researchers publish OA because of benefits such as prestige or reputation (Kim, 2008; Lwoga & Questier, 2014).

Interestingly, qualitative findings revealed that participants understood prestige differently to what was operationalised in the questionnaire. Survey respondents understood prestige in terms of the outlets and its impact on their reputation within their disciplines. However, interview participants understood prestige in OA publishing in terms of content quality but not reputation they get by publishing OA. Interview participants discussed that the reason for their low engagements with OA journals was because of limited prestigious OA journals. Participants confirmed that they would publish most of their research in OA if there were more prestigious OA outlets. This implies that prestige in this study was understood with regards to the outlets and not the outcome of publishing OA, which many studies have found to be instrumental for increasing researchers' reputation. For instance, studies have shown that OA journals which charge APCs, particularly the gold and hybrid OA journals have more prestige than other OA journals (Sotudeh, Ghasempour, & Yaghtin, 2015; Zhang & Watson, 2017).

6.2.3 Altruism and OA publishing practices

Altruism was operationalised as the perceived joy and intrinsic benefits derived from publishing OA (Kim 2008, Kankanhalli et al., 2015). Quantitative findings suggested that many respondents enjoy sharing their research with others, helping researchers access their research outputs by publishing OA. Hypothesis testing also confirmed this by showing a strong correlation and significant influence of researchers' altruism on OA publishing practices. Hence, the third hypothesis was supported. This suggests that researchers who are altruistic or derive joy in helping others are more likely to publish OA. The more altruistic researchers are, the more they are likely to publish OA. Researchers who are not altruistic and do not derive joy in helping others may not see the benefits of publishing OA. Studies have found that OA publishing may be detrimental to the career progression of ECRs because OA journals may not be as highly ranked as traditional journals (Hurrell & Meijer-Kline, 2011; Nowick, 2008), which are usually preferred outlets for publishing when going for tenure.

The interview findings support the questionnaire findings as participants revealed that it is against their personal benefits to publish OA, but they publish OA because they wanted

knowledge to be free. This confirms Banks (2016)'s submission that those who promote OA are still largely regarded either as altruistic or as anti-capitalist. It also supports existing studies which found that altruism influenced researchers' publishing in OA journals (Heaton, Burns, & Thorns, 2019; Lwoga & Questier, 2014) and self-archiving in IRs (Ammarukleart, 2017; Kim, 2008; Lwoga & Questier, 2014). Similarly, Raju (2017) found that researchers' altruism influence publishing in OA monographs in the Global South, which is against the principle of pragmatism which favours impact and citation advantage of research.

The interview findings also revealed that although some participants enjoy providing access to their research outputs, their motivation for publishing OA was not entirely because they were altruistic, but because of the ideologies they uphold. Many participants revealed that rather than being altruistic about publishing OA, it was pragmatic for them because OA helps to increase access to their research, and in return helps to increase their citations. Other interview participants discussed how OA helps to democratize knowledge and to achieve social justice. This is because readers – irrespective of their income status and location – can have access to the outcome of research, globally. Findings also showed that publishing OA is a way of reciprocating knowledge they received from their community and passing that knowledge to their user communities. This was common among researchers whose research were informed by their user communities. This supports existing studies which found that OA articles have citation advantage over non-OA articles (Clements, 2017; Miguel et al., 2011; Mueller-Langer & Watt, 2014).

The findings on the influence of altruism on OA publishing also confirms Social Exchange Theory (SET) which posits that actions are contingent on rewarding actions, and better viewed as two sides of a transaction involving the exchange of utility or reward from each other (Homans, 1961). SET has been applied to explain how parties in exchange relationships weigh the benefits of the exchange to determine their commitment (Lambe, Wittmann, & Spekman, 2001). These findings are applicable to SET as they help establish that researchers would publish in OA outlets if there would be corresponding benefits for them. Further, qualitative findings showed that many researchers based their OA publishing on the potentials of OA outlets to ensure recognition of their research through increased citations, and the tendency to help them get tenure and promotion (Shehata et al., 2015; Xu et al., 2018). Hence, these benefits constitute rewarding actions of publishing OA, implying that OA publishing may be contingent on the

rewards and benefits that accrue from doing so. In fact, some participants did not publish OA because they believe doing so will be detrimental to their career progression, particularly because most prestigious outlets that will count for their tenure evaluation are non-OA traditional journals.

6.2.4 Situational normality and OA publishing practices

Situational normality is the belief that the environment is in proper order and success will occur as a result (Jones & Leonard, 2008). This means that researchers would publish in OA outlets if the situation regarding peer-review and overall quality of research outputs are as normal as the traditional publication outlets. Quantitative findings showed that many respondents believed that the quality of OA publishing outlets is of a similar standard when compared with traditional publishing platforms. This was supported by the hypothesis testing which revealed that *situational normality* had significant influence on researchers' OA publishing practices (p= 0.000). Hence, the fourth hypothesis was supported. This suggests that ensuring normalcy and standards such as what can be found in traditional journals, will help improve OA publishing practices of researchers in the HASS disciplines.

Interview findings supported the questionnaire findings as many participants discussed that they found the quality of OA journals and traditional journals to be the same. For instance, Sophia stated, "it [the OA journal] seems to produce regularly. I see pieces of work that I look at and that seem to be fairly high quality." This is the experience of the majority of interview participants, supporting the questionnaire findings that *situational normality* of OA journals would positively influence their decision to publish in these outlets. This supports the argument put forward by Kingsley (2013) that the quality of a journal is defined by its editorial policy and authorship, not its publishing model. As such, OA needs not be an impediment to quality or peer-review. This finding supports Social Capital Theory (SCT) which explains the conditions necessary for knowledge exchange to occur, with the significance of relationships as a resource for social action (Nahapiet & Ghoshal, 1998). According to Nahapiet and Ghoshal (1998), social capital are resources embedded within networks of human relationship. In this study, *situational normality* (a component of *institution-based trust) was* found to influence researchers' OA

publishing practices. Existing studies also found that trust influenced researchers' OA publishing and self-archiving practices (Kim, 2008; Lwoga & Questier, 2014).

6.2.5 Structural assurance and OA publishing practices

Structural assurance was operationalised in this study by adapting the definition by McKnight et al. (1998) which they defined as the "belief that success is likely because such contextual conditions as promises, contracts, regulations, and guarantees are in place" (p. 478). In scholarly communication, this suggests that regulations, promise for security, copyright and intellectual property protection indicated on OA outlets are assured. Questionnaire findings showed that few respondents believed that security and copyright protection in OA publishing platforms made them feel safe to use the system. However, hypothesis testing for *structural assurance* was found to be not significant in influencing researchers' OA publishing practices. Hence, the fifth hypothesis was not supported.

This was supported by the interview findings as many participants lamented the technical difficulties with IRs in terms of language, accessibility, and terminologies such as pre-prints and post-prints. Interview findings also revealed that OA outlets are lagging in technical standards, such as copy-editing, language, and accessibility. Many participants believed that depositing their preprints or postprints in IRs takes a lot of time, and some regarded the use of IRs as redundant. This limited participants' engagement with IRs, thereby affecting their OA publishing practices. This finding lends support to existing research which found that the resistance and lack of willingness from faculty to deposit contents in IRs has been linked to concerns about copyright and plagiarism (Cullen & Chawner, 2011) and time and effort involved in depositing their research (Foster & Gibbons, 2005; Kim, 2007).

6.2.6 Perceived impact and OA publishing practices

Perceived impact was operationalised is this study as researchers' subjective evaluation of the impact OA outlets would have on their publications (Moksness & Olsen, 2017). Findings suggest that respondents believed it is important that OA outlets enjoy high status within their fields of research. This suggests that researchers are likely to publish in OA journals, if they have high impact ranking. However, hypothesis testing showed that *perceived impact* had no significant influence on researchers' OA publishing practices. Hence, the sixth hypothesis was

not supported. This suggests that the perceived impact of OA outlets (i.e., high impact factor and reputation) are not strong predictors of respondents' OA publishing practices. It could also mean that researchers are more interested in other scholarly criteria when deciding where to publish their research outputs.

On the contrary, qualitative findings showed that some participants published in OA outlets because they consider them equally prestigious. Although perception of prestige of OA venues varied among the participants, it is an important determining factor for OA publishing for most of them. Some interview participants also discussed the importance of journal rankings and impact factors in influencing their choice of where to publish. Despite this expectation, some participants believed that it's hard for OA journals to climb the ranking because of webometrics and impact factors. Notably, impact and prestige of publication outlets are more important for ECRs whose tenure evaluations are mostly based on the number of publications they have in top-tier journals (O'Brien et al., 2019). This may be a different reality for MCRs because they have already established their academic profile (Baldwin & Chang, 2006).

With limited prestigious OA journals in the HASS disciplines, participants' engagement with OA outlets was limited. This is particularly true as newer OA journals may not be as prestigious as the traditional journals. This supports the assertion by Björk and Solomon (2012) that "journals that were launched as OA from relatively new publishers such as PLoS or BMC have disadvantages in other respects. They lack the established reputation of publishers that have been in business for decades" (p. 3). Similarly, a recent study found that low adoption rate of OA journals in the business fields is a side-effect of evaluation practices, which emphasize publishing in journals included in ranking lists (Laakso & Bjork, 2022).

The age-long evaluation metrics adopted in higher institutions need to be revamped and flexible enough to recognize budding OA journals, which may not be, for the time being, as recognized as journals that have existed for decades. This is particularly important as research has shown that researchers at all stages care about the prestige of the publication outlets. As Larivière et al. (2015) argue, young researchers need to publish in prestigious journals, while older researchers need to do the same to keep their grants and to protect junior co-authors. This explains the growing influence of impact factors in the decision-making process of researchers regarding publication outlets.

6.2.7 Perceived content quality and OA publishing practices

Perceived content quality was operationalised in this study as the extent to which researchers perceive the contents of OA outlets to be of good quality, and how their perceptions influenced their OA publishing (Moksness & Olsen, 2020). Quantitative findings showed that it is important that OA outlets offer reliable peer-review. Results further showed that it is important for OA journals to produce particularly good quality articles. Hypothesis testing found that *perceived content quality* had significant positive influence on researchers' OA publishing practices. Hence, the seventh hypothesis was supported. This suggests that researchers would publish more OA articles if OA journals ensured high content quality. Quality of journal peer-review has been found to be a key determinant of researchers' intention to publish (Schroter et al., 2005). Research has also shown that perceived quality influenced researchers' intention to publish in OA scholarly journals (Moksness & Olsen, 2017).

For most scholarly journals, content quality is ensured through rigorous peer-review, which is a quality-control system of research outputs prior to publication (Kling & Callahan, 2003). Peer-review could be single or doubly anonymous (Fresco-Santalla & Hernández-Pérez, 2014). By anonymizing the identities of both the authors and reviewers, the tendency for bias in peer-review can be reduced, but this is not always the case (Eve et al., 2021). However, there is a growing trend for open peer-review where the identities of both the authors and the reviewers are made public (Ford, 2013), although research has shown that open-peer review unsettles ECRs (Blanca et al., 2017). However, high quality peer-review helps to ensure content quality of journals articles and other OA outlets, including OA books and OA conference proceedings. Notably, a journal can have a high-quality process but if those who are seen as the best 'peers' are not participating in the review process that can also undermine perceptions of quality.

Interview findings largely supported this finding as participants discussed the importance of quality peer-review in OA journals. Interestingly, many participants held strong beliefs that the quality of OA journals does not differ from the quality of traditional outlets. As discussed by Greg, "the peer-review process for paid publications for books and whatever - it's exactly the same process." However, some participants from the humanities disciplines perceived the quality of OA journals to be lower than the traditional journals. This is particularly true for some humanities disciplines known for age-long scholarly tradition of monographs publishing (Eve, 2015; Look & Pinter, 2010). Perceived quality has been previously found to influence

researchers' intention to publish in OA scholarly journals (Moksness & Olsen, 2017). This further buttresses the need to improve on the quality of OA journals by ensuring standardized and quality peer-review.

One interview participant stressed that the quality of peer-review is only guaranteed in traditional journals but not in OA journals. This is in tandem with a wide-ranging discussion on the quality of publication outlets. For instance, Zhu (2017) reported that one of their study's respondents who is a senior faculty "do not believe that open access journals are of good quality in terms of peer reviewing and therefore do not rate them highly" (p. 564). This finding does not represent the perspectives of most of the interview participants. However, it is important to note that quality of peer-review in journals is a key determinant of researchers' intention to publish (Nicholson & Alperin, 2016; Schroter et al., 2005; Swanberg, Thielen, & Bulgarelli, 2020). Hence, there is a need for continuous improvement of the peer-review quality of OA journals.

6.2.8 Disciplinary norm and OA publishing practices

Disciplinary norm was operationalised in this study as culture of OA publishing in respondents' disciplines of practice (Kankahalli et al., 2005). The quantitative findings showed that there is willingness to promote OA publishing in many respondents' disciplines. This suggests there is growing awareness and advocacy for OA publishing in the HASS disciplines. Hypothesis testing also confirmed that disciplinary norm had significant influence on researchers' OA publishing. Hence, the eighth hypothesis was supported. This suggests that researchers from disciplines with norms for OA publishing would publish more in OA outlets.

Interview findings supported this finding as researchers from disciplines that have practiced preprints publishing and online availability of research (e.g., philosophy and law) tended to publish more in OA outlets. Although the norms for OA publishing was not common with all the disciplines included in the interviews, results showed growing norms for OA publishing, particularly in the social sciences disciplines. However, some participants believed that OA publishing will continue to lag until older faculty retire. Hence, they suggested that experienced faculty should lead the way in OA publishing because younger faculty will follow suit. Participants also stressed that OA outlets quality and ranking will improve if renowned professors are publishing in and reviewing for OA journals.

This finding supports existing studies that found that publishing OA or complying to OA policies could be hinged on disciplinary norms and culture (Narayan et al., 2018; Serrano-Vicente et al., 2016). Other studies have established variations in OA publishing across disciplines in North America, with low uptake (Piwowar et al., 2018) and compliance (Larivière & Sugimoto, 2018) in the humanities and social sciences disciplines. Eger et al. (2015) found increasing use of IRs for self-archiving in business and economics fields, establishing the growing OA uptake in the social sciences disciplines. Disciplines that are receptive of IRs or subject repositories tend to see a growing uptake in their OA publishing, compared with disciplines that do not. Hence, disciplinary norms influenced OA publishing practices in the HASS disciplines of research-intensive universities in Canada.

6.2.9 Benefit factors, institution-based trust, perceived quality, and disciplinary norm when combined, will have significant relationship with open access publishing practices of researchers

To establish the extent to which all the factors measured in this study had a combined influence on researchers' OA publishing practices, multiple regression analysis (MRA) was employed. The MRA results showed an Adjusted R Square of .174, with $p < 0.000$, which means that only 17.4% of the independent variables accounted for the variance in researchers' OA publishing practices. Results further showed that only *altruism, situational normality, perceived content quality, and disciplinary norm* had combined significant influence on researchers' OA publishing. This suggests that researchers' OA publishing practices were informed by a few components of the combined factors. However, other factors not covered in the questionnaire may contribute more to researchers' OA publishing practices. This in fact, justified the need for semi-structured qualitative interviews which examined other crucial factors such as perceptions of and barriers to researchers' OA publishing in the HASS disciplines.

6.2.10 Research question two summary

The second research question asked, *"What factors influence researchers' open access publishing practices?"* This study found that HASS researchers' OA publishing practices were mainly influenced by four factors. These are *disciplinary norm, altruism, perceived content quality* and *situational normality.* For *disciplinary norm*, this suggests that disciplines that have

established norms for OA or recognize the importance of OA will see an increase in the uptake of OA. Hence, there is a need for more discipline-specific norms and practices for OA publishing in the HASS disciplines, particularly in the humanities. Findings on *altruism* suggest that altruistic researchers are more likely to publish OA. Hence, there is a need to build structures and policies that will motivate researchers to publish OA. Moreso, findings on *perceived content quality* suggest that there is a need to improve content quality of OA journals, as researchers are more concerned about the quality of contents than the prestige of OA outlets. This can be done by improving the quality of peer-review and overall outputs of OA publications. Finally, findings on *situational normality* suggest that there is need to ensure that conditions for publishing, such as those found in the traditional outlets are also guaranteed in OA outlets. This can be done by ensuring the safety of OA outlets by preventing plagiarism and protecting researchers' intellectual property right.

6.3 Researchers' perceptions of OA scholarly communication

RQ3: *How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication?*

This section provides the description and discussion of researchers' perceptions of OA scholarly communication. Participants' perceptions were grouped into two sections (positive and negative perceptions), with each having sub-sections. Detailed discussions for both positive and negative perceptions are provided below. This section focuses on the interview findings and concludes with a summary of answer to RQ3.

6.3.1 Positive perceptions influenced participants OA publishing

This section discusses interview participants' positive perceptions of OA publishing and how these perceptions affected their OA publishing practices. Findings were then compared with existing studies.

OA journals are of equal quality

Findings showed that many participants considered OA journals to be of equal quality with traditional journals. Most participants, particularly those from the humanities disciplines discussed that a journal is OA does not mean it should be of low quality. For example, Robert asserted, "it [open access] needs not in principle be an impediment to quality." For most

participants who have engaged in OA publishing, their perceptions of quality of OA outlets were mostly positive. They regarded the peer-review of OA journals as equally rigorous and of high standard when compared to their experiences with non-OA journals. As such, their positive perceptions of the quality of OA have motivated them to engage in OA publishing. In fact, some participants regarded OA publications as having better quality than traditional journals. This finding supports the quantitative finding on *situational normality* of OA outlets, as most of the questionnaire respondents indicated that peer-review quality of OA publishing outlets is of similar standards when compared with other traditional publishing platforms.

The quality of a journal may be hinged on several factors. For instance, a journal can control some aspects of quality, namely those that are part of its process (i.e., it conducts peer review, it copy edits its accepted manuscripts, it has rigorous standards for acceptance) but many aspects of quality are outside its direct control (i.e., the pool of submission it draws from, the people willing to review for it). So, if a journal adopts good practices it can be "good quality" but it can only be "top quality" if people in that research community are investing in it (e.g., sending their best work there, volunteering their review hours). This reinforces the argument that of open access should not be an impediment to quality or peer-review (Kingsley, 2013).

In terms of prestige, this study found varying interpretations of prestige. Many interview participants found OA publications and journals as prestigious as the traditional journals. For instance, Farah discussed, "the few open access publications that I've read in our field were all very strong. So, in terms of prestige, I do not consider them less. I consider them equal." It is important to note that prestige was conceived differently by the questionnaire respondents and interview participants. The questionnaire respondents understood prestige in terms of the outlets and its impact on their reputation within their disciplines. However, interview participants understood prestige in OA publishing in terms of content quality and not about the reputation they get by publishing OA. As such, many interview participants regarded OA publications as equally prestigious when compared to traditional publications.

Previous studies found differences in perceptions of factors indicating quality in journals. According to Nguyen et al., (2020), "ECRs have stronger beliefs that a good journal has simple submission procedure and is responsive to authors' queries, whilst MCRs show greater beliefs that a quality journal has good indices measuring its impact and high rank" (p. 298). This shows the variation in the expectations of quality in journals which may influence researchers' OA

publishing as well. Kingsley (2013) emphasized that the quality of a journal is not determined by its publishing model, but by its editorial policy and authorship practices. The Directory of Open Access Journals (DOAJ) lists over 19,000 OA journals which have rigorous peer review and quality standards. These journals are prestigious in their various disciplines and must have undergone quality checks before being listed. This negates the perception that most OA journals are of lower quality.

Hence, this finding contradicts some earlier studies which found that researchers regard OA journals as low quality and less prestigious (Coonin, 2011; Demeter et al., 2021). For instance, Demeter et al. (2021) found that OA articles proportion in Q1-ranked journals are lower than non-OA articles. This is because many OA journals are new and may not enjoy the prestige and impact factors the older journals enjoy. Moreover, some of the interview participants discussed that although there is a public perception that OA outlets have low quality, they do not consider that to be true of OA journals in Canada. This is not to say that all OA journals are of high quality, but this is not the experience of most participants in the current study. Many OA journals practice predatory publishing, as they charge APCs and promise authors fast publication time, thereby bypassing rigorous peer-review process (Beall, 2012, 2013; Butler, 2013; Lukić et al., 2014). As such, it is important for authors to ensure they are submitting their research outputs to OA outlets with verifiable, standardized quality peer-review, and recognized editorial practices.

Funders' requirements increasingly drive OA publishing

Many interview participants acknowledged the impact of funders' requirements as incentives for engaging in OA publishing. Most recent applications for SSHRC grants are expected to demonstrate knowledge mobilization strategies and OA commitments. As Anthony discussed, "they [SSHRC] do tend to look for or prioritize publishing in open access outlets where possible, to make sure that that information is disseminated as widely as possible." Since publishing OA has become an increasingly part of scholarly communication practices of researchers, participants positively perceived IRs an important outlet for engaging in OA publishing.

Most of the interview participants are from the humanities and social sciences disciplines and some have received funding from SSHRC. The SSHRC's policy on the use of IRs for OA publishing outlines that, "Grant recipients can deposit their final, peer-reviewed manuscript into an institutional or disciplinary repository that will make the manuscript freely accessible within 12 months of publication." (SSHRC, 2015, p. 6). Hence, researchers who received tri-agency funding starting from May 2015 upward, are expected to deposit post-prints of their research on IRs or subject repositories within the first 12 months of publications. Hence, using IRs has helped researchers comply with OA publishing requirements of funders. As such, many participants considered depositing preprints in IRs for meeting funders' requirements for OA publishing and knowledge mobilization. However, pre-prints (unvetted, potentially problematic version of manuscripts) deposit is not consistent with tri-council definition, which emphasized post-prints (accepted version of the article) deposit in IRs for meeting the requirement for OA publishing. Institutional repositories by their nature, help to preserve intellectual outputs in universities, and help to ensure free and perpetual access to their contents (Francke et al., 2017; Genoni, 2004). This finding supports existing studies which found that IRs are crucial part of scholarly communication system (Francke et al., 2017; Genoni, 2004), and as alternative means of scholarly communication (Crow, 2002; Shearer, 2003, 2022; Suber, 2007).

OA is useful for bridging equity gaps and democratizing knowledge

Participants discussed the significance of OA in bridging equity gaps in knowledge access. They regarded OA as a necessity for upholding their ideals that knowledge should be accessible to everyone. For instance, Farah lamented, "there is a huge equity gap that public do not have access to knowledge as much as scholars do have." As many journals still charge users article access fees – particularly if those outlets are behind paywalls – users from developing countries and poorer or sanctioned economies are faced with inequity of access. Interview findings suggested that OA publishing helps to bridge equity gaps that exist in knowledge access, and thus helps to improve co-creation of knowledge.

By bridging the equity gap in knowledge, this study also found that OA helps to democratize knowledge, and in return helps to achieve social justice in scholarly communication. Some interview participants discussed the need to ensure access to the right information as users search for the 'truth.' For instance, Emma argued, "how do we set a good example for

democratizing knowledge, especially if I'm working in areas of social justice-oriented work, and I want the communities I work with to be able to access that information." The main drive for some participants who perceived OA publishing positively is ensuring that the work they do is accessible to their communities. Hence, their preference is to publish in OA outlets as much as possible.

This is consistent with existing studies which found that researchers from the Global South are often at the receiving end of the inequity that exists in scholarly communication (Kwon, 2022; Rodrigues et al., 2022). Recently, research efforts have been geared towards encouraging equity in OA publishing, particularly focusing on reducing or removing the cost of APCs so as to help ECRs (Merga & Mason, 2020) and economically disadvantaged researchers (Alperin, 2022; Kwon, 2022). Researchers are now advocating for inclusion and equity, emphasizing that OA will forfeit its ideals if researchers from developing countries are excluded (Bloomstone, Amatangelo, & Morris, 2022; Parker, 2013). Thus, this finding lends a strong support to existing studies that OA publishing is a leveler for access to ground-breaking research and scientific discoveries.

Similarly, some participants regarded OA publishing as being instrumental for achieving equality and fairness in knowledge access which relate to social justice and democratization of knowledge. This finding is consistent with existing studies that emphasized that open access helps to realize greater good, and it is a form of social justice (Heller & Gaede, 2016). Similarly, Parker (2013) concluded in his article on ethics of OA publishing, that researchers in ethics support the promotion of diverse and experimental forms of publication and debate. With OA publishing, new and more creative and participatory approaches to publication are ensured.

By democratizing knowledge, OA publishing serves as a means for achieving public good, and free access to knowledge. Research is a public good because researchers are funded through taxpayers' money (Suber, 2012). Hence, many participants felt it is incumbent on them to make their research outputs freely available so the public could have unhindered access as they should. Publishing behind paywalls exacerbates the lack of access to scholarly research, and disproportionately affects researchers from developing countries and those with dwindling library budgets. These findings support existing research on the need for OA publishing of funded research, globally (Bosman et al., 2021; Holley, 2018).

OA helps to improve readership and knowledge mobilization

One of the ideals of OA publishing is that anyone with access to the internet should have unhindered access to scholarly outputs (Harnad & Brody, 2004; Suber, 2003). This study found that participants are of the opinion that OA helps to improve readership of their research. This is consistent with existing studies which found that OA articles are well read and widely accessed compared to the articles publishing behind paywalls (Clements, 2017; Merga & Mason, 2020). Participants discussed how OA helps to improve readership of their research beyond the academic walls of universities, reaching the non-academic audiences. This is particularly instrumental for demonstrating knowledge mobilization plans and strategies in grant applications.

Most funding agencies are now demanding that applicants include knowledge mobilization strategies in their application for funding (Cooper et al., 2018: Rodway & Read, 2018; Sá et al., 2011). This has made researchers actively think of innovative ways of mobilizing their research outputs to reach non-academic audiences, especially policy makers and practitioners. Policy makers, practitioners, and governments may not have access to academic journals or attend conferences which are traditional or preferred destinations for most research outputs. However, OA publishing has helped to ensure that the outcome of innovative research is accessible to users without the barriers of copyright restrictions, consistent with existing studies (Dudley, 2021; Tennant et al., 2016).

With increasing access to research outputs, there is a tendency for increased impact of research outputs. Findings showed that participants perceived OA publishing as a tool for improving the impact of their research. This is because users who have access to research outputs can then use the research outputs for solving societal problems (Swan, 2012). Findings also showed that OA publishing is instrumental for increasing citation of research. For example, Georgia, emphasized, "[there is] a pretty strong relationship between those articles that are accessible open access and those are the ones that get cited." This suggests that OA articles get more cited than non-OA articles. This finding lends support to existing studies about the importance of OA for improving citation and impact, with many studies confirming citation benefits of articles published as OA (Eysenbach, 2006; Miguel et al., 2011; Mueller-Langer & Watt, 2014; Norris et al., 2008). Similarly, participants recognized the importance of OA in influencing policies and government decision making. This is because their research is

accessible, and thus increase the possibility of improving their reputation and overall research impact (Björk & Solomon, 2012).

In summary, this study found that most of the interview participants positively perceived OA publishing to be of equal quality when compared to the traditional outlets. Hence, they perceived OA as being instrumental for bridging equity gaps in knowledge access, achieving equity and democratization in knowledge production, dissemination, and use. As many funding agencies are increasingly requiring OA publishing in grant applications, participants found IRs as being instrumental for meeting funders' OA requirements. In doing so, they can improve readership and knowledge mobilization of their research, leading to notable impact of their research beyond the academic community, informing policy and practice.

6.3.2 Negative perceptions limited researchers OA publishing

This section discusses researchers' negative perceptions of OA scholarly publishing and how these perceptions affected their OA publishing practices. Recommendations for mitigating these negative perceptions were discussed at the end of each sub-section.

Objection to APCs stifled OA publishing by researchers

Findings showed that many participants perceived paying APCs to publish their research as OA as egregious. Their perceptions of APCs model of OA publishing is negative, and that has impacted their OA practices. In fact, some participants perceived APCs to be predatory, undemocratic, and unfair. As Emma described, "I find [APCs] to be quite predatory… I know that there's infrastructure that's needed, but fees that Elsevier is charging to our libraries so that we can buy back our own research seems really troublesome to me." Many participants were unable to publish OA as frequently as they would love to, because of the APCs associated with many OA journals, particularly the traditional journals doing hybrid model of OA publishing. This lends support to studies that reported the APCs model of OA publishing as contradictory to the ideals of OA because it impedes OA publishing by researchers in poor countries (Alperin, 2022; Kwon, 2022; Parker, 2013). Parker (2013) argues that APCs enable inequity and divisions in OA publishing between richer and poor institutions, and it widens the divide between independent researchers and those affiliated with academic institutions.

Additionally, participants discussed that the APCs model should not be encouraged because it is a form of double-dipping. That is, publishers benefit twice by charging authors to make articles OA and charging library for a subscription to that journal. Notably, research is already publicly funded, and as such accessing the outcome of research should not be hindered by access fees. This is consistent with the criticism of APCs models, particularly gold and hybrid OA which encourage the extortion of public funds for publishing (Pinfield, Salter, & Bath, 2016; Taubert et al., 2021). Similarly, Dalton et al. (2020) found that North American academics are unsure about their future OA publishing intentions because of the cost of APCs for OA publishing. Hence, librarians and advocates are not in support of APCs because publishers maintain subscription rates while charging authors page recovery costs (Holzman, 2016). Although not all journals that charge APCs for OA publishing are predatory journals, this practice has encouraged predatory publishers to take advantage of authors because of its economic benefits to them.

To reduce the barrier to OA publishing caused by APCs, interview participants suggested that there is need for more funding and institutional support for diamond OA journals. There are currently some movements for diamond OA publishing globally, including Latin America, North America, and Europe. For instance, Alperin (2022) submits that tri-agency in Canada have continued to support the Public Knowledge Project (PKP) and its partnership with the dissemination platform Érudit to build an open, non-commercial infrastructure for sharing research. Also, the cOAlition S, a consortium of European funding agencies, has also recently been emphasizing their support of diamond OA (Bosman et al., 2021). Hence, diamond OA model has been projected as the viable model of achieving OA mandates and ideals.

There are thousands of OA journals which do not charge APCs as listed in the DOAJ. As of May 18, 2023, out of the over 19,000 OA journals listed on DOAJ, over 13,000 journals do not charge APCs. However, many interview participants were not aware of these journals and the database that compile the OA journals (i.e., DOAJ) when asked during the interviews. This stresses the need for more awareness of diamond OA journals relevant to researcher's interests. As funding is necessary to run and sustain OA journals (Eve, 2017), it is imperative to improve funding allocation for diamond OA and association journals. There is a need to fund genuine OA journals with limited funding to avoid exorbitant APCs. For instance, participants described

some of the OA publishing models that have worked well in their disciplines. These include the patron model through association journals and pay-to-submit model.

The patron model works by charging members of an association a minimal membership fee which helps the editors to offset the cost of running the journal. Participants believed this model is not built on profit-making, but for sustaining the journals. The second model is the pay-to-submit model, which ensures that authors pay a certain amount when submitting their papers. The payment will be used to offset the cost of reviewing the submission and subsequent publishing. Some participants described this as a good model since it does not cost them too much. As Schimmer et al. (2015) summarized, there is a need to retain existing journals because of their well-tested functionalities, but their underlying payment streams need to undergo a major restructuring.

Due to the cost of APCs, many participants expressed their preference for no-APCs model of OA publishing. Since most prestigious journals in participants' disciplines are usually subscriber-based, publishing articles in such journals often require huge sum of APCs. Hence, some participants described having preferences for no-APC journals. Charles revealed, "I have no grant money to pay for publishing fees, and so I choose journals that don't require publishing fees." Because of the limited funding in the HASS disciplines, it has increasingly become difficult for researchers to publish OA. This corroborates studies that found that funding is lower in the HASS disciplines compared to the STEM fields, which then have a ripple effect on OA publishing in the HASS fields (Eve, 2015, 2017).

This finding lends strong support to previous research which found inequalities in OA publishing among researchers, particularly among ECRs and others who cannot afford APCs (Momeni, Dietze, Mayr, Biesenbender, & Peters, 2022; Nicholas, Watkinson, et al., 2017). Furthermore, Gray (2020) found that perceived credibility and prestige of OA journals based in high-income countries was influenced by APCs. This implies that OA journals with low APCs or no APCs may be perceived as having low prestige. This was confirmed in another study (Demeter et al., 2021) which found a correlation between hybrid OA journals which charge APCs and high impact factors. This implies that authors who want to publish in high-impact factor journals but cannot afford to pay the associated APCs will publish behind paywalls. This explains the complexity in the APCs model of OA, and how it continues to entrench inequities in

OA publishing, which researchers have constantly criticized (Alperin, 2022; Holzman, 2016; Taubert et al., 2021).

Preference for traditional journals over OA journals

Some participants from the humanities disciplines expressed their preference to publish in traditional journals over OA journals. They held staunch support for the publishing tradition in their fields, and they do not see that changing for the time being. Their preference for traditional journals stemmed from their perceived quality of peer-review and 'stamp of approval' of these traditional journals. They believed the quality of peer-review is guaranteed in traditional journals they publish in but doubted OA journals. Some participants in the humanities who are mid-career researchers considered OA outlets as having inferior quality in terms of peer-review and overall outputs. For instance, Paul asserted, "the actual publishing is more like the stamp of approval from the journal that it's high quality…What I need is their stamp of approval. This is good enough to be published in this journal." Other participants like Paul believed that they can only get a stamp of approval for their publications if they publish in traditional non-OA journals. Hence, they are not positively disposed to publishing in OA journals, because they may not enjoy the same prestige as traditional journals.

However, these negative perceptions of OA publishing represent a small percentage of participants who participated in this study, as many participants particularly the early career researchers regarded OA outlets as having the same quality. Poor perception of quality was found in previous studies as a barrier to OA publishing. For instance, Gross and Ryan (2015) found that Australian researchers in arts and humanities perceived OA journals to be of lower quality than traditional journals. Similarly, Zhu (2017) reported that some respondents who are senior faculty do not believe that OA journals are of excellent quality in terms of peer reviewing. To improve patronage and positive perception for OA journals, there needs to be institutional support for OA journals in terms of peer-review, editorial assistance, and funding tor sustainability. To summarize, negative perceptions of OA publishing by the participants was linked to the APCs model of some OA journals, which has disproportionately limited OA publishing practices of many ECRs. Many participants regarded OA journals with APCs as being predatory and egregious, making them to question their quality and prestige. This informed their preference for traditional journals, particularly those in the humanities disciplines.

6.3.3 Research question three summary

The third research question asked, "*How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication?*" Findings showed that many interview participants from the humanities positively perceived of OA scholarly communication. Although, some participants negatively perceived OA publishing, their perceptions do not represent the views of the majority of the study participants. This study found that many ECRs in the social sciences are more supportive of OA publishing, as they recognized its impact on their scholarship. Hence, there is an increasing recognition of OA for democratizing knowledge through open access to knowledge. This study also found that OA was regarded as a tool for bridging equity gaps in knowledge access, thereby achieving social justice. Negative perceptions of OA publishing by the participants was primarily linked to the APCs model of some OA journals which has disproportionately limited OA publishing practices of many ECRs. Some participants regarded OA journals with APCs as predatory and egregious, making them to question their quality and prestige. This informed their preference for traditional journals, particularly those in the humanities disciplines.

6.4 Institutional and systemic barriers to OA publishing

RQ4: *What inhibits the open access scholarly communication practices of ECRs and MCRs in the HASS disciplines of Canada?*

This section provides the discussion of the barriers limiting OA publishing of Canadian HASS researchers. These barriers were termed institutional and systemic barriers to OA publishing. The interview findings are discussed considering existing literature, while strategies for reducing these barriers as suggested by the participants are discussed as solutions for each barrier. The section concludes with the summary of findings and discussions answering RQ4.

6.4.1 Limited funding to pay for APCs increased inequity in OA publishing

Findings revealed that the most frequently discussed barrier to OA publishing by the participants was limited funding to pay for the excessive cost of APCs. Participants described their experiences as social science and humanities researchers in terms of access to grant funding, which they lamented as being grossly inadequate and insufficient to pay for APCs. For

instance, Charles lamented, “we're competing for tiny pots of money in social sciences like $50,000.” Emma also stated that, “SSHRC grants are smaller for the most part, there's simply less money.” Most participants revealed that they would prefer to publish all their research outputs in OA journals but for their limited financial capacities. This funding limitation has made most of the participants publish in paywalled journals instead.

In fact, limited funding for APCs disproportionately limited ECRs’ OA publishing engagement since they usually have limited research funding. This may explain the questionnaire findings on why MCRs have published more in OA outlets than did the ECRs. One of the ways of reducing this barrier is to provide institutional support in the form of increased funding availability for OA publishing. This can be done by not only allowing the inclusion of APC fees in grant applications, but also approving APCs fees in grant budgets, and by providing sufficient funding to HASS researchers. However, the gold and hybrid model of OA publishing (that charge APCs) has been criticized for entrenching vicious circle and not being a better approach to achieve OA (Alperin, 2022).

Findings also revealed the rising inequities in participants’ OA publishing practices based on the cost of APCs. These inequities have exacerbated the barriers in OA publishing among researchers in the HASS disciplines in Canada. Some participants realized these inequities and discussed their concerns on the impact it would have on OA publishing of other researchers. The most frequently discussed cause of inequity in OA publishing by the participants is the cost of APCs which has systemically incapacitated them from publishing OA, particularly the ECRs. As Jessica puts it, “I think that open access in general in my area, is just accessible to a very small group of researchers who can afford it, which I don't think is the point of open access.” This means that the cost of APCs of many hybrid journals has made OA publishing inaccessible to researchers who do not have funding for paying the associated fees.

As funding is limited in the HASS disciplines compared to the STEM fields (de Winde et al., 2020; Eve, 2015), OA publishing has remained inaccessible to many participants, particularly those early in their career, who cannot afford associated APCs. This means that they either seek default OA journals (i.e., diamond OA journals) or publish in paywalled outlets. As Grayson, confirmed, “there are people who don't have that [APCs] then don't have access to open access publishing unless they go with a default open access outlet.” APCs continue to be a huge barrier

to OA publishing, especially among those who are not in developed countries (Momeni et al., 2022).

Many researchers cannot afford the cost of making their research OA; hence they tend to publish in paywalled journals. As Olivia reiterated, "I think article processing charges inhibit publishing by early career researchers and doctoral students and they inhibit publishing by people who are not in Western academia." This is one of the major cause of inequities in OA publishing. This finding lends strong support to existing research which found inequalities in OA publishing among researchers, particularly ECRs and others who cannot afford APCs (Momeni et al., 2022; Nicholas, Watkinson, et al., 2017). Furthermore, Gray (2020) found that perceived credibility and prestige of OA journals based in high-income countries was influenced by APCs. This implies that OA journals with low APCs or no APCs may be perceived as having low prestige. This was confirmed in another study (Demeter et al., 2021) which found correlation between hybrid OA journals which charge APCs and high impact factors.

These recent studies confirmed a decade-long study (Björk & Solomon, 2012) which found that OA journals that fund publishing with APCs are on average cited more than other OA journals, leading to more impact and prestige for those journals. This implies that authors who want to publish in high-impact factor journals but cannot afford to pay the associated APCs will rather publish behind paywalls. This explains the complexity in the APCs model of OA, and how it continues to entrench inequities in OA publishing (Momeni et al., 2022), marginalizing research voices from the Global South (Raju et al., 2020). This inequity can be reduced by funding viable OA models such as the diamond OA journals, so authors would not need to pay to publish OA (Bosman et al., 2021; Holley, 2018).

Moreover, participants suggested increased funding for establishing OA journals in universities. As Freya suggested, "more funding and support of open access journals from universities would be a great start." This will help reduce the financial burden of paying for APCs on the researchers. Funding for viable OA models such as the diamond OA stand as a veritable approach to reducing the barrier caused by APCs. Commercial publishers are significant in tackling the challenge of APCs – they need to be more supportive of equitable scholarly communication that helps meets societal needs. This is consistent with the recommendation from Holzman (2016) that "commercial publishers must start thinking of the

long-term and recognize that restoring the health of the scholarly communications ecosystem, even if that involves sacrificing some short-term revenues, is in their long-term interest" (p. 181).

6.4.2 Tenure and promotion requirements

Findings revealed that another major systemic barrier to OA publishing by the participants is the tenure and promotion requirements in higher education institutions which favour publishing in traditional non-OA venues. This is particularly worrisome to ECRs who are expected to publish in high-ranking, top-tier journals, most of which are behind paywalls. Additionally, this systemic barrier to OA publishing was also linked to conflicting priorities in pursuit of tenure by ECRs and limited time to search for relevant OA venues. As publishing OA is not a requirement for tenure in most institutions, many ECRs do not see the urgency to publish in OA outlets, especially as doing so may negatively affect their institutional recognition in tenure applications. This also explains the quantitative findings as MCRs have published more in OA journals than did ECRs, because the former place less emphasis on journal impact factor and overall prestige (Niles et al., 2020).

The experiences and academic achievements of MCRs may indicate why they have published more in OA outlets. However, the fact that not all MCRs have published in OA journals may indicate that some of them still prefer the high-ranking journals in pursuit of grants and promotion. This finding supports the submission by Larivière et al. (2015) that "young researchers need to publish in prestigious journals to gain tenure, while older researchers need to do the same in order to keep their grants." However, that MCRs are not faced with pressure of tenure, might explain why they have published more in OA outlets that did the ECRs. This confirms existing studies which found that tenured faculty members are more likely to publish in OA journals (Nowick, 2008; Park, 2009).

Additionally, participants also lamented that the impact factor and evaluation metrics used in most tenure and promotion process often disadvantage social sciences and humanities researchers. Hence, many participants are often targeting journals with high impact factors, which are usually paywalled journals. As one participant noted, "impact factor… puts social sciences and humanities at a disadvantage." This is supportive of an existing study (Wical & Kocken, 2017) which found that vague and occasionally contradictory language in the evaluation plans could create confusion regarding requirements for OA publishing in the review process.

Their study found that departments from the STEM fields were clearer about expectations for researchers to disseminate findings in a variety of ways, including in OA outlets, whereas departments from social sciences are mostly not clear about this expectation.

One way of reducing systemic barrier to OA publishing is to provide institutional support for recognizing OA publishing or advocacy efforts of researchers in tenure applications. In fact, some participants suggested that including OA publishing effort in grant applications might help improve OA uptake among researchers. This finding corroborates de Winde et al. (2020)'s recommendations that additional review criteria in funding applications should include applicants' commitment, outreach, and advocacy efforts on open science practices. This might help ensure that researchers are thinking of and actively engaging in OA publishing in their research practices. Similarly, as participants suggested, it is important to build and incentivize OA culture within the academia. This was emphasized by Greg, who advised, "if you're a leader in these academic fields, really think about leading the way in open access publishing because people will follow." One way of achieving this is by encouraging older faculties to publish OA through institutional OA policy, thereby promoting the culture of openness (Zerkee et al., 2021). Although it is not expected that OA publishing is made compulsory, it is expedient to talk about its benefits and create structures that would help researchers to comfortably translate their positive perceptions into meaningful practices.

6.4.3 Prestige and impact factors as institutional barriers

Another recurrent barrier to OA publishing by the participants is limited prestigious OA journals, which has made researchers to patronize high-raking journals in their disciplines. Many participants regarded prestige and impact factors as systemic limitations to their OA publishing practices. Many participants regarded OA journals as having low prestige because many of them are new and cannot favourably compete with older journals that have enjoyed age-long recognition and prestige. For example, Grayson revealed, "newer outlets are more likely to be open access and so there's that disincentive in that sense." This explains that there is a disincentive to publish in OA journals as they are often newer outlets with limited prestige and recognition. This is particularly discouraging to many participants as they are expected to publish in prestigious outlets. As Emma discussed, "major prestigious journals are for the most part not open access. That is a major barrier. If I want to be publishing in things that are widely

recognized… that's going to be a challenge." The barrier on limited prestigious OA outlets was succinctly emphasized by Paul, when he said, "I think the reason why people publish in non-open access to begin with is just the prestige of the title itself." This means prestige in an important determining factor for researchers when choosing a publication outlet.

Interestingly, many participants who discussed limited prestigious OA outlets as a barrier to their OA publishing were ECRs. This also explains the quantitative findings on why MCRs have published more in OA outlets. Many MCRs now have the freedom to publish in any outlets they deem fit because they are at more advanced stage of their career (Baldwin et al., 2008), and do not have to worry about the stressful tenure dossier evaluation which favours publications in prestigious outlets. This is evident as some ECRs noted that they will consider publishing most of their works in OA journals after they get tenured.

One way of reducing this barrier is to improve prestige and quality of OA outlets. As suggested by the participants, this can be achieved by improving the quality of the peer-review and editorial processes of OA journals. As John suggested, "quality peer-review improves the general outputs of journals and attract reputable researchers as reviewers and authors." This is particularly important as researchers often measure the quality of journals by the quality of their peer-reviews and reputation of journals (Coonin, 2011). The prestige of OA journals would improve if older professors were publishing in them, and if top-ranked professors are reviewing and serving on their editorial boards (Zerkee et al., 2021).

6.4.4 Technical issues with institutional repositories

Many interview participants reported some challenges due to the difficulties and time limitation in using IRs. Findings showed that participants were concerned about the findability, accessibility, and discoverability of IRs. Findability and accessibility refer to the ease with which contents could be found and accessed by users (Gall, 2006; Hammar, 2014), while discoverability concerns how easy the contents in these outlets could be found by search engines (Máchová, Hub, & Lnenicka, 2018; Marsh Rebecca, 2015). Many participants revealed that the reason for not using IRs is due to technical limitation of the findability of these outlets. For instance, Ariana opined, "I don't really believe that they will make it easy for people to find." In addition, some participants reported depositing in preprint servers or using their personal

websites instead of using their IRs. This is because they are not sure of the importance of IRs when their work is already open to the public, either through OA journals or their personal websites. Regarding awareness creation on the use of IRs, it appears that librarians of universities where interview participants were drawn from have not done enough in demystifying the use of IRs for OA publishing. Hence, many participants were not encouraged or well informed on how to use their IRs, thereby limiting their usage. This finding confirms previous studies which found that faculty and researchers are restraining from using their IRs (Dlamini & Snyman, 2017; Francke et al., 2017; Garcia-Penalvo, 2017). Cullen and Chawner (2010) found that while library managers expressed optimism about IRs relevance, the academic community were slow to embrace the concept of IRs and showed little interest in using it for their research.

Similarly, some participants discussed the difficulties with using their IRs, in terms of understanding terminologies and language of preprints and postprints. As Sophia lamented, "I find the whole process a bit confusing, honestly, like trying to figure out the requirements and the language around what's a preprint versus a postprint, it's really not consistent." These technical limitations have negatively impacted on researcher's use of IRs. This is particularly worrisome as participants regarded depositing preprints in IRs as a means of meeting OA publishing requirements in funded grants, but they could not use these outlets because of technical barriers. This demonstrates the need for awareness creation for IRs and their terms of operation to help many researchers understand how they work, the acceptable standards and requirements of these outlets, including embargoes and journal policies. Without proper guidance and help from librarians and information professionals, it may be daunting and confusing for researchers to use IRs.

Previous studies have found that barriers to the use of IRs among faculty are due to the time and effort involved in depositing their research (Foster & Gibbons, 2005; Kim, 2007). Other barriers to the use of IRs found in previous studies include lack of willingness from faculty to deposit contents in IRs (Cullen & Chawner, 2011) and age differences among faculty (Kim, 2008). This finding is also consistent with several previous research studies which found that there has been resistance from faculty and researchers regarding depositing their pre-prints in their IRs (Cullen & Chawner, 2010; Cullen & Chawner, 2011; Dlamini & Snyman, 2017; Francke et al., 2017; Garcia-Penalvo, 2017).

A solution to this barrier was suggested by some interview participants as they emphasized the importance of building community support and collaborating with librarians in demystifying OA publishing and use of IRs. For instance, Olivia suggested, “one of the things that would be useful is to have resource people in our library. I know that we have copyright officers who deal a lot with the copyright of materials.” Libraries offer such services through IRs managers and scholarly communication librarians, but most faculties are often not aware of these services (Narayan et al., 2018). Hence, there is a need to improve awareness creation of services provided in libraries to help researchers effectively use their IRs for preprints deposit, which is a form of OA publishing.

6.4.5 Conflicting and unsupportive OA polices

Participants extensively discussed their experiences with conflicting and unsupportive policies for OA publishing in their institutions. On the one hand, participants revealed not receiving any policy support from their institutions to publish OA. On the other hand, they discussed the disconnect between policy and practice, especially regarding funders’ requirements for OA publishing. While there is a growing requirement by funding agencies to publish OA, participants doubted their ingenuity regarding those policies as there are no mechanisms in place to ensure implementation of such policies. For instance, Georgia revealed, “now SSHRC is leaning more towards requiring that your research be published open access. My only problem is I don't know if it's a like a requirement or just a heavy suggestion.”

Similarly, findings showed that participants are confronted with two different realities when it comes to OA publishing, which is ‘principle and practice.’ In principle, participants believed they should be publishing OA, but in practice, institutional policies for tenure and promotion do not encourage OA publishing. As such, some participants are stuck with the ideals of OA publishing, without translating these principles to practice. This supports an existing study which found that although ECRs and MCRs were enthusiastic about creating lasting impact, they lack effective institutional support to maximize their own research impact (Marcella et al., 2018).

Another conflicting and unsupportive policy experienced and discussed by the participants is the inclusion of OA publishing fees (APCs) in grant applications. Although most funding agencies now allow this in principle, many participants discussed the setbacks they experienced by funding applications reviewers. This was confirmed by some participants who

currently serve as reviewers on SSHRC funding application committees, expressing their displeasure about using taxpayers' money to pay for APCs. They strongly opposed this policy, and believed this is not an ideal way to achieve OA. For instance, Jackson averred, "…to include open access publishing fees in budgets for grants, I think this is just a disaster. A disastrous model for how to achieve open access. And I think it's something that should be actively resisted."

This finding is consistent with studies which stressed that the APC model of OA is not the ideal way of achieving OA (Alperin, 2022). This is because the APC model of OA publishing encourages inequities and widens the equity gap in access to funds for OA publishing (Momeni et al., 2022; Nicholas, Cherifa, et al., 2017), disproportionately affecting women and scholars from developing or poorer countries (Nguyen, Nguyen, Le, Ho, & Vuong, 2021; Olejniczak & Wilson, 2020). Hence, there is a strong push for diamond OA journals, which many funding agencies and advocates believe is the best way to achieve the ideals of OA (Holley, 2018; Johnson, 2019). With diamond OA journals OA publishing is entirely free as authors and readers do not pay to publish or read, respectively (Holley, 2018).

In addition, participants decried the lack of institutional support for OA publishing, as many reported not receiving any support from their institutions to publish OA. Institutional support is important to achieving OA, and this needs to be improved across the U15 universities in Canada. This finding supports Diane's (2018) recommendation for improving OA in universities, as she emphasizes that messages about OA need to be clear, concise, and jargon free. This will help researchers understand the importance of OA in clear and unambiguous terms, and thus improve the support for OA publishing. The low level of support for OA publishing means that OA will continue to experience setbacks, and uptake will continue to be low. Hence, there is a need to provide more institutional support by encouraging partnership with publishers to remove embargo policies for preprints deposit in IRs (Jain, 2011; Kim, 2011). Also, institutional support can be provided by creating awareness on rights retention strategies for authors. Right retention strategies help authors to retain the copyright of their publications, enabling them to deposit author accepted manuscripts in their IRs under Creative Common Attribution (CC By) license (Khoo, 2021). This is a form of institutional support that can help many researchers in their OA publishing practices.

6.4.6 Inequities in OA publishing due to unequal privileges and gender inequality

Findings showed that there is growing inequity in OA publishing caused by unequal privileges. As some participants revealed, they enjoy certain privileges because of their institutions and the countries of birth which others in developing countries or poorer economies do not enjoy. Many universities in Canada are now entering transformative agreements with hybrid journals to cover the cost of publishing OA in those journals (Given & Polkinghorne, 2021; Shearer, 2022). Researchers from such institutions can publish OA without paying for the associated cost of OA publishing, particularly in journals with gold OA models (Bosshart et al., 2022; Moskovkin et al., 2022). If these researchers are in universities with lesser money or developing countries with poorer economies, they would not have enjoyed this privilege. As echoed by Georgia, "I am acutely aware that I am in a privileged situation. My university has the money. My university library does subscribe to a lot of journals."

This finding supports existing studies which found that the current OA publishing models privilege researchers with funding and resources, and limit uptake by researchers with limited funding, particularly those in the Global South (Gray, 2020; Momeni et al., 2022; Raju et al., 2020). So, it is expedient to reduce this inequity through equitable distribution of resources (Seo et al., 2017), ensuring that researchers all over the world have equal access to knowledge and publishing. There needs to be strong partnership between libraries and publishers to reduce inequities in OA publishing. As Holzman (2016) suggested, "librarians and university presses will have to work more closely together and with faculty to see if there are ways, using the professionalism found in all three places, to reduce and redistribute costs" (p. 181).

Participants also discussed their inequity experiences caused by gender disparities. Some female participants lamented their low engagement in OA publishing because of family responsibilities and limited opportunities due to lack of time. For these participants, raising a kid and handling other family responsibilities means that they have limited time to search for OA outlets, which they believed male faculty may not experience. For instance, Freya lamented, "I'm really busy with children, so I'll publish as opportunities arise and they're not always an open access journal, so that limits the possibilities. It totally affects it 'cause I have less time to search out [OA] opportunities" This explains why gender disparity has increased the equity gaps in OA publishing among the participants. In general, the research productivity of male professors has

been found to be lower when compared to their male counterparts (Cui, Ding, & Zhu, 2022; Garner, Porter, Leidolf, & Baker, 2018; Sá, Cowley, Martinez, Kachynska, & Sabzalieva, 2020). This seems to be the case with OA publishing as well, confirming existing studies which found that male professors are more likely to author OA articles (Nguyen et al., 2021; Olejniczak & Wilson, 2020; Zhu, 2017).

However, to reduce gender disparity effect on OA publishing, there should be an awareness creation of viable OA journals, particularly the diamond OA journals relevant to researchers' fields of interest. There needs to be dedicated support for female or other gendered faulty, and racialized women in their scholarly communication practices. As Evelyn advised, "to bring about any kind of systemic change. I think it would have to be like more conversation about it or more support." More conversation about OA is needed, and more support for researchers with limited resources can help reduce these inequities. This stresses the imperativeness of OA in advancing citizen science initiatives, and the need to level the playing field for researchers in developing countries (Tennant et al., 2016).

6.4.7 Research question four summary

The fourth research question asked, "*What inhibits the open access scholarly communication practices of ECRs and MCRs in HASS disciplines in Canada?"* this study found that the barriers hindering OA publishing practices of researchers in the HASS disciplines are mainly institutional and systemic. These range from limited funding to pay for APCs, to tenure and promotion requirements which largely favour publishing in high-impact non-OA journals. In addition, findings showed that participants' OA publishing practices were limited by the technical barriers in IRs due to difficulties with language terminology, time and effort required to deposit preprints, as well as findability and accessibility issues. Findings also showed that conflicting and unsupportive OA policies, particularly regarding the use of grant funding for paying APCs, limited researchers' engagements in OA publishing. Hence, there is a growing equity gap in OA publishing among researchers, as most prestigious OA journals in the participants' disciplines require the payment of APCs. This has disproportionately affected ECRs, and those with limited or no funding for publishing.

6.5 Contribution to research

The study contributes to the understanding of OA scholarly communication practices of researchers from the HASS disciplines in Canada. It provides a comprehensive approach using mixed-methods research design in understanding Canadian HASS researchers' OA publishing practices, which has not been the approach of existing research on OA publishing in Canada. The specific findings from this study provide current understanding of the state of OA publishing in research-intensive universities in Canada, which can help provide strategic ways of achieving the ideals of OA in Canada. As extensively discussed in section 5.3.4, five strategies for improving OA uptake on the HASS disciplines emerged from the interview findings. These are: (1) increase awareness, advocacy, and partnership for OA publishing; (2) improve prestige and quality of OA journals; (3) provide institutional and community support for OA publishing; (4) build and incentivize OA culture withing academia; and (5) provide viable and sustainable OA models.

The findings from the study differ from existing studies because it reveals multiple factors that influence HASS researchers' OA publishing practices. First, it reveals that among all the factors examined in this study, *disciplinary norm* mostly influenced researchers' OA publishing practices. This stresses the need to develop structures for OA publishing in the HASS disciplines, as they may have the strongest influence on OA publishing practices of researchers. Structures for OA publishing in the HASS disciplines may include funding structures that incorporate APCs in funding applications. For instance, OA publishing platforms from funders such as Wellcome Open Research an OA journal that enables grant recipients to publish OA for free (Butler, 2016). It established that there is need for more discipline-supported OA journals which have little or no associated cost to publishing such as the Open Library of Humanities (Eve, 2015).

This study supports existing studies that found that *altruism* has significant influence on researchers' OA publishing and self-archiving practices (Ammarukleart, 2017; Heaton, Burns, & Thorns, 2019; Kim, 2008; Lwoga & Questier, 2014). Altruistic researchers are more likely to publish in OA venues, as respondents revealed that they publish OA because they wanted other researchers to have access to their research. Beyond altruism, this study also found that researchers published OA to increase usage and citation of their research. Interestingly, this study is the first to establish that *situational normality* has a significant influence on OA publishing practices of researchers. Situational normality in this study explains that ensuring

normalcy and standards in OA publishing platforms such as those found in traditional journals, will help improve OA publishing. This is because researchers are often careful of not publishing in predatory journals with questionable practices. By ensuring that OA journals are regulated in terms of peer-review quality and standardization of contents and outputs, more researchers will be encouraged to publish in them. As such, improving content quality of OA journals will help to improve OA publishing practices of researchers.

Another interesting contribution from this study is that it provides a comparison of OA publishing practices of two main categories of researchers. It is the first study in Canada that compares OA publishing of ECRs and MCRs in the HASS disciplines of research-intensive universities. Specifically, this study confirms existing studies that MCRs have published more in OA outlets than do ECRs (e.g., Rodriguez, 2014), but it also helps to shed light on the reasons for this difference. While many ECRs are more supportive of OA in principle, they lag in practice because they are faced with systemic and institutional barriers. These barriers include limited funding to pay for APCs, tenure requirements to publish in high-impact journals, unsupportive and conflicting OA policies, and inequities in OA publishing due to gender disparities. Also, some MCRs do not publish OA because of prestige and age-long traditions in their disciplines, particularly those in the humanities disciplines.

In terms of methodological contribution, this study contributes to a better understanding, design, and application of sequential explanatory mixed-methods in OA scholarly communication research. It contributes meaningfully to existing studies using mixed-methods research design. It provides rigorous steps towards designing structured questionnaire, followed by semi-structured in-depth interviews for explaining and complementing the questionnaire findings. It also provides the rationale and approach for integrating quantitative and qualitative findings, which was done in the section for discussion of findings. This study provides a step-by-step approach to conducting mixed-methods research which can help researchers in LIS and other fields to conduct rigorous studies using the mixed-methods approach.

6.6 Theoretical contribution to LIS scholarship

This study contributes to theoretical application of Social Exchange Theory (SET) and Social Capital Theory (SCT) in the study of and assessment of OA scholarly publishing. SET emerged from sociology and social psychology, examining social exchanges that take place

between individuals in societies (Chen & Choi, 2005). Social exchanges are actions contingent on rewarding actions, better viewed as two sides of a transaction involving the exchange of utility or reward from each other (Homans, 1961). In the scholarly communication landscape, this implies that researchers will publish OA if there are benefits such as visibility and citation increase (Kim, 2007). However, this study found that researchers who published in OA outlets did so, not only because of the external benefits such as visibility of their research and prestige, but because of their personal ideals and altruism.

In most cases, researchers may risk their scholarly recognition by publishing OA, as most OA journals are less prestigious when compared to subscription-based journals (Björk & Solomon, 2012). However, some researchers in the social sciences have continued to publish OA because they are altruistic, and because OA helps to serve their equitable ideals that knowledge should be free. This study also contributes to the understanding of SET as findings showed that associated cost of OA publishing may negatively affect uptake by researchers with limited funding. This is because in social exchanges, people search for maximizing their benefits and minimizing their costs when exchanging resources with others (Jahan & Kim, 2020). As shown in the interview findings, cost of APCs remains one of the major barriers to OA publishing. Hence, in support of the principle in SET, many ECRs tend to maximize their research benefits and minimize their costs by publishing in prestigious non-OA journals.

Similarly, SCT states that social capital are conditions necessary for knowledge exchange to occur, with the significance of relationships as a resource for social action (Nahapiet & Ghoshal, 1998). SCT emphasizes that needed conditions should be in place to enable a successful outcome in an endeavour or an activity (Jones & Leonard, 2008; McKnight & Chervany, 2001). This study contributes to research applying SCT in understanding how trust influence researchers in contributing to IRs (Kim, 2007; Nahapiet & Ghoshal, 1998) and how trust, identification, and pro-sharing norms influence the motivation to exchange knowledge (Kankanhalli et al., 2005). This study went further by focusing specifically on institution-based trust (Song et al., 2018) and found that *situational normality* influenced researchers' OA publishing practices. It stresses that standard and structures (e.g., quality peer-review) in OA outlets are crucial factors that influence researchers' OA publishing. Providing structures that build researchers' trust in their institutional policies regarding OA publishing, as well as safety

and standardization of OA journals, might be a major step towards improving OA publishing in the HASS disciplines.

While library and information science (LIS) values OA, it is also a complex topic that involves individuals, universities, disciplines, funding bodies, policies, and structures. This is because it is challenging to get people to understand and engage in OA practices as many researchers have developed publishing patterns and practices that may not favour OA. It is even more challenging for ECRs to navigate the complex nature of OA publishing when they are dealing with tenure requirements which largely favour publishing in non-OA subscription-based journals. It is also challenging to convince senior researchers who have become accustomed with publishing in top-ranked prestigious journals, to change their publishing practices to favour OA. Achieving a paradigm shift in disciplinary norm regarding OA publishing might take some time. Hence, immediate access to scholarly outputs through OA publishing may continue to face some hurdles.

It is imperative to emphasize that OA will not solve all access issues. Although researchers are publishing in OA outlets, users, researchers, and policy makers may be limited in accessing research outputs because of limited access to the internet. This is more common with countries in the Global South which are known for an alarming rate of digital divide and limited access to the internet. But this is also the case with many developed countries like Canada where Indigenous peoples still have limited access to the internet (Toth, Smith & Giroux, 2018). Recall that the main ideal of OA is to ensure that everyone with access to the internet have access to the outcome of research (BOAI, 2002; Suber, 2003). However, in underserved communities where internet access remains a luxury, access to ground-breaking research may be limited, even if they are openly available. This shows that OA may not solve all access problems. A relevant example to consolidate this is the fact that many interview participants decried the findability and discoverability issues with IRs, one of the routes for achieving OA. Although IRs and other subject repositories are fully open, their contents may remain inaccessible to users because they tend to be less findable and discoverable by search engines (Colati, Dean, & Maull, 2009; Marsolek, Cooper, Farrell, & Kelly, 2018). This stresses the need for LIS scholars to continue their efforts in improving access to information through improved usability of open repositories and library databases.

Another theoretical contribution from this study is that in principle, OA publishing should be a natural fit for scholars. However, interview findings revealed that when precedents are set for OA publishing by established scholars, junior scholars tend to follow suit. This suggests that there needs to be a paradigm shift in attitude towards OA publishing. Interestingly, LIS scholars have institutional leverage for OA publishing as many publishers allow OA publishing of some sorts, whether that is through subsidized APCs or preprints deposit in IRs (Kingsley & Kennan, 2015). With existing research reported that many LIS scholars publish in non-OA outlets (Schultz, 2017), and that most LIS Faculty in North America publish in OA journals, "there remains much room for improvement for a discipline grounded in access to information" (Peekhaus, 2019, p. 42). Hence, this study helps to reinforce the need for OA adoption by LIS scholars, as this may help improve OA uptake in other disciplines. In essence, this study provides a solid foundation for the understanding of OA publishing practices, the barriers to these practices, and how those barriers could be reduced to achieve equitable access to research outputs. This will help LIS scholars in their quest to promote access to scholarly information, as well as contribute to promoting informed and progressive societies, not only in Canada, but globally.

Chapter 7: Conclusions

7.1 Summary

This study sought to investigate OA scholarly communication practices of early- and mid-career researchers in the humanities, arts, and social sciences (HASS) disciplines of research-intensive universities in Canada. To achieve this, four main research questions were posed. These are RQ1. What are the open access publishing practices of ECRs and MCRs in the HASS disciplines in Canada? Are there differences in researchers' OA publishing practices based on career stage, professional status, and academic disciplines?; RQ2. What factors influence researchers' open access publishing practices?; RQ3. How do ECRs and MCRs in the HASS disciplines perceive open access scholarly communication?; RQ4. What inhibits the open access scholarly communication practices of ECRs and MCRs in HASS disciplines in Canada?

To answer these research questions, this study employed a mixed-methods sequential explanatory design by first employing a web-based anonymous questionnaire which addressed RQ1 and RQ2. The findings from the questionnaire then informed the interview questions, which helped to explore the quantitative findings in more depth. In addition, the interviews also addressed RQ3 and RQ4, and provided more insights into researchers' OA publishing practices which were not covered in the questionnaire. The questionnaire and interview findings were integrated in the discussion section, and then compared with existing studies.

Findings showed that OA publishing practices of researchers in the HASS disciplines revolves around publishing in OA journals and institutional repositories. It also involves employing alternative means of scholarly communication through presentations, policy briefs, and supplemental resources, particularly in the social sciences disciplines. However, OA publishing in the humanities and arts disciplines is low, especially among ECRs. Interestingly, results showed that OA publishing practices of HASS researchers were influenced by *disciplinary norm, altruism, perceived content quality*, and *situational normality.* For *disciplinary norm*, this suggests that disciplines that have established norms for OA or recognize the importance of OA will see an increase in the uptake of OA among researchers. *Altruism* suggests that altruistic researchers (those who derive joy in helping others) are more likely to publish OA. Aside *altruism,* the interview findings also showed that researchers published OA because of their ideals of ensuring equal access to knowledge, democratizing knowledge, and

bridging equity gaps in knowledge access. Hence, there is a need to build structures and policies that will motivate researchers to publish OA.

In addition, findings on *perceived content quality* suggest that there is a need to improve content quality of OA journals, as researchers are more concerned about the quality of contents than the prestige of OA outlets. This can be done by improving the quality of peer-review and the overall outputs of OA publications. *Situational normality* suggests that there is need to ensure that conditions for publishing – such as those found in traditional outlets – are also guaranteed in OA journals. These can be done by ensuring the safety of OA outlets, preventing plagiarism, and ensuring researchers' intellectual property.

This study found that many participants positively perceived OA scholarly communication. Many ECRs in the social sciences are more supportive of OA publishing, as they recognized its impact on their scholarship. Negative perceptions of OA publishing by the participants were linked to the APC model of some OA journals which has disproportionately limited OA publishing practices of many ECRs. Many participants regarded OA journals with APCs as predatory and egregious, making them question their quality and prestige. This informed their preference for traditional journals, particularly those in the humanities disciplines. Although, some participants negatively perceived OA publishing, their perceptions do not represent the views of many of the study participants.

This study further found that the barriers hindering OA publishing practices of researchers in the HASS disciplines are institutional and systemic. These range from limited funding to pay for APCs, to tenure and promotion requirements which largely favour publishing in high-impact non-OA journals. In addition, findings showed that participants' OA publishing practices were limited by technical barriers in IRs due to difficulties with language terminology, time and effort required to deposit preprints, as well as findability and accessibility issues. Findings also showed that conflicting and unsupportive OA policies, particularly regarding the use of grant funding for paying APCs, limited researchers' OA publishing. Hence, there is growing equity gap in OA publishing among researchers, as the most prestigious OA journals in the participants' disciplines require the payment of APCs. This has disproportionately affected ECRs, and those with limited or no funding for publishing in gold or hybrid OA journals.

In tackling the barriers to OA publishing in the HASS disciplines, five strategies emerged from the interviews. The first strategy is to increase the awareness creation effort of viable OA

publishing outlets (such as diamond OA), and ensure partnership with libraries, funders, and publishers. Second, there is an urgent need to improve quality of OA journals to attract publishing by notable authors, thereby improving prestige. Third, it is fundamental to provide institutional and community support for OA publishing in higher education institutions. Fourth, effort should be made to build and incentivize OA publishing in the academia. This can be done by recognizing OA advocacy and engagement efforts of researchers, and by encouraging mid-career researchers and older faculty to feel comfortable with publishing OA. Lastly, based on the cost and sustainability issues with OA publishing, it is imperative to build viable and sustainable OA models. This is particularly important as most ECRs and researchers with limited funding cannot afford the cost of APCs associated with many gold and hybrid OA journals, thereby limiting their engagement in OA publishing.

7.2 Limitations of the study

There are limitations of the study that should be acknowledged. First, the structured nature of the questionnaire did not allow for open-ended answers which may have given respondents a chance to express their opinions beyond the given responses to questions. For instance, the barriers limiting OA publishing in Canada were not included in the questionnaire as there was no validated scale that could be adapted. Hence, the interviews accounted for this limitation by providing the questionnaire respondents the opportunity to follow-up their responses in semi-structured interviews for in-depth discussions. Since not all those who responded to the questionnaire participated in the interviews, this study may have missed some information regarding OA publishing practices of some researchers.

Another limitation about definition of terms in the questionnaire should also be noted. As IRs were initially designed to focus on pre-prints and other materials such as theses and dissertations, current expectations from Tri-Agency have shifted primarily to post-prints, which is the accepted authors' version of the article. As most of the discussions from the study participants focused more on pre-prints depositing, publishing OA through this means is inconsistent with tri-council policy. Pre-prints do not actually make the work OA because it makes available an unvetted and potentially problematic version of the work. Hence, definitions for IRs should be updated to focus on post-prints rather than preprints. Also, a limitation on the

conceptualization of some concepts used in the study is warranted. For example, *prestige* was conceived differently by the questionnaire respondents and interview participants. The questionnaire respondents understood prestige in terms of the outlets and its impact on their reputation within their disciplines. However, interview participants understood *prestige* in OA publishing in terms of content quality and not about the reputation they get by publishing OA. This may have contributed to the differences in the understanding of how the prestige of OA outlets influenced study participants' OA publishing practices.

It is also important to note a possible limitation with the sample selection for the interviews. This is because participants invited for the interviews were those who indicated interest in the optional sign-up form provided at the end of the questionnaire. This might have introduced bias in the selection process by limiting it to only those who responded to the questionnaire. Notably, this study only included researchers from the U15 universities in Canada. This may limit the applicability of the findings to the selected universities and not all universities, colleges, and institutes in Canada where research is being conducted. Also, this study comprised mostly professors with tenure-track positions, with more participation from Associate Professors (MCRs) and Assistant Professors (ECRs). This may not reflect the actual distribution of all position types, including those on limited-term contracts, many of whom may conduct research as well. This may have introduced bias in the overall representation of all researchers in the sampled disciplines, and as such could not be generalized to all category of researchers, and all research disciplines in Canada.

7.3 Implications for practice

The findings from this study have several implications for the HASS disciplines, faculty, publishers, academic libraries, universities, and funding agencies in Canada. First, it is imperative to develop norms and practice for OA publishing in the HASS disciplines. As findings in this study established, disciplinary norms significantly influenced researchers' OA publishing practices, suggesting that disciplinary norms are essential for improving OA uptake in Canada. It is expedient to encourage the practice of and advocacy for OA publishing across higher education institutions. As such, there is a need to encourage OA publishing within the HASS disciplines. To encourage OA publishing practice among HASS researchers, there is a need to provide support for OA publishing by recognizing the credibility of OA journals in

contributing to the knowledge economy. Publishing in newer OA journals should not affect researchers' credibility, especially if those journals are viable and not predatory.

The findings in this study also have relevant implications for faculty because they are significant contributors of knowledge in the society. Their acceptance of and engagement in OA publishing will be a significant step towards improving OA uptake within the academia. For OA publishing to be normalized among the faculty, tenured faculty (e.g., mid-career researchers and older faculty) should be comfortable with publishing in newer and viable OA journals. For example, findings showed that many pre-tenured faculty are more supportive of OA in principle. However, their practices were limited due to tenure requirements to publish in top-tier journals, which are usually paywalled. It can therefore be assumed that the engagement of tenured and older professors in OA publishing will set precedents for younger faculty, encouraging them to publish in such outlets. For faculty members to fully engage in OA publishing, the first step might be to access Directory of Open Access Journals (DOAJ) which list thousands of viable OA journals. The majority of the OA journals listed in DOAJ are diamond OA journals which do not charge APCs. Hence, faculty members can search for journals relevant to their fields or research areas and publish therein.

The age-long evaluation metrics adopted in higher institutions need to be revamped and made flexible enough to recognize budding OA journals, which may not be as prestigious as the traditional subscription-based journals that have existed for decades. For OA journals to climb up the ranking list, more researchers need to publish in them. As more renowned researchers publish in these newer OA journals, citations of articles in these journals will increase, and in return their impact ratings might increase as well. Also, it is important for established scholars to serve as reviewers for diamond OA journals that help to project the ideals that knowledge should be freely available, without the barriers of cost and other restrictions. It is important for researchers to redirect their efforts from for-profit journals that continue to perpetuate inequity in scholarly publishing, to diamond OA journals that help to achieve the ideals of OA. Researchers should recognize the barriers to knowledge caused by exorbitant access fees from for-profit publishers as an epidemic to the knowledge society. Hence, there needs to be concerted efforts by researchers to fully support OA journals by serving as reviewers and on their editorial boards, which will attract more researchers to publish in them. This, in turn, might help to improve their impact ratings and prestige, making them viable alternatives to paywalled journals.

Furthermore, there needs to be an improvement of content quality and prestige of OA outlets. This study showed that perceived content quality have significant positive relationship with OA publishing practices of researchers. Therefore, OA publishers should improve the quality OA articles and publications through rigorous peer-review, quality typesetting and editing, as well as the overall production of OA articles. To encourage OA publishing uptake by researchers, it is important for academic publishers to lower the cost of OA publishing in gold and hybrid OA journals and remove embargo periods for post-prints deposit in IRs. Academic publishers should be more passionate about the public good and enhance research development rather than focus more on profit making. Stringent requirements such as the demonstration of publishing in top-tier journals might hinder researchers from publishing in OA journals which are usually less ranked than the tradition top-tier journals. As such, this requirement should be relaxed, and collaborative efforts to fund and sustain viable OA journals should be sought with the government, funding agencies, and libraries.

Undoubtedly, academic libraries have important contributions to make in improving OA uptake in higher education institutions. Libraries should increase their awareness creation efforts in support of OA publishing by providing institutional support for OA publishing, particularly the use of IRs for depositing preprints and postprints. Necessary support in terms of removal of embargos for author accepted manuscripts, and strategies for authors' rights retention should be provided. Librarians should create more awareness about authors' retention strategies, which give the authors the right to retain copyright of their research works. A good example is the Plan S Rights Retention Strategy (RRS) that required authors submitting to paywalled journals to inform authors that author accepted manuscripts will be made available under a creative Commons Attribution (CC BY) license (Khoo, 2021). While the RRS is not the best way of achieving OA, it can help ECRs who prefer to publish in top-tier journals for the sake of their career progression and tenure. As many libraries in Canada are entering transformative agreements with gold and hybrid OA journals, it is expedient for libraries to help researchers to be aware of prestigious OA journals covered in their transformative agreements. This will enable them to publish OA without paying the associated APCs in gold and hybrid OA journals.

There needs to be policy revamp in favour of OA publishing by higher education institutions in Canada. The tenure requirements favouring publications in top-tier journals need to be revamped. This can be done by recognizing the impact of research in terms of engagement,

readership, policy impact, knowledge translation of the research, and not just by the h-index and webometrics rankings of the journals. There needs to be more concerted efforts policy-wise to help researchers translate their positive OA perceptions to actual practices. This can be achieved by measuring the impact of research by metrics that do not restrict researchers to publishing in highly ranked, paywalled journals. Universities should also think about adopting OA policies and knowledge mobilization policies that will make researchers to actively think about publishing OA. A good starting point is to sign the San Francisco Declaration on Research Assessment (DORA), which stresses that "incorporating open access activities as explicit criteria in researcher assessment is important for the sake of scientific progress—and its ability to efficiently address societal challenges." (DORA, 2018, p. 2). Although all major funding agencies in Canada signed the declaration in 2019, only seven universities have signed the declaration. If OA practices are recognized in research assessment, more researchers will be inclined and motivated to actively think or and publish OA.

Finally, funding agencies should increase research funding for researchers in the HASS disciplines to enable and encourage them to publish OA. Findings showed that participants lamented limited funding for researchers in the humanities and social sciences. Hence, there is a need for more targeted funding for OA publishing, particularly for ECRs and pre-tenured faculty. With the current high cost of APCs – often accounting for about 25% of HASS researchers' funding – paying to publish remains strenuous on the limited budgetary allocations of researchers. Hence, funders should increase their support and fund diamond OA journals and association journals to reduce the cost of OA publishing. Thus, it is important for funders to ensure equitable distribution of resources for research, and provide more financial and policy support for ECRs, gendered faculty, and underrepresented researchers.

7.4 Conclusion

This study investigated OA scholarly communication practices of ECRs and MCRs in research-intensive universities in Canada. Findings showed that MCRs have published more in OA outlets than did ECRs. Quantitative findings showed that respondents from the social sciences have published more in OA journals than respondents from the arts and humanities. Publishing in OA monographs and OA proceedings is low among all the respondents. Interestingly, qualitative findings showed that there is an increasing use of IRs by participants

from the social sciences, which was because most of them used IRs for meeting funder's requirements for OA publishing. Despite increasing use of IRs, many participants complained of barriers such as redundancy, low findability, and discoverability issues.

In addition, participants have explored alternative means of scholarly communication, including the use of presentations, reports, policy briefs, and supplemental resources to reach non-academic audiences. Some interview participants also discussed having used SSRN, personal websites, and social media platforms for promoting readership and access to their research, instead of publishing in OA journals or depositing their preprints in IRs. This helped them prepare for and demonstrate their commitments to meeting funders' requirements for knowledge mobilization.

Results also showed that, of all the factors examined in the quantitative phase, four factors were found to have the strongest effect on respondents' OA publishing practices. These were *disciplinary norm*, *altruism*, *situational normality,* and *perceived content quality*. Findings on disciplinary norm suggest that researchers from disciplines with norms for OA are more likely to publish OA. Also, altruistic researchers are more likely to publish OA because they derive joy in helping users have access to their research. Situational normality and perceived content quality suggest that quality control mechanisms, and quality of peer-review of OA articles influenced researchers' OA publishing practices. Hence, there is a need for quality control of OA contents and platforms to increase participation and engagement by researchers.

Regarding researchers' perceptions of OA publishing, the majority of interview participants perceived OA publications to be of equal quality when compared with traditional publications. Many ECRs are more positively disposed to publishing OA in principle, but they are limited in practice. However, few participants from the humanities still felt that OA publications are of lower quality and hence are reluctant to publish OA. Besides, long-standing tradition of some disciplines (e.g., classics and history) hindered some participants to publish OA. Many participants believed that knowledge should be open, and OA is instrumental for achieving equity of access, bridging equity gaps in knowledge, democratizing knowledge, and promoting social justice.

It is important to note that several barriers limited participants' OA publishing practices. Prominent among the barriers are the systemic and institutional barriers in the form of limited funding to pay for APCs, tenure and promotion requirements which favour publishing in

traditional outlets, limited prestigious and quality OA journals, as well as conflicting and unsupportive OA policies. Also inherent in these barriers, is the influence of career stage on OA publishing, as MCRs are not often faced with the same challenges facing the ECRs. For instance, expectations for tenure and promotion limited ECRs' OA publishing practices because they are still building their academic profile. Hence, they feel compelled to publish in top-tier, high-impact factor journals which are usually behind paywalls.

The differences in experiences of ECRs and MCRs also revealed the inequity in OA publishing. These include excessive cost of APCs, unequal privileges, and gender disparity, which affected female professors who are early in their careers than male professors in both early and mid-career stages. Improving OA publishing by researchers is fundamental to achieving equity of access to research and knowledge, especially among the Global South. Hence, there is a need to support and provide viable, equitable, and sustainable OA publishing models, particularly the diamond OA.

The comprehensive approach of this research contributes to a more robust understanding of OA publishing practices of HASS researchers in research-intensive universities. The findings will help OA policymakers, stakeholders, publishers, researchers, and higher education institutions to better understand how to improve OA uptake in Canada. This study will also help policymakers and stakeholders to better approach equity of access to information and knowledge, which is expedient for fostering creativity and development. This study supports the development of effective methods in assessing scholarly communication practices and strategic ways of improving OA publishing in Canada and elsewhere.

7.5 Future research

Future research might benefit from the comparison of OA publishing practices of researchers in the HASS disciplines and the STEM fields in research-intensive universities in Canada. This will help provide overarching understanding of OA publishing by researchers in all fields, which might provide more strategic ways of improving OA uptake in Canada. Currently, several studies have focused on specific disciplines, leaving a gap in knowledge on the state of OA publishing in all disciplines. Hence, this is an important gap to be filled in future research.

In addition, little is currently known about the growing equity gaps in OA publishing practices of researchers in Canada. Hence, there is a need to further explore the impact of gender, race, and institutional policies on OA publishing practices of underrepresented researchers in Canadian higher education institutions. As shown in this study, some female professors lamented their inability to publish OA due to family responsibilities and limited time to search for relevant OA outlets. Female participants also decried increasing service loads and commitments in their universities, which invariably limited their efforts to publish OA. Hence, further research is needed to evaluate the state of equity in OA scholarly communication. This will help unveil the inequity in OA publishing due to race, gender, social-economic indices, and how institutional commitments have negatively (or positively) influenced OA publishing practices of researchers. Research questions that could be asked include: Are there differences in researchers' OA publishing based on racial inequalities and gender disparities? How has race and gender differences among researchers in meta-disciplines impacted their OA publishing practices?

Finally, future research may benefit from an exploratory study using interviews or focus groups discussions with funding agencies representatives in Canada. This might provide a better understanding of institutional policies, expectations, and evaluation strategies for OA publishing of funded research. At present, little is known about the mechanisms put in place for ensuring compliance to OA mandates and requirements by funders. Although, funding agencies are increasing their support for OA publishing through mandates and funding allocations, there needs to be more structured systems for evaluation and compliance. This is needed to provide a better understanding of the current realities and future expectations of OA publishing in Canada.

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Appendices

Appendix A: REB approval certificate

McGill

Research Ethics Board Office
James Administration Bldg.
845 Sherbrooke Street West. Rm 325
Montreal, QC H3A 0G4

Tel: (514) 398-6831

Website:www.mcgill.ca/research/research/compliance/human

Research Ethics Board 2
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 21-06-008

Project Title: Assessing open access scholarly communication practices of early and mid-career researchers in Canada

Principal Investigator: Philips Ayeni
Status: Ph.D. Student

Department: School of Information Studies
Supervisor: Professor Rebekah Willson

Approval Period: June 15, 2021 – June 14, 2022

The REB 2 reviewed and approved this project by delegated review in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Participants and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.

Lynda McNeil
Associate Director, Research Ethics

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* Approval is granted only for the research and purposes described.
* Modifications to the approved research must be reviewed and approved by the REB before they can be implemented.
* A Request for Renewal form must be submitted before the above expiry date. Research cannot be conducted without a current ethics approval. Submit 2-3 weeks ahead of the expiry date.
* When a project has been completed or terminated, a Study Closure form must be submitted.
* Unanticipated issues that may increase the risk level to participants or that may have other ethical implications must be promptly reported to the REB. Serious adverse events experienced by a participant in conjunction with the research must be reported to the REB without delay.
* The REB must be promptly notified of any new information that may affect the welfare or consent of participants.
* The REB must be notified of any suspension or cancellation imposed by a funding agency or regulatory body that is related to this study.
* The REB must be notified of any findings that may have ethical implications or may affect the decision of the REB.

Appendix B: REB amendment approval certificate

McGill University
Research Ethics Board Office (REB1,2,3,4)

AMENDMENT REQUEST FORM

Proposed changes/updates to a currently approved study must be approved by the REB before implementation. Modifications to studies should be changes within the scope of the original study, not new studies that are simply related to the original study. Significant or numerous changes to study methods, participant populations, location of research, the research question or where the amendment will change the overall purpose or objective of the originally approved study, will require the submission of a new application.

REB File #**:** 21-06-008

Project Title**:** Assessing open access scholarly communication practices of early and mid-career researchers in Canada

Principal Investigator: Philips Ayeni

Email: philips.ayeni@mail.mcgill.ca

Faculty Supervisor (for student PI): Dr. Rebekah Willson

* Please describe in detail each of the proposed changes and how these differ from currently approved procedures. Explain why the modifications are needed.

  Modifications are needed for interview guide and interview invitation emails. This is because I employed a sequential explanatory mixed-methods design where data to be collected as the interview was informed by the results from the survey. In my Ethics application, I included a tentative interview guide and indicated that I would update it based on my survey results and findings. The interview questions were informed by my survey results, and they are more targeted at answering the research questions. Attached is Appendix F which is the updated version of the interview guide for this study.

  Also, I did not include any interview recruitment email in my Ethics application. I have included two interview recruitment emails in this amendment. This first email addresses those who already signed up for the interview using the optional sign-up form at the end of the questionnaire. The second is included in case I need to recruit new volunteers if interview participants are not enough. For the interview, I need at least 20 volunteers. Although 27 researchers have indicated interest in the interview, actual participation may not be up to 20. Hence, there may be a need to further recruit new volunteers. However, the population and method of recruitment is the same as stated in my Ethics application. The interview consent form and everything else remains the same.

* Will any follow up actions be required with participants already enrolled in the study (e.g., re-consent) or will these changes only apply to new participants? If applicable, describe follow up actions needed.
  Not applicable.

* Will the modifications change the risks or potential benefits to participants? If yes, please

  describe. Not applicable.

* List below and attach all new and revised documents e.g. consent/assent forms; recruitment documentation; study measures. Identify each one by name and version date. Changes must be highlighted or track changed on revised documents.
  * Interview recruitment emails
  * Revised interview guide

Principal Investigator Signature: Date: February 8, 2022

(for student PI)

Faculty Supervisor Signature: Date: February 8, 2022

For Administrative Use

REB#:21-06-008(0222)

Amendment approval date: February 22, 2022

Comments/Special Conditions:

lynda.mcne Digitally signed by DN:lynda.mcneil@mcgill.ca cn=lynda.mcneil@mcgill.ca -05'00'

Project Approval Expires: June -14-2022

Appendix C: Questionnaire

1. OA Scholarly publishing practice

Questions 1a to 1c ask about your open access (OA) publishing experience, frequency of OA publishing, and the extent of publishing your research through various OA channels.

Definitions

***Open access journals:** Journals that publish articles online, permitting anyone with an internet connection to access, read and use without any technical, legal, and copyright restrictions (e.g., most open access journals are listed in the Directory of Open Access Journals).*

****Open access monographs**: The digital publishing of monographs or books in open access.*

*****Open access conference proceedings**: Articles published in open access as proceedings of the conference, which is different from open access journals.*

******Institutional repositories (IRs)**: A* set *of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. IRs usually contain electronic Theses and Dissertations, unpublished preprints, postprints, teaching materials, technical reports, datasets, etc.)*

1a. OA publishing experience

Have you have ever published OA in the following channels?

	No	**Yes**
Open access journals		
Open access monograph/books		
Open access conference proceedings		
Self-archiving in Institutional Repositories		

1b. Frequency

In the past three years, how many times have you published in the following OA channels?

Responses: None = 1, 6+times =5

	None	**Once**	**2-3 times**	**4-5 times**	**6+times**
Open access journals					
Open access monograph/books					
Open access conference proceedings					
Self-archiving in Institutional Repositories					

1c. Extent

What percentage of your research have you published in the following OA channels in the last three years?

	None	**1-25 %**	**26-50 %**	**51-75 %**	**76-100 %**
Open access journal article					
Open access monograph/books					
Open access conference proceedings					
Self-archiving in Institutional Repositories					

Questions 2 to 7 ask about the factors that may influence your open access publishing practices.

2. Visibility

Please indicate to what extent you agree or disagree with the following statements.

Responses: Strongly Disagree (**SD**), Disagree (**D**), Neutral (**N**), Agree (**A**) and Strongly Agree (**SA**),

	SD	**D**	**N**	**A**	**SA**
Publishing OA allows the products of research to become readily available					
Open access publishing increases the readership of research outputs					
Publishing OA makes research work become wide open to everybody					

3. Prestige

Please indicate to what extent you agree or disagree with the following statements.

Responses: Strongly Disagree (**SD**), Disagree (**D**), Neutral (**N**), Agree (**A**) and Strongly Agree (**SA**),

	SD	**D**	**N**	**A**	**SA**
Sharing research through open access publishing improves my prestige within my discipline.					
Researchers in my discipline who share their research through open access publishing have more prestige than those who do not**.**					

Sharing research through open access publishing improves others' recognition of me.					
When I share my research through open access publishing, my colleagues respect me.					

4. Altruism

Please indicate to what extent the following statements describe your approach to work as a researcher.

Responses: Very untrue of me (**VU**), Untrue of me (**U**), Neutral (**N**), True of me (**T**), Very true of me (**VT**),

	VU	**U**	**N**	**T**	**VT**
I enjoy sharing my research with others through open access publishing.					
I enjoy helping other researchers by sharing research through open access publishing.					
It feels good to help other researchers by publishing in open access.					
Sharing my research with others through open access publishing gives me pleasure.					
I willingly help other researchers who have limited access to research by publishing OA.					
I am always ready to lend a helping hand to other researchers by publishing OA.					

5. Institution-Based Trust

Please indicate to what extent you agree or disagree with the following statements about OA publishing platforms.

Responses: Strongly Disagree (**SD**), Disagree (**D**), Neutral (**N**), Agree (**A**) and Strongly Agree (**SA**),

5a. Situational Normality	**SD**	**D**	**N**	**A**	**SA**
The steps required to publish in OA publishing platforms are similar to other traditional publishing platforms					
The nature of the interactions with the OA publishing platforms is similar to other traditional publishing platforms.					

The OA publishing platforms operate like other traditional publishing platforms.					
The peer-review quality of OA publishing outlets is of a similar standard when compared with other traditional publishing platforms.					
5b. Structural Assurance	**SD**	**D**	**N**	**A**	**SA**
I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the platforms.					
I feel that encryption and/or other security and privacy policies in OA publishing platforms can make it safe for me to use the system.					
The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system.					

6. Perceived quality

Please indicate to what extent you agree or disagree with the following statements when choosing an OA outlet to publish in.

Responses: Strongly Disagree (**SD**), Disagree (**D**), Neutral (**N**), Agree (**A**) and Strongly Agree (**SA**),

6a. Perceived impact	**SD**	**D**	**N**	**A**	**SA**
It is important that the OA journal/monograph/proceedings have a high impact factor.					
It is important that the OA journal/monograph/proceedings enjoy high status within its field of research.					
It is important that the OA journal/monograph/proceedings are prestigious to publish in.					
6b. Perceived content quality	**SD**	**D**	**N**	**A**	**SA**
It is important that the OA journal/monograph/proceedings normally publish very good quality articles.					
It is important that the OA journal/monograph/proceedings publish articles of consistent quality.					
It is important that the OA journal/monograph/proceedings offer very reliable peer review.					

7. Disciplinary norm

Please indicate to what extent you agree with the following regarding the norms for OA publishing in your discipline.

Responses: Strongly Disagree (**SD**), Disagree (**D**), I do not know (**N**), Agree (**A**), and Strongly Agree (**SA**)

	SD	**D**	**N**	**A**	**SA**
There is a norm of OA publishing in my discipline.					
There is a norm of research collaboration in OA journals/monographs/proceedings in my discipline.					
There is a willingness to promote OA publishing in my discipline.					
There is a norm of citing OA articles in my discipline.					

8. Demographics

a. Which of the following best describes your current professional rank?

- o Post-doctoral researcher
- o Sessional/Part-time lecturer/instructor
- o Assistant professor
- o Associate professor
- o Full professor
- o Others (please specify)

b. Are you in a contract, tenured, or tenure track position?

- o Contract
- o Tenure track
- o Tenured
- o Other, please indicate your contract type _____

c. In what year did you start to work as a professor/lecturer in your university?

Please provide year _____

d. In what year were you granted your doctoral degree?

Please provide year _____

e. What is the name of the discipline you were trained in?

f. What is the name of the discipline of your department?

g. What is the name of the discipline you identify with?

h. Which of the following broader academic discipline do you identify with?

- o Humanities
- o Arts
- o Social sciences
- o Others, please specify _____

i. Gender: How do you identify?

- o Man
- o Woman
- o Non-Binary
- o Would rather not say
- o Prefer to self-describe, below:
- o Self-describe _____

j. Please indicate your age group.

- o 21-30
- o 31-40
- o 41-50
- o 51-60
- o Over 61
- o Would rather not say.

Thank you for your time spent taking this survey. Your response has been recorded.

OPTIONAL (this appeared after participants submitted their responses for the survey)

We are seeking volunteers to participate in a follow-up interview that expands on your perceptions and understanding of open access publishing in the humanities, arts, and social science disciplines. The interview will last for about 60 minutes. If interested, please provide us with your email address.

Confidentiality and Privacy: Your email is used only by the researchers to contact you and will be deleted after you are contacted and interviewed. Your email will not be linked to your survey response. Please click this link (**URL**) to enter your email address to receive invitation to participate in the interview.

Appendix D: Constructs and items development, with original and adapted scales and sources

Constructs	Original Item	Adapted item	Factor loadings of original items	Source
Open access publishing practices				
Whether or not researcher publish OA	Have you ever made your research/teaching materials publicly accessible on the internet?	Have you have ever published OA in the following channels?	N/A	Kim (2008)
Frequency	In the past 3 years, how many times have you deposited pre-refereed drafts in the following ways?	In the past 3 years, how many times have you performed the following OA channels?	N/A	
Extent	What percentage of following your work produced in the last 5 years have you made publicly accessible on the Internet? • Personal website • Research group/lab/center web sites • Subject-based open archives • Institutional Repository	What percentage of your research have you published in the following OA channels in the last three years? • Open access journal article • Open access monograph/book • Open access conference proceedings • Institutional repository	N/A	
Benefit factors				
Visibility	Publishing in open access journals allows the products of authors' work to become more readily available	Publishing OA allows the products of my research to become readily available	0.774	Park (2007)
	Most open access journals increase readership	OA publishing increase readership of my research	0.629	
	Publishing in open access journals makes authors' work become wide open to everybody	Publishing OA makes my work become wide open to everybody	0.754	
Prestige	Sharing my knowledge through EKRs improves my image within the organization	Sharing my research through open access publishing improves my prestige within my discipline	0.66	Kankanhalli, Tan, & Wei (2005) Moore and Benbasat (1991)

	People in the organization who share their knowledge through EKRs have more prestige than those who do not	Researchers in the discipline who share their research through open access publishing have more prestige than those who do not	0.82	Kankanhalli, Tan, & Wei (2005) Moore and Benbasat (1991)
	Sharing my knowledge through EKRs improves others recognition of me	Sharing my research through open access publishing improves others recognition of me	0.78	Kankanhalli, Tan, & Wei (2005)
	When I share my knowledge through EKRs, the people I work with respect me	When I share my research through open access publishing, my colleagues respect me	0.86	Kankanhalli, Tan, & Wei (2005) Kalman (1989)
Altruism	I enjoy sharing my knowledge with others through EKRs	I enjoy sharing my research with others through open access publishing	0.82	Kankanhalli, Tan, & Wei (2005)
	I enjoy helping others by sharing my knowledge through EKRs	I enjoy helping others by sharing my scholarly work through open access publishing	0.86	
	It feels good to help someone else by sharing my knowledge through EKRs	It feels good to help other researchers by publishing open access	0.84	
	Sharing my knowledge with others through EKRs gives me pleasure	Sharing my knowledge with others through open access publishing gives me pleasure	0.81	
	Willingly helps others who have work related problems.	I willingly help other researchers who have limited access to research by publishing OA	0.947	Podsakoff et al., (1990; Guinot, 2015)
	Is always ready to lend a helping hand to those around him/her.	I am always ready to lend a helping hand to other researchers by publishing OA	0.995	
Contextual factors				
Institution-based trust *Situational normality (SN)*	The steps required to participate in the online community website are similar to other typical online community websites.	The steps required to publish in OA publishing platforms are similar to other typical publishing platforms	0.752	Song et al., (2018); McKnight & Chervany (2001); Ozlati (2015)
	The nature of the interactions with the online community is similar to other typical websites.	The nature of the interactions with the OA publishing platforms is similar to other publishing platforms	0.891	
	The online community operates like other online communities	The OA publishing platforms operate like other publishing platforms	0.815	

		The peer-review quality of open access journals are of similar standard when compared with other traditional publishing platforms	*New item*	
Structural assurance (SA)	I feel that the legal and/or technological structures in the online community are adequate to protect me from potential problems while using the online community.	I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the OA publishing platforms	0.920	
	I feel that encryption and/or other security & privacy policies in my online community can make it safe for me to use the online community.	I feel that encryption and/or other security & privacy policies in OA publishing platforms can make it safe for me to use the OA publishing platforms	0.940	
	The security and privacy protection in the online community can provide me with a robust and safe environment to use the system.	The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system.	0.923	
Perceived quality	(When choosing a journal for submitting an article, it is important that the journal…)	(Please indicate to what extent you agree or disagree with the following statements when choosing an OA journal to publish in)		Mokesness & Olsen (2017; 2020)
Perceived impact	…has a high impact factor.	It is important that the OA journal has a high impact factor	0.73	
	…enjoys high status within its field of research.	It is important that the OA journal enjoys high status within its field of research	0.83	
	…is a prestigious journal to publish in.	It is important that the OA journal is a prestigious journal to publish in	0.82	
Perceived visibility	…has a wide audience.	*Item not used in the present study*	0.67	
	…offers fast turnover from submission to publication.	*Item not used in the present study*	0.62	
	…has a good reputation in terms of communication with authors.	*Item not used in the present study*	0.78	
	…normally publishes very good quality articles.	It is important that the OA journal normally publishes very good quality articles	0.90	

Perceived content quality	…publishes articles of consistent quality	It is important that the OA journal publishes articles of consistent quality	0.91	
	…offers very reliable peer review.	It is important that the OA journal offers very reliable peer review	0.73	
Disciplinary norm	There is a norm of cooperation in my organization	There is a norm of cooperation for OA publishing in my discipline	0.81	Kankanhalli, Tan, & Wei (2005); Goodman and Darr (1998)
	There is a norm of collaboration in my organization	There is a norm of research collaboration in OA journals in my discipline	0.82	
	There is a willingness to value and respond to diversity in my organization	There is a norm of valuing and respond to OA publishing in my discipline	0.66	Kankanhalli, Tan, & Wei (2005)
		There is a norm of citing OA articles published in my discipline	*New item*	
Demographics				
Professional rank	Which of the following best describes your current professional rank? o Assistant professor o Associate professor o Full professor o Distinguished professor o Others (please specify)	Which of the following best describes your current professional rank? o Post-Doctoral researcher o Sessional/Part-Time Lecturer o Adjunct professor o Assistant professor o Associate professor o Full professor o Professor emeritus Others (please specify)	N/A	Kim (2008)
Tenure Position	N/A	Are you in a tenured or tenure track position? o Tenured o Tenure track o Not applicable (e.g., I am not in a tenured or tenure track position Please indicate (_____)	N/A	
Discipline	NA	What is the name of the discipline you were trained in?	N/A	
	NA	What is the name of the discipline of your department?		
	NA	What is the name of the discipline you identify with?		

	NA	Which of the following broader academic discipline do you identify with?		
Gender	N/A	Gender, how do you identify, Self describes below: o Man o Non-binary o Woman o Prefer to self-describe, below Self-describe:	N/A	
Age	N/A	Please indicate your age group. o 21-30 o 31-40 o 41-50 o 51-60 o Over 61 o I am not able to say/I prefer not to say	N/A	Evans, Wensley, & Frissen, 2015

Appendix E: List and code numbers of HASS disciplines in Canada

Disciplines according to CRDC	**Researcher-Assigned Code #**
Humanities and Arts	
Applied ethics	1
Archaeology	2
Architecture	3
Art history and theory	4
Creative writing	5
Cultural studies	6
Curatorial and related studies (e.g., museum studies)	7
Design practice and management	8
Digital humanities	9
Historical studies	10
History and philosophy of specific fields	11
Languages	12
Linguistics	13
Literature and literary studies	14
Music	15
Performing arts	16
Philosophy	17
Religion and religious studies	18
Visual arts and media arts	19
Social sciences	
Anthropology	20
Criminology	21
Demography	22
Economics and business administration	23
Education	24
Law and legal practice	25
Media and communications	26
Political science and policy administration	27
Psychology and cognitive sciences	28
Social and economic geography	29
Social work	30
Sociology and related studies	31
Others	32
Not reported	33

Note: I rearranged the disciplines alphabetically and assigned code numbers for analysis purpose.

Appendix F: Questionnaire recruitment emails

La version française suit.

Dear Professor «Name»,
I hope this finds you well. You have been invited to participate in a survey.

The survey is titled: **Assessing open access scholarly communication practices of early and mid-career researchers in Canada.**

The purpose of this study is to investigate the open access (OA) scholarly communication practices of early and mid-career researchers in the humanities, arts, and social sciences (HASS) disciplines in Canada. Funding agencies are requiring researchers to disseminate their research results either through OA journals, or in subject/institutional repositories. However, research has shown that OA uptake in the HASS disciplines is relatively low. We hope to identify factors that influence OA practices of researchers, as well the barriers and facilitators.

If you are an early career researcher (within five years from the start date of their first research-related appointment) or mid-career researcher (within five to 15 post PhD) we would like to hear from you. Participation includes an anonymous questionnaire lasting approximately 10 minutes, with an option to take part in an interview lasting approximately 60 minutes. If you do not want to take part in the questionnaire but only want to participate in the interview, kindly email me directly.

To know more about the study or to participate in the survey, please click survey link below:
https://surveys.mcgill.ca/ls3/452813?lang=en

To inquire about the study, please contact Philips Ayeni (McGill University) at philips.ayeni@mail.mcgill.ca or the project supervisor Dr. Rebekah Willson at rebekah.willson@mcgill.ca.

I look forward to your responses. Thank you very much.

Sincerely,

Philips Ayeni
PhD Candidate, McGill School of Information Studies
Montreal, QC Canada.

Vous avez été invité à participer à un sondage.

Titre du projet**: Évaluation des pratiques de communication savante en libre accès des chercheurs et des chercheuses en début et en milieu de carrière au Canada.**

Le but de cette étude est d'examiner les pratiques de communication savante en libre accès (OA) des chercheurs et des chercheuses en début et au milieu de leur carrière dans les disciplines des sciences humaines et sociales (SHS) au Canada. Les organismes de financement exigent des chercheurs et chercheuses qu'ils diffusent leurs résultats de recherche dans des revues en libre accès ou dans des dépôts d'archivage thématiques ou institutionnels. Cependant, les recherches précédentes ont montré que l'adoption du libre accès dans les disciplines de SHS est relativement faible. Nous souhaitons identifier les facteurs qui influencent les pratiques de libre accès des chercheurs et des chercheuses, ainsi que ses obstacles et ses facilitateurs.

Si vous êtes un chercheur en début de carrière (dans les cinq ans suivant la date de début de sa première nomination liée à la recherche) ou un chercheur en milieu de carrière (dans les cinq à 15 ans après son doctorat), nous aimerions avoir votre avis. Celle-ci comprend un questionnaire anonyme d'une durée d'environ 10 minutes et la possibilité de participer à un entretien d'une durée d'environ 60 minutes. Si vous ne souhaitez pas participer au questionnaire, mais que vous souhaitez uniquement participer à l'entretien, veuillez communiquer directement avec nous par courriel.

Pour en savoir plus sur l'étude ou pour participer au questionnaire, veuillez cliquer sur le lien suivant: https://surveys.mcgill.ca/ls3/452813?lang=fr

Pour vous renseigner sur l'étude, veuillez communiquer avec Philips Ayeni (Université McGill) au philips.ayeni@mail.mcgill.ca ou avec la superviseure du projet, la Dre Rebekah Willson, au rebekah.willson@mcgill.ca.

J'attends vos réponses avec impatience. Merci beaucoup.

Cordialement,

Philips Ayeni,
Candidat au doctorat, École d'études de l'information de McGill
Montréal, QC Canada.

Appendix G: Factor analysis and composite reliability of study variables

Scale	Items	Factor Loadings of adapted items	Composite Reliability of adapted items
Dependent Variable			
OA Publishing Practices *- 3 Items* ***(N=195)***	OA Publishing Experience	0.803	0.876
	OA Publishing Frequency	0.949	
	OA Publishing Extent	0.960	
Independent Variables			
Benefit factors *Visibility - 3 Items* **(N=223)**	Publishing OA allows the products of research to become readily available	0.813	0.878
	OA publishing increase readership of research outputs	0.802	
	Publishing OA makes my work become wide open to everybody	0.790	
Prestige - 4 items **(N=227)**	Sharing research through open access publishing improves my prestige within my discipline	0.770	0.842
	Researchers in disciplines who share their research through open access publishing have more prestige than those who do not	0.728	
	Sharing research through open access publishing improves others recognition of me	0.640	
	When I share my research through open access publishing, my colleagues respect me	0.642	
Altruism - 6 items **(N=225)**	I enjoy sharing my research with others through open access publishing	0.808	0.937
	I enjoy helping others by sharing my scholarly work through open access publishing	0.876	
	It feels good to help other researchers by publishing in open access	0.832	
	Sharing my knowledge with others through open access publishing gives me pleasure	0.723	
	I willingly help other researchers who have limited access to research by publishing OA	0.754	
	I am always ready to lend a helping hand to other researchers by publishing OA	0.695	
Institution-based trust *Situational normality* - 4 Items **(N=225)**	The steps required to publish in OA publishing platforms are similar to other traditional publishing platforms	0.775	0.845
	The nature of the interactions with the OA publishing platforms is similar to other publishing platforms	0.813	
	The OA publishing platforms operate like other publishing platforms	0.763	

	The peer-review quality of open access publishing outlets is of a similar standard when compared with other traditional publishing platforms	0.607	
Structural assurance **-** 3 Items **(N=226)**	I feel that the legal and/or technological structures in the OA publishing platforms are adequate to protect me from potential problems while using the OA publishing platforms	0.757	0.889
	I feel that encryption and/or other security & privacy policies in OA publishing platforms can make it safe for me to use the OA publishing platforms	0.867	
	The security and copyright protection in OA publishing platforms can provide me with a robust and safe environment to use the system	0.889	
Perceived Quality *Perceived Impact* - 3 Items **(N=227)**	It is important that the OA journal/monograph/proceedings have a high impact factor	0.742	0.826
	It is important that the OA journal/monograph/proceedings enjoy high status within its field of research	0.813	
	It is important that the OA journal/monograph/proceedings are prestigious journal to publish in.	0.760	
Perceived Content Quality - 3 Items **(N=226)**	It is important that the OA journal/proceedings normally publish very good quality articles	0.877	0.921
	It is important that the OA journal/proceedings publish articles of consistent quality	0.869	
	It is important that the OA journal/monograph/proceedings offers very reliable peer review	0.857	
Disciplinary norm **-** 4 Items **(N=227)**	There is a norm of cooperation for OA publishing in my discipline	0.849	0.800
	There is a norm of research collaboration in OA journals/monograph/proceedings in my discipline	0.813	
	There is a norm of valuing OA publishing in my discipline	0.507	
	There is a norm of citing articles published in OA in my discipline	0.535	

Appendix H: Interview guide

Preamble:

Thank you for agreeing to take time out of your busy schedule to speak with me.

This study is focused on exploring the open access scholarly communication practices of researchers in Canada. I am particularly focusing on researchers in humanities, arts and social sciences (HASS) disciplines as there has been a lot fewer studies in HASS, compared to the STEM fields. This interview will focus on your perceptions and engagement with open access scholarly publishing. It will also seek to explore what facilitates or hinders your OA publishing practices, and how you are adapting your publishing practices to current development in the scholarly communication landscape.

Do you have any question before we begin?

Opening questions: Demographics

First of all, I would like to start with some demographic questions to get to know you before we delve into the interview questions. Could you describe your current contract type, discipline of practice and how long you've been working in this role. I am also interested to know whether you are involved in only teaching or research or both?

Main interview questions guide

1. Can you tell me a little bit about your experiences with OA publishing? What kind of OA venues have you published your research outputs?
2. In terms of frequency of publishing OA, which open access routes (e.g., open access journals, OA books/monographs, institutional repositories, subject repositories) do you mostly publish your research outputs and why?
3. Can you tell me about what influence your OA publishing the most and why?
   Probe: The survey results showed that visibility, prestige, and altruism are positively related with researchers' publishing practices. Do you publish OA because of intrinsic motivation or what?
4. Are there institutional policies that determine or influence whether or not you publish OA?

Probe*: *If yes, what are they and how have they influenced your OA publishing practices?
Probe: There's been discussions that some researchers do not trust their institutions when it comes to making their research openly available via Institutional Repositories. What is your take on this?

5. Most funding agencies are now requiring OA publishing of research outputs funded by them. Can you tell me about how funding requirement is influencing or affecting your OA publishing practices?
6. A lot of people are talking about open access, and some disciplines are adopting OA policies and encouraging their researchers to publish in OA. Could you talk about the norms (if any) around OA publishing in your discipline?
7. OA uptake in the HASS disciplines is low when compared with the STEM fields. What would you say are the factors/barriers limiting [your] OA publishing practices?
   ***Probe A*:** For instance, the cost of OA publishing has been reported in literature and in fact in the survey preceding this interview, as the main barrier to OA publishing. I am wondering, in your opinion or experience, what is the main factor limiting the advancement of OA scholarly communication? And how has it limited your OA publishing practices?
8. As **[an ECR or MCR]** would you say your OA publishing practices is influenced or determined by your current career stage and expectations around tenure **[for ECRs]** or promotion **[for MCRs]** requirements? And could you please expatiate and give examples?
9. Researchers perceive the quality of OA publishing outlets differently. Could you tell me a little bit about your perception of quality of OA publishing outlets (e.g., OA journals, OA books, OA proceedings, Institutional Repositories)?
10. I am wondering if your perceptions of OA publishing outlets and traditional outlets differ. If it does, can you tell me about it and whether or not quality of publishing outlets influence your OA publishing practices, either positively or negatively?
11. How would you describe the future of OA scholarly communication in your discipline?
12. If you are to give recommendations for improving OA uptake in the HASS disciplines, what would that be?
13. Is there any thing else you would like to add that we have not already discussed?

Appendix I: Interview recruitment emails

To recruit those who already signed up using the questionnaire optional sign-up form

Dear Prof. «Name»,

Open access (OA) scholarly communication has received attention from funding agencies, advocates, and academic institutions in recent times. However, little is known about OA publishing practices of researchers of HASS disciplines in Canada. This is an invitation to participate in a follow-up interview for a survey you participated in year 2021. We hope to gain an in-depth understanding of factors that hinder or facilitate your OA publishing practices, as well as your perception of OA scholarly communication landscape in Canada. If you are working primarily in academia and are an early career researcher (earned your PhD within the last 6 years) or mid-career researcher (earned your PhD within the last 7-15 years) we would like to hear from you. Participation includes an interview lasting approximately 60 minutes. For more details, the information sheet is attached. To inquire about participation or to volunteer, please contact Philips Ayeni (McGill University) at philips.ayeni@mail.mcgill.ca

Kind regards,

Philips Ayeni

PhD Candidate, School of Information Studies

McGill University.

To recruit new volunteers if participants are not enough

Dear Prof. «Name»,

Open access (OA) scholarly communication has received attention from funding agencies, advocates, and academic institutions in recent times. However, little is known about OA publishing practices of researchers of HASS disciplines in Canada. We are conducting an interview to gain an in-depth understanding of factors that hinder or facilitate your open access publishing practices, as well as your perception of OA scholarly communication landscape in Canada. If you are working primarily in academia and are an early career researcher (earned your PhD within the last 6 years) or mid-career researcher (earned your PhD within the last 7-15 years) we would like to hear from you Participation includes an interview lasting approximately 60 minutes. For more details, the information sheet is attached. To inquire about participation or to volunteer, please contact Philips Ayeni (McGill University) at philips.ayeni@mail.mcgill.ca

Kind regards,

Philips Ayeni

PhD Candidate, School of Information Studies,

McGill University

Appendix J: Mind map (designed with XMind) of data familiarization outcome of phase 1 of thematic analysis

Appendix K: Sample codes developed from participants' quotes

S/N	Codes	Reference (Quotes)	Participant
1.	Limited prestigious OA journals	"*The major journals or the major prestigious journals are for the most part not open access. That's a major barrier, so if I want to be publishing in things that are widely recognized as like high political science, and that's going to be a challenge, some of the law journals don't offer open access models at all"*	Emma
2.	Bridging inequity gaps	"*Everyone should have access to knowledge, and everyone should be able to create knowledge. So, with that I think open access is very much serving my equitable ideals of how knowledge should be shared"*	Farah
3.	Altruism	*"Well, obviously I derive joy. I don't know what the actual value of my work is -- I think it's interesting, but I doubt that it's creating a better world. When I write about comparative immigration policies or the other things I write about, I derive more about joy than altruism because I don't know if it's really helping anybody"*	Paul
4,	Of equal quality	"*Not in Canada. I might, if I was outside of Canada, so I was in the United States or the UK or Australia. Yes, I would consider there is some perception that it may or may not be warranted that the quality in open access journals is not as high. But I do not believe that is true in Canada*"	Robert
5.	Normalize OA culture	"*Normalizing open access within academia. I think that's one of the hurdles that we face is that there are still and again I can only talk about law, right? is this idea of prestige and tradition. And open access is somewhat of an uncomfortable fit there, I think sometimes. So, it's this common normalization and this normalization it becomes normalized when leaders in the field begin to embrace it*.	Greg

Appendix L: Initial codes from phase 2 of thematic analysis

Codes	Files	References
Acceptability issues with OA	1	2
Access to true information	1	1
Accessibility issues with repositories	2	2
Advocating for OA or presentations	1	1
Affordable OA model	1	2
Alternative modes for OA publishing	8	15
Alternative OA models	2	5
Altruism as motivation for OA	3	4
APCs are justified sometimes	1	3
APCs discourage OA publishing	6	13
APCs increase inequity	5	6
APCs increase vicious circle	1	2
APCs models are predatory	4	4
Approval for publishing	1	1
Articulating rationale for OA publishing	1	2
Assessing OA quality	4	6
Author retention strategy for OA	1	2
Authorship privileges in OA publishing	1	1
Aware of OA through publisher	1	2
Backlog issue with institutional repository	1	1
Barriers to OA publishing	1	1
Belief in open access	1	1
Book tradition of some disciplines	1	1
Building diamond OA	1	1
Building OA culture	1	1
Career progress not impacted by funding	1	1
Career stage not influencing OA publishing	2	3
Challenge with interdisciplinary research	2	3
Competing needs and interests	1	3
Complicated OA model	1	1
Concerned about academia[dot]edu	2	2
Concerned about publishing venues	1	1
Confusion about tenure requirements	1	1
Convenience determines preprint deposit	1	1
Copy-editing lapses with OA works	1	1
Cost of APCs not affordable for pre-tenure faculty	5	5
COVID-19 Effects on productivity	2	2
Create toolkits for starting OA	1	3
Create virtual journals	1	1
Credibility of journals determine publishing	2	2
Debate on cost of APCs	2	3
Democratizing knowledge	1	2
Depends on top scholars publishing OA	1	2

Deposited post prints in IRs	2	4
Deposited in institutional repositories	3	7
Depositing in IRs help meets funding requirements	1	1
Difference in OA funding by country	1	1
Difficulty with indigenous works publishing	1	1
Disciplinary norm for OA	4	6
Disciplinary norms affect OA publishing	1	1
Disciplinary support for OA publishing	1	1
Disconnect between OA policy and practice	3	3
Discoverability issues with IRs	1	1
Dislike for-profit academic publishing model	3	3
Dislike pay-to-publish model	6	8
Disappointed with the cost of APCs	2	2
Divided Opinion about OA	1	2
Division on OA norms	2	2
Don't know of the future of OA	1	1
Don't regard journals with embargo as OA	1	1
Double funding of research	2	4
Economics of OA publishing models	1	1
Educating Older faculty on OA	2	3
Education disciplines in Canada moving to OA	1	1
Egalitarianism as motivation	1	1
Emphasize the importance of OA	1	1
Equally prestigious	3	4
Eradicate OA commercial structures	1	1
Except older faculty retires	1	1
Experience as an OA publisher	2	2
Favors traditional journals to OA	2	2
Feeling overwhelmed	1	1
Financial limitation for OA	3	5
Focus more on OA books	1	1
Found IRs useful	1	1
Free access is not lower quality	1	2
Free access to scholarly works	6	8
Frequently publish OA	3	3
Funding agencies OA requirements	4	5
Funding as prerequisite for OA publishing	3	6
Future of OA is bright	1	1
Gain community support for OA	1	2
Gender disparities	1	1
Generational divide on OA publishing	2	3
Green OA will expand	1	1
Growing awareness of OA	1	1
HASS field has been overlooked	1	1
Helps give back to the community	1	1
Historical legacy determines quality	3	4
Hybrid OA disadvantage Junior scholars	1	2
Hybrid OA increases inequity	1	1
Hybrid OA venues	3	4

Identifying predatory journals	3	5
Ideological - free access	5	5
Impact factor discourages OA publishing	1	1
Impact factors and publishing	1	3
Impetus for knowledge creation and consumption	1	1
Importance of HASS disciplines	1	4
Improve accessibility of language	2	3
Improve prestige of OA outlets	3	3
Improving funding requirements for OA	1	1
Improving prestige of OA venues	1	2
Improving public access	4	4
Improving social justice	2	2
In Compliance to funding requirements	1	2
Incentives structures	2	4
Incentivize OA efforts	1	4
Incentivize service work	1	1
Include OA in tenure requirements	1	1
Including APCs in grant applications	4	8
Inconsistency with institutional repository	1	1
Increase accessibility of OA	3	6
Increase institutional support for OA	1	2
Increase OA recommendations by prestigious authors	1	1
Increase resource persons for OA	1	2
Increased funding for OA publishing	2	2
Increased positive attitude toward OA	1	3
Increasing readership	3	3
Inequality based on country	1	1
Inequities in academic publishing models	1	1
Inequity based on discipline	1	1
Inequity in academic scholarship	1	1
Inherent bias about OA	1	1
Institutional agreements for OA publishing	1	1
Institutional repositories for fulfilling OA mandates	2	3
Instrumentalism as a motivation	1	1
Intend to publish OA after tenure	2	2
Internet gave birth to OA	1	1
IRs are not real publishing	1	1
Issues with visa	1	1
It increases work loads	1	1
Journal embargoes impacting OA	4	8
Judge quality of works not prestige	1	1
Justifying OA publishing decision	1	1
Knowledge mobilization experience	1	1
Language as a barrier to OA publishing	1	2
Leads to Appropriation	1	3
Leaning towards OA	1	1
Limit embargo impacts	1	1
Limitation of OA book publishing	9	16
Limitation with preprints	1	1

Limited authenticity of institutional repository	1	2
Limited call for OA publishing	1	1
Limited discussion on OA	1	3
Limited experience with IRs	1	1
Limited funding for OA publishing	4	7
Limited Funding in HASS disciplines	2	4
Limited government support	1	4
Limited Infrastructure	1	2
Limited OA venues	3	5
Limited prestigious OA journals	10	15
Limited push for OA	1	1
Limited quality OA venues	2	3
Limited resources affecting OA publishing process	1	2
Limited technical standards in OA outlets	1	1
Logistics of setting up OA journals	1	2
Lower APCs encourages OA publishing	2	2
Major researchers not publishing OA	1	1
Make a case for value of OA	1	1
Make OA outlets easy to use	1	1
Making a case for OA publishing	1	1
Mismatch with grants requirements	2	2
Mixed future for OA	1	1
More OA effort by association journals	1	2
More support for OERs	1	1
Move toward OA by default	1	1
Move towards OA	2	2
Need for accountability	1	1
Need for decolonizing knowledge	1	5
Need for more awareness and training	2	2
Need for more conversation on OA	2	4
need more support and advocacy for OA	5	7
Need to change academic scholarship model	1	1
Need to fund disciplinary publishers	1	1
Need to increase accessibility and reach	9	14
Need to increase reach of information	1	1
Need to increase standards for OA	1	1
Need to learn about OA	1	1
Need to prioritize OA	1	1
Need to publish in prestigious venues	1	4
Never deposited in IRs	2	3
Never published in OA journals	4	5
No expectation for OA publishing	3	5
No institutional support for OA	3	4
No issues with institutional repositories	1	1
No norms for OA publishing	2	2
No norms for publishing	4	4
No specific funding requirement for OA publishing	2	2
No specific institutional policies for OA publishing	9	9
Normalize OA publishing	2	3

Norms - Online first increasing OA	2	2
Not a lot of norms for OA in linguistics	1	2
Not all OA venues are predatory	1	1
Not concerned about OA demerits	1	1
Not open access	1	1
OA and publication speed	1	2
OA books are not as prestigious	2	2
OA books lacking in design	1	1
OA bridges inequity gaps	2	3
OA coming slowly	1	1
OA conference proceedings not common	2	3
OA conflicts with other tasks	1	1
OA doesn't influence publishing decision	1	1
OA enables public good and social justice	2	2
OA helps influence policy	2	2
OA increases citation	1	3
OA is difficult to navigate	1	1
OA is fantastic	1	1
OA is overlooked & neglected	1	1
OA might increase impact factor	1	1
OA not really important	1	2
OA publications quality is higher than traditional	1	3
OA publishing through libraries	1	1
OA uptake is increasing	1	1
OA will be more accessible	1	1
OA will become prevalent	4	5
OA will grow	2	2
Objections to APCs	4	6
Of equal quality	6	7
Old tradition of law discipline	3	3
Ongoing talk for OA publishing	1	1
Open access is not free	2	3
Open access press ensure OA publishing	1	1
Optional APC for journals	1	1
Parental responsibility and OA publishing	2	5
Partial engagement with OA	1	3
Partnership with libraries	2	2
Patron model for OA books	1	1
Pay-for-play scheme is terrible	1	1
Pay-to-submit model	1	3
Peer review determines quality	3	7
Perceive OA as lower quality	1	1
Political values for knowledge dissemination	1	1
Poor findability of IRs limits OA	1	1
Poor perception of prestige	1	1
Pragmatic - increase citation	2	3
Predatory journals lower quality	1	3

Predatory practices of some journals	5	8
Prefer no APCs outlets	2	3
Prefers diamond OA	3	5
Prefers to publish OA	1	2
Preprints for publishing	1	1
Preprints meets OA publishing requirements	2	2
Preprints publishing as a norm	2	3
Pressure to publish in a variety of venues	2	4
Pressure to publish OA	2	2
Prevents illegal access	1	2
Privileged positionality	1	1
Problems with sharing data	3	7
Promotion requirements limit OA publishing	2	3
Provide viable model for OA	1	1
Publish in subject repositories	1	3
Publish or perish mentality	1	1
Published in funded OA journals	2	2
Published in OA journals	6	6
Published OA books	3	4
Publishing not impact by funding	3	4
Push for OA by associations	2	2
Quality depends on the journal	4	8
Quality varies	3	3
Quasi open access	1	1
Reach wider audiences	1	1
Reciprocity as a motivation	1	1
Reducing inequity of access	2	6
Redundancy as barrier to OA	1	1
Regional differences in OA support	1	1
Reliance on privacy	1	2
Remove embargoes for IRs	1	1
Reputational benefits	2	2
Research should be available	2	2
Resistance from publishers to move to OA	2	3
Rethink academic scholarship	1	2
Rise of predatory OA journals	5	8
Safe to deposit post prints	1	3
Seldom use institutional repositories	2	3
Sense of responsibility as a motivation	1	1
Service requirements for faculty	1	1
Setting precedent for OA publishing	2	3

Sharing indigenous knowledge as open source	1	1
Sometimes publish in OA Journals	2	3
SSHRC requirements for OA	2	3
Subscription model for OA	2	2
Support sustainable OA models	2	2
Sustainability issues with OA outlets	2	3
Take journals back from big 5s	1	1
Tenure and publishing freedom	2	3
Tenure requirements limits OA publishing	10	19
Time factor limitations	3	4
Top scholars don't publish OA	1	1
Trust and institutional repositories	1	3
Unaware of institutional repository	1	1
Unaware of OA publishing agreements	1	1
Unaware of tenure requirements for OA	2	3
Unaware of OA publishing	1	1
Uncertainty about OA venues	1	2
Unclear about OA publishing requirements	1	1
Understanding OA policies	1	1
Unsustainability of OA model	2	2
Varying assessment metrics	1	4
Viable economic model for OA book publishing	1	4
Will require money to publish OA	1	1
Willingness to review for OA venues	1	1

Appendix M: Initial themes generated from phase 3 of thematic analysis

Themes and Codes	Description	Files	References
ALTERNATIVE MODES OF SCHOLARLY DISSEMINATION	This theme brings together codes relating to alternative modes of disseminating scholarly outputs, outside of established modes such as journals, books etc.	8	15
Advocating for OA or Presentations		1	1
Concerned about academia [dot] edu		2	2
ARTICLE PROCESSING CHARGES AND OA	This theme brings together codes relating to article processing charges (APCs) and its impact on OA publishing practices of researchers.	15	57
APCs discourage OA publishing		6	13
APCs increase inequity		8	12
APCs increase vicious circle		3	4
APCs models are predatory		4	4
Disappointed with the cost of APCs		2	2
Including APCs in grant applications		4	8
Justifications for APCs		1	3
Lower APCs encourages OA publishing		2	2
Objections to APCs		4	6
Preference for no APCs outlets		2	3
BARRIERS TO OA	This theme groups together barriers limiting the practices and uptake of open access among the participants.	19	171
Challenge with interdisciplinarity		2	3
Conflicts with other tasks		5	10
Copy-editing lapses with OA outlets		1	1
COVID-19 effects on productivity		2	2
Difficulty with indigenous works publishing		1	1
Financial limitation for OA publishing		4	10
Impact factor discourages OA publishing		2	4
Inherent bias about OA		1	1
Issue of sustainability		4	6

Language as a barrier to OA publishing		1	2
Leads to appropriation		1	3
Limitation with OA book publishing		9	16
Limited call and discussion on OA publishing		3	7
Limited funding for OA publishing		4	11
Limited funding in HASS disciplines		3	5
Limited infrastructure		1	2
Limited prestigious OA Journals		13	29
Limited resources affecting OA publishing process		1	2
Limited technical standards in OA outlets		2	3
Major researchers not publishing OA		2	2
Mismatch with grants requirements		2	2
OA books are not as prestigious		2	2
OA books lacking in Design		1	1
OA is difficult to navigate		1	1
OA is overlooked & neglected		1	1
OA not accepted yet in psychology		1	2
OA not really important		1	2
Old tradition of some disciplines		3	4
Predatory journals and practices impact on quality		5	11
Problems with sharing data		3	7
Reliance on piracy		1	2
Resistance from publishers to move to OA		2	3
Rise of predatory OA journals		5	8
Unclear about OA publishing requirements		1	1
Varying assessment metrics		1	4

BUILDING INCENTIVES FOR OA PUBLISHING	This code brings together all the codes related to incentives around OA publishing	4	9
Incentives structures		2	4
Incentivize OA efforts		1	4
Incentivize service work		1	1
DISCUSSIONS ON OA MODELS	This initial theme contains codes that pertain to open access models and publishing or subscription models.	10	37
Alternative OA models		2	7
Complicated OA model		1	1
Dislike for-profit academic publishing model		3	3
Dislike pay-to-publish model		7	9
Economics of OA publishing models		1	1
Open access is not free		2	3
Patron model for OA books		1	1
Pay-to-submit model		1	3
Prefers diamond OA		3	6
Provide viable model for OA		1	1
Subscription model for OA		2	2
DISCUSSIONS ON PREPRINTS, POSTPRINTS AND INSTITUTIONAL REPOSITORIES	This theme brings together codes relating to institutional repositories use, barriers, and perception of trust.	13	41
Accessibility issues with repositories		2	2
Backlog issue with institutional repository		1	1
Convenience determines preprint deposit		1	1
Deposited postprints in IRs		2	4
Depositing in IRs help meets funding requirements		1	1
Discoverability issues with IRs		1	1
Found IRs useful		1	1
Inconsistency with institutional repository		1	1
Institutional repositories for fulfilling OA mandates		2	3
IRs are not real publishing		1	1
Journal embargoes impacting OA		4	8

Limitation with preprints		3	4
No issues with institutional repositories		1	1
Poor findability of IRs limits OA		1	1
Preprints meets OA publishing requirements		3	3
Redundancy as barrier in IRs		1	1
Safe to deposit post prints		1	3
Trust and institutional repositories		1	3
Unaware of institutional repository		1	1
FLOATING IDEAS	This includes other codes not related to major themes and not directly related to the research questions.	4	7
Importance of HASS disciplines		1	4
Internet gave birth to OA		1	1
Issues with visa	Some participants lamented how visa issues impacted on their publishing practices	1	1
Willingness to review for OA venues		1	1
FUTURE OF OPEN ACCESS	This initial theme brings together codes related to the future and trends of OA publishing as projected by the participants	11	17
Depends on top scholars publishing OA		1	2
Don't know of the future of OA		1	1
Except older faculty retires		1	1
Future of OA is bright		1	1
Green OA will expand		3	3
Mixed future for OA		1	1
Move toward OA by default		1	1
OA will become prevalent		5	7
INEQUITIES IN OA PUBLISHING	This theme brings together all the codes relating to equity issues with publishing open access. This includes codes on gender, cost, career stage, disciplines, and resources availability.	9	20
Gender disparities		3	6
Hybrid OA increases inequity		1	2
Inequality based on country		3	4
Inequities in academic publishing models		2	2

Inequity based on discipline		1	1
Inequity in academic scholarship		1	1
OA bridges inequity gaps		2	3
Sharing Indigenous knowledge as open source		1	1
INSTITUTIONAL POLICIES FOR OA PUBLISHING	This initial theme brings together all the codes related to institutional policies, requirements, barriers, and supports.	17	37
Disconnect between OA policy and practice		3	3
Funding agencies OA requirements		6	8
Institutional agreements for OA publishing		1	1
No expectation for OA publishing		5	7
No institutional support for OA		3	4
No specific institutional policies for OA publishing		9	9
Publishing not impacted by funding		3	4
Unaware of OA publishing agreements		1	1
MOTIVATIONS FOR OA PUBLISHING	This initial theme on motivation contains codes related to motivations, importance and factors influencing open access publishing practices or decisions by the participants.	18	74
Altruism as motivation for OA		3	4
Democratizing knowledge		2	3
Egalitarianism as motivation		1	1
Free access to scholarly works		7	9
Ideological - free access		10	12
Impetus for knowledge creation and consumption		2	2
In compliance to funding requirements		1	2
Increasing readership		5	5
Instrumentalism as a motivation		1	1
OA and publication speed		1	2
OA enables public good & social justice		3	4
OA helps influence policy		2	2

Pragmatic - increase citation		3	6
Prefers to publish OA		1	2
Prevents illegal access		1	2
Privileged positionality		1	1
Reciprocity as a motivation		2	2
Reducing inequity of access		2	6
Reputational benefits		3	3
Sense of responsibility as a motivation		2	2
Setting precedent for OA publishing		2	3
NORMS FOR OA PUBLISHING	This initial theme brings together all the codes that relate to norms for OA publishing, either positive, negative, or mixed.	16	42
Disciplinary norms affect OA publishing		7	9
Disciplinary support for OA publishing		1	1
Divided opinion about OA		3	4
Generational divide on OA publishing		2	3
Growing awareness of OA		2	2
Increased positive attitude toward OA		1	3
Move towards OA		4	4
No norms for OA publishing		6	7
OA conference proceedings not common		2	3
Online first increasing OA		2	2
Preprints publishing as a norm		2	3
Pressure to publish OA		1	1
OA PUBLISHING EXPERIENCES OF RESEARCHERS	This theme includes the publishing experiences of participants including OA journals, OA monographs, OA proceedings, and institutional repositories	17	50
Awareness of OA through publisher		1	2
Deposited in Subject repositories		1	3
Deposited in Institutional Repositories		3	7
Experience as an OA publisher		2	2
Frequently publish OA		3	3

Never deposited in IRs		2	3
Never published in OA journals		4	5
OA press ensure OA publishing		1	1
OA publishing through libraries		1	1
Partial engagement with OA		1	3
Published in OA journals		6	8
Published OA books		3	4
Quasi open access		1	1
Seldom use institutional repositories		2	3
Sometimes publish in OA journals		2	3
Understanding OA policies		1	1
PROBLEMS WITH HYBRID OA JOURNALS	This theme contains codes relating to problems and issues with hybrid OA journals as discussed by the participants.	7	13
Authorship privileges in OA publishing		1	1
Don't regard journals with embargo as OA		1	1
Double funding of research		2	4
Hybrid OA venues		3	4
Not open access		1	1
Optional APCs for journals		1	1
Will require money to publish OA		1	1
QUALITY ISSUES WITH OA OUTLETS	This theme brings together all the codes that pertain to quality issues about OA outlets, including OA journals, OA books, OA proceedings, and institutional repositories.	19	58
Assessing OA quality		4	7
Credibility of journals determine publishing		2	2
Equally prestigious		4	6
Favours traditional journals to OA		4	4
Historical legacy determines quality		3	4
Identifying predatory journals		4	6
Judge quality of works not prestige		1	1

OA Publications quality is higher than traditional		1	3
Of equal quality		6	7
Peer review determines quality		3	7
Quality depends on the journal		7	11
RECOMMENDATIONS FOR IMPROVING OA UPTAKE	This theme brings together all the recommendations for improving open access uptake in the HASS disciplines as suggested by the participants.	20	97
Build OA culture		5	8
Create toolkits for starting OA		1	3
Decolonize knowledge		1	5
Improve accessibility of OA outlets		12	25
Improve institutional and community support for OA		7	10
Improve prestige of OA outlets		4	5
Include OA in tenure requirements		1	1
Increase support and advocacy for OA		11	22
Prioritize OA publishing		1	1
Provide viable economic model for OA books		1	5
Remove embargoes for IRs		2	2
Rethink academic scholarship		1	2
Support OA effort of association journals		4	6
Support sustainable OA models		2	2
TENURE AND PROMOTION IMPACT ON OA	This theme brings together codes relating to tenure, promotion, and career stage impact on open access publishing of the participants.	16	43
Articulating rationale for OA publishing		2	3
Career progress not impacted by funding		1	1
Career stage not influencing OA publishing		2	3
Pressure to publish in a variety of venues		2	4

Promotion requirements limit OA publishing		4	5
Tenure and Publishing Freedom		2	3
Tenure requirements limits OA publishing		10	21
Unaware of tenure requirements for OA		2	3

Appendix N: Developed and reviewed themes from phase 4 of thematic analysis

Themes, Sub-Themes & Codes	Description	Files	References
BARRIERS TO RESEARCHERS' OA PUBLISHING	This theme comprise factors limiting the uptake of OA in the HASS disciplines as well as researchers' perceptions of factors limiting their engagements in OA publishing,	20	359
Barriers caused by inequities	This sub-theme brings together all the codes relating to equity issues with publishing open access. This includes codes on gender, cost, career stage, disciplines, and resources availability.	10	18
Difficulties with Indigenous works		2	2
Gender disparities		3	6
Hybrid OA increases inequity		1	2
Inequality based on country		3	4
Inequities in academic publishing models		2	2
Inequity based on discipline		1	1
Privileged positionality		1	1
Cost and financial limitations	This sub-theme brings together all the codes relating to cost and financial limitations to OA publishing	16	76
APCs discourage OA publishing		6	13
APCs increase inequity		8	12
APCs increase vicious circle		3	4
APCs models are predatory		4	4
Disappointed with the cost of APCs		2	2
Financial limitation for OA publishing		4	10
Limited funding for OA publishing		4	11
Limited funding in HASS disciplines		3	5
Limited resources affecting OA publishing process		1	2
Objections to APCs		4	6
Open access is not free		2	3
Preference for no APCs outlets		2	3

Will require money to publish OA		1	1
Disciplinary norms	This sub-theme focuses on issues with disciplinary limitations and norms	14	28
Challenge with interdisciplinarity		2	3
Disciplinary norms affect OA publishing		7	9
Limitation with OA book publishing		9	16
Impact factors and prestige	This sub-theme consists of codes relating to limitations caused by impact factors, assessment metrics, and prestige	14	41
Impact factor discourages OA publishing		2	4
Limited prestigious OA journals		13	29
Major researchers not publishing OA		2	2
OA books are not as prestigious		2	2
Varying assessment metrics		1	4
Institutional barriers	This sub-theme brings together all the codes related to institutional policies, requirements, barriers, and supports.	13	26
Institutional agreements for OA publishing		1	1
No expectation for OA publishing		5	7
No institutional support for OA		3	4
No specific institutional policies for OA publishing		9	9
Publishing not impacted by funding		3	4
Unaware of OA publishing agreements		1	1
Other barriers	This sub-theme groups together other barriers limiting the practices and uptake of open access among the participants which do not fit within the identified barriers	8	25
Conflicts with other tasks		5	10
COVID-19 effects on productivity		2	2
Inherent bias about OA		1	1
Limited call and discussion on OA publishing		3	7

OA is overlooked & neglected		1	1
OA not really important		1	2
Reliance on piracy		1	2
Policy barriers		12	27
Disconnect between OA policy and practice		3	3
Including APCs in grant applications		4	8
Justifications for APCs		1	3
Mismatch with grants requirements		2	2
OA not accepted yet in Psychology		1	2
Old tradition of some disciplines		3	4
Resistance from publishers to move to OA		2	3
Unaware of institutional repository		1	1
Unclear about OA publishing requirements		1	1
Problematic publishing models	This sub-theme contains codes relating to problems and issues with hybrid OA journals as discussed by the participants.	6	12
Complicated OA model		1	1
Don't regard journals with embargo as OA		1	1
Double funding of research		2	4
Limitation through hybrid OA models		4	5
Optional APC for journals		1	1
Quality perceptions and expectations		8	22
Leads to appropriation		1	3
Predatory journals and practices impact on quality		5	11
Rise of predatory OA journals		5	8
Technical barriers		12	42
Accessibility issues with repositories		2	2
Backlog issue with institutional repository		1	1
Copy-editing lapses with OA outlets		1	1

Discoverability issues with IRs		1	1
Inconsistency with institutional repository		1	1
Issue of sustainability		4	6
Journal embargoes impacting OA		4	8
Language as a barrier to OA publishing		1	2
Limitation with preprints		3	4
Limited infrastructure		1	2
Limited technical standards in OA outlets		2	3
OA books lacking in design		1	1
OA is difficult to navigate		1	1
Poor findability of IRs		1	1
Problems with sharing data		3	7
Redundancy as barrier in IRs		1	1
Tenure promotion and requirements	This sub-theme brings together codes relating to tenure, promotion, and career stage impact on open access publishing of the participants.	16	42
Articulating rationale for OA publishing		2	3
Career stage not influencing OA publishing		2	3
Pressure to publish in a variety of venues		2	4
Promotion requirements limit OA publishing		4	5
Tenure requirements limits OA publishing		11	24
Unaware of tenure requirements for OA		2	3
FACTORS INFLUENCING RESEARCHERS' OA PUBLISHING	This theme consists of motivations and factors contributing positively to researchers' OA publishing practices.	19	96
Benefit factors		14	29
Bridging inequity gaps		4	9
Enabling public good and social justice		5	6
Improving reputation		3	3
Increasing readership		5	7
Influencing policy		2	2
Publication speed		1	2

Ideological - free access to scholarly works		11	24
Ensuring free access to scholarly outputs		11	21
Need to democratize knowledge		2	3
Incentives structures		2	4
Funding agencies OA requirements		6	10
Lower APCs encourages OA publishing		2	2
Motivating factors	This sub-theme includes codes relating to motivations, importance and factors influencing open access publishing practices or decisions by the participants.	9	14
Altruism - derive joy by publishing OA		3	4
Egalitarianism		1	1
Instrumentalism		1	1
Pragmatic - increase citation		3	6
Reciprocity		2	2
Personal factors		12	25
Dislike pay-to-publish model		9	12
Preference for OA publishing		4	8
Preventing illegal access		1	2
Setting precedent for OA publishing		2	3
FUTURE OF OPEN ACCESS	This theme brings together codes related to the future and trends of OA publishing as projected by the participants	11	17
Depends on top scholars publishing OA		1	2
Don't know of the future of OA		1	1
Except older faculty retires		1	1
Future of OA is bright		1	1
Green OA will expand		3	3
Mixed future for OA		1	1
Move toward OA by default		1	1
OA will become prevalent		5	7
NORMS FOR OA PUBLISHING IN THE HASS DISCIPLINES	This theme brings together all the codes that relate to norms for OA publishing, either positive, negative, or mixed.	15	33
Disciplinary support for OA publishing		1	1
Divided opinion about OA		3	4

Generational divide on OA publishing		2	3
Growing awareness of OA		2	2
Increased positive attitude toward OA		1	3
Move towards OA		4	4
No norms for OA publishing		6	7
OA conference proceedings not common		2	3
Online first increasing OA		2	2
Preprints publishing as a norm		2	3
Pressure to publish OA		1	1
OA PUBLISHING EXPERIENCES OF RESEARCHERS	This theme includes the publishing experiences of participants including OA journals, OA monographs, OA Proceedings and Institutional Repositories	18	64
Deposited in subject repositories		1	3
Deposited in institutional repositories		3	7
Experience as an OA publisher		2	2
Frequently publish OA		3	3
Never deposited in IRs		2	3
Never published in OA journals		4	5
OA press ensure OA publishing		1	1
OA publishing through libraries		1	1
Partial engagement with OA		1	3
Published in OA journals		6	8
Published OA books		3	4
Quasi open access		1	1
Seldom use institutional repositories		2	3
Sometimes publish in OA journals		2	3
Understanding OA policies		1	1
Using alternative modes of scholarly communication		9	16
PERCEPTIONS AND ENGAGEMENT WITH INSTITUTIONAL REPOSITORIES	This theme brings together codes relating to institutional repositories use, barriers, and perception of trust.	9	21
Convenience determines preprint deposit		1	1
Deposited post prints in IRs		2	4
Depositing in IRs help meets funding requirements		1	1

Found IRs useful		1	1
Institutional Repositories for fulfilling OA mandates		2	3
IRs are not real publishing		1	1
No issues with institutional repositories		1	1
Preprints meet OA publishing requirements		3	3
Safe to deposit post prints		1	3
Trust and institutional repositories		1	3
PERCEPTONS AND QUALITY ASSESSMENT OF OA OUTLETS	This theme brings together all the codes that pertain to quality issues about OA outlets, including OA journals, OA books, OA proceedings, and institutional repositories.	19	58
Assessing OA quality		4	7
Credibility of journals determine publishing		2	2
Equally prestigious		4	6
Favours traditional journals to OA		4	4
Historical legacy determines quality		3	4
Identifying predatory journals		4	6
Judge quality of works not prestige		1	1
OA publications quality is higher than traditional		1	3
Of equal quality		6	7
Peer review determines quality		3	7
Quality depends on the journal		7	11
RECOMMENDATIONS FOR IMPROVING OA UPTAKE	This theme brings together all the recommendations for improving open access uptake in the HASS disciplines as suggested by the participants.	20	117
Build OA culture		5	8
Create toolkits for starting OA		1	3
Decolonize knowledge		1	5
Fund alternative and viable OA models	This sub-theme contains codes that pertain to open access models and publishing or subscription models.	5	15
Alternative OA models		2	7
Economics of OA publishing models		1	1
Patron model for OA books		1	1
Pay-to-submit model		1	3
Provide viable model for OA		1	1

Subscription model for OA		2	2
Improve accessibility of OA outlets		12	25
Improve institutional and community support for OA		7	10
Improve prestige of OA outlets		4	5
Incentivize OA efforts		1	4
Incentivize service work		1	1
Include OA in tenure requirements		1	1
Increase support and advocacy for OA		11	22
Prioritize OA publishing		1	1
Provide viable economic model for OA books		1	5
Remove embargoes for IRs		2	2
Rethink academic scholarship		1	2
Support OA effort of association journals		4	6
Support sustainable OA models		2	2

Appendix O: Defined, refined, and named themes from phase 5 of thematic analysis

Themes, Sub-Themes & Codes	Description	Files	References
1. Barriers to Researchers' OA Publishing	This theme consists of factors limiting the uptake of OA in the HASS disciplines as well as researchers' perceptions of factors limiting their engagements in OA publishing.	20	361
Barriers caused by inequities	This sub-theme brings together all the codes relating to equity issues with publishing open access. This includes codes on gender, cost, career stage, disciplines, and resources availability.	10	18
Difficulties with Indigenous works		2	2
Gender disparities		3	6
Hybrid OA increases inequity		1	2
Inequality based on country		3	4
Inequities in academic publishing models		2	2
Inequity based on discipline		1	1
Privileged positionality		1	1
Cost and financial limitations		16	75
APCs discourage OA publishing		6	13
APCs increase inequity		8	12
APCs increase vicious circle		3	4
APCs models are predatory		4	4
Disappointed with the cost of APCs		2	2
Limited funding for OA publishing		8	22
Limited Funding in HASS disciplines		3	5
Objections to APCs		4	6
Open access is not free		2	3
Preference for no APCs outlets		2	3
Will require money to publish OA		1	1
Disciplinary norms		14	28
Challenge with interdisciplinarity		2	3
Disciplinary norms affect OA publishing		7	9
Limitation with OA book publishing		9	16
Impact factors and prestige		14	41

Impact factor discourages OA publishing		2	4
Limited prestigious OA Journals		13	29
Major researchers not publishing OA		2	2
OA books are not as prestigious		2	2
Varying assessment metrics		1	4
Other barriers	This sub-theme groups together barriers limiting the practices and uptake of open access among the participants.	9	26
Conflicts with other tasks		5	10
Convenience determines preprint deposit		1	1
COVID-19 effects on productivity		2	2
Inherent bias about OA		1	1
Limited call and discussion on OA publishing		3	7
OA is overlooked & neglected		1	1
OA not really important		1	2
Reliance on Piracy		1	2
Policy and institutional barriers		16	54
Disconnect between OA policy and practice		3	3
Including APCs in grant applications		4	8
Institutional agreements for OA publishing		1	1
Institutional trust and bias		1	1
Justifications for APCs		1	3
Mismatch with grants requirements		2	2
No expectation for OA publishing		5	7
No institutional support for OA		3	4
No specific institutional policies for OA publishing		9	9
OA not accepted yet in Psychology		1	2
Old tradition of some disciplines		3	4
Publishing not impacted by funding		3	4
Resistance from publishers to move to OA		2	3
Unaware of Institutional repository		1	1

Unaware of OA publishing agreements		1	1
Unclear about OA publishing requirements		1	1
Problematic publishing models	This sub-theme contains codes relating to problems and issues with hybrid OA journals as discussed by the participants.	7	13
Complicated OA model		1	1
Don't regard journals with embargo as OA		1	1
Double funding of research		2	4
Economics of OA publishing models		1	1
Limitation through Hybrid OA models		4	5
Optional APC for journals		1	1
Quality perceptions and expectations		8	22
Leads to appropriation		1	3
Predatory Journals and practices impact on quality		5	11
Rise of predatory OA journals		5	8
Technical barriers		12	42
Accessibility issues with repositories		2	2
Backlog issue with Institutional Repository		1	1
Copy-editing lapses with OA outlets		1	1
Discoverability issues with IRs		1	1
Inconsistency with Institutional Repository		1	1
Issue of sustainability		4	6
Journal embargoes impacting OA		4	8
Language as a barrier to OA publishing		1	2
Limitation with preprints		3	4
Limited Infrastructure		1	2
Limited technical standards in OA outlets		2	3
OA Books lacking in Design		1	1
OA is difficult to navigate		1	1
Poor findability of IRs		1	1
Problems with sharing data		3	7
Redundancy as barrier in IRs		1	1
Tenure promotion and requirements	This sub-theme brings together codes relating to the impact of tenure, promotion, and career	16	42

	stage on open access publishing of the participants.		
Articulating rationale for OA publishing		2	3
Career Stage not influencing OA publishing		2	3
Pressure to publish in a variety of venues		2	4
Promotion requirements limit OA publishing		4	5
Tenure requirements limits OA publishing		11	24
Unaware of tenure requirements for OA		2	3
2. Factors Influencing Researchers' OA Publishing	This theme consists of motivations and factors contributing positively to researchers' OA publishing practices.	19	96
Benefit factors		14	29
Bridging inequity gaps		4	9
Enabling public good and social justice		5	6
Improving reputation		3	3
Increasing readership		5	7
Influencing policy		2	2
Publication speed		1	2
Ideological - free access to scholarly works		11	24
Ensuring free access to scholarly outputs		11	21
Need to democratize knowledge		2	3
Incentives structures		2	4
Funding agencies OA requirements		6	10
Lower APCs encourages OA publishing		2	2
Motivating factors	The sub-theme contains codes related to motivations, importance and factors influencing open access publishing practices or decisions by the participants.	9	14
Altruism - derive joy by publishing OA		3	4
Egalitarianism		1	1
Instrumentalism		1	1
Pragmatic - increase citation		3	6
Reciprocity		2	2
Personal factors		12	25
Dislike pay-to-publish model		9	12
Preference for OA publishing		4	8

Preventing illegal access		1	2
Setting precedent for OA publishing		2	3
3. Norms for OA Publishing	This theme brings together all the codes that relate to the norms for OA publishing, either positive, negative, or mixed.	15	32
Disciplinary support for OA publishing		1	1
Divided opinion about OA		3	4
Generational divide on OA publishing		2	3
Growing awareness of OA		2	2
Increased positive attitude toward OA		1	3
Move towards OA		3	3
No norms for OA publishing		6	7
OA Conference proceedings not common		2	3
Online first increasing OA		2	2
Preprints publishing as a norm		2	3
Pressure to publish OA		1	1
4. OA Publishing Engagements of Researchers	This theme includes the publishing experiences of participants including OA journals, OA monographs, OA proceedings, and institutional repositories	18	67
Deposited in subject repositories		1	3
Deposited in Institutional Repositories		4	11
Employed alternative modes of scholarly communication		9	16
Experience as an OA publisher		2	2
Frequently publish OA		3	3
Never deposited in IRs		2	3
Never published in OA journals		4	5
OA press ensure OA publishing		1	1
OA publishing through libraries		1	1
Partial engagement with OA		1	3
Published in OA journals		6	8
Published OA books		3	4
Seldom use institutional repositories		2	3
Sometimes publish in OA journals		2	3
Understanding OA policies		1	1
5. Quality Perceptions and Assessment of OA Outlets	This theme brings together all the codes that pertain to quality issues about OA outlets, including OA Journals, OA books, OA	19	72

	proceedings and institutional repositories.		
Assessing quality of OA outlets		13	34
Credibility of journals determine publishing		2	2
Historical legacy determines quality		3	4
Impact factor and reputation		3	6
Judge quality of works not prestige		1	1
Peer review determines quality		5	10
Quality depends on the journal		7	11
Identifying predatory practices		4	6
Perceptions of quality OA vs. Traditional		15	32
Equally prestigious		4	6
Favours traditional journals to OA		4	4
Found IRs useful		3	5
OA publications quality is higher than traditional		1	3
Of equal quality		6	7
Preprints meet OA publishing requirements		6	7
6. Recommendations for Improving OA Uptake	This theme brings together all the recommendations for improving open access uptake in the HASS disciplines as suggested by the participants.	20	116
Build OA culture		5	8
Create toolkits for starting OA		1	3
Decolonize knowledge		1	5
Fund alternative and viable OA models	This sub-theme contains codes that pertain to open access models and publishing or subscription models.	4	14
Alternative OA models		3	8
Patron model for OA books		1	1
Pay-to-submit model		1	3
Subscription model for OA		2	2
Improve accessibility of OA outlets		12	25
Improve institutional and community support for OA		7	10
Improve prestige of OA outlets		4	5
Incentivize OA efforts		2	5
Include OA in tenure requirements		1	1
Increase support and advocacy for OA		11	22
Prioritize OA publishing		1	1

Provide viable economic model for OA books		1	5
Remove embargoes for IRs		2	2
Rethink academic scholarship		1	2
Support OA effort of association journals		4	6
Support sustainable OA models		2	2

Appendix P: Analytical themes and sub-themes from phase 6 of thematic analysis

Main themes and sub-themes	Description	Files	References
1. Disciplinary Norms and Practices Drive OA Publishing Practices	This analytical theme includes the norms and practices from participants disciplines which drive their OA publishing practices.	18	64
1.1 Disciplinary support and move towards OA		6	11
1.2 Increasing use of subject and institutional repositories		11	27
1.3 Exploring alternative means of scholarly communication		11	19
2. Institutional and Systemic Barriers Limited Researchers' OA Publishing	This analytical theme consists of factors limiting the uptake of OA in the HASS disciplines as well as researchers' perceptions of factors limiting their engagements in OA publishing,	24	271
2.1 Limited funding impeded researchers' OA publishing		19	67
2.2 Tenure and promotion requirements hampered OA publishing of ECRs	This sub-theme brings together codes relating to tenure, promotion, and career stage and their impact on open access publishing of the participants.	17	59
2.3 Prestige and impact factors as systemic limitation to OA publishing		14	41
2.4 Technical issues with institutional repositories		10	26
2.5 Conflicting and unsupportive OA policies limited researchers' OA publishing		16	57
2.6 Inequities in OA publishing	This sub-theme brings together all the codes relating to equity issues with publishing open access.	10	21
2.6.1 Inequities caused by cost of APCs		6	9
2.6.2 Inequity due to privileged situation		5	6
2.6.3 Inequity caused by gender disparities		3	6
3. Researchers' Perceptions Influenced their OA Publishing Practices	This analytical theme includes the perceptions of OA outlets, both negative and positive, which influenced participants' OA publishing.	28	109
3.1 Positive perceptions enabled researchers'' OA publishing		30	88

3.1.1 of equal quality and prestige		8	13
3.1.2 Useful for meeting funders' OA publishing requirements		12	17
3.1.3 OA is necessary for bridging inequity gaps in knowledge access		4	9
3.1.4 Instrumental for enabling public good and free access to knowledge		14	33
3.1.5 OA as a tool for achieving social justice and democratizing knowledge		7	10
3.1.6 OA helps to improve readership and knowledge mobilization		8	6
3.1.7 OA helps to increase research impact, reputation, and citation		13	15
3.2 Negative perceptions stifled researchers' OA publishing		15	31
3.2.1 Preference for no-APCs OA journals limits OA publishing		5	9
3.2.2 Objections to APCs stifled OA publishing or researchers		12	18
3.2.3 Preference for traditional journals over OA journals		4	4
4. Strategies for Improving OA Uptake in the HASS Disciplines	This analytical theme brings together recommendations and strategies for improving open access uptake in the HASS disciplines, as suggested by the participants	20	73
4.1 Increase awareness, partnership, and advocacy for OA		12	25
4.2 Improve prestige and quality of OA outlets		4	5
4.3 Provide institutional and community support for OA		8	12
4.4 Build and incentivize OA culture		7	14
4.5 Provide viable and sustainable OA models		7	17