國立臺灣大學文學院圖書資訊學系

碩士論文

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從自然科學學者資料論文投稿動機

觀察其學術傳播之角色

Observing the Role of Data Papers in Scholarly

Communication from the Motivation of Nature Scientists'

Work Submission

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摘要

　　為增進分享交流科研資料的動能與活絡資料再用，資料論文 (data paper) 作為一種學術傳播之途徑，兼具學術成果出版與科研資料集描述之特色，投稿形式則與一般期刊論文相似，往往被學界視為能激勵學者分享研究資料的「正確」誘因。此學術出版品以論文形式正式將資料出版，予以後續被引用的歸功機會，同時，亦提供豐富的資料產製脈絡提升再用可能性，承襲同儕審查制度以確保品質。

　　然而，作為新興學術出版品的資料論文，其有效性與背後激勵制度仍有待檢驗，且其於學術傳播功能亦鮮為圖書資訊學界探索。引此，本研究採用質性研究之深度訪談途徑，以半結構式訪談大綱，蒐集 16 位曾有資料論文發表經驗，且以廣義自然科學領域為主的臺灣學者訪談資料，藉由事先研擬的訪談前問卷與訪談大綱引流，探討學者投稿資料論文的動機及其認定資料論文所展現的學術傳播功能。

　　本研究利用自我決定論 (Self-Determination Theory, SDT) 與其延伸的微型理論、階層框架等方法，剖析學者於投稿動機組成與其相互作用的影響。而探討資料論文所展現之學術傳播功能方面，本研究亦以 Borgman 等前人研究所點出的四大學術傳播功能作為框架，觀察學者對於資料論文位居學術傳播體系的認知評價。

　　本研究發現，學者於資料論文投稿行為是由層層堆疊的認知信念所建立，此受到個體基本心理需求與內外在動機所驅動，這種投稿動機常來回於「他者與自身」的利益考量上，資料論文可謂為一種學者於互惠善意與自身利弊通盤權衡下的決策產物。資料論文於學術傳播的多功能性被學者所肯認，除了能作為權威性學術紀錄、資料散佈管道、保存策管 (curate) 資料方法與潛在獎勵外，亦可作為一種協助驗證他方研究真確性的工具，藉此回應開放科學 (open science) 與研究通透度的願景。

　　本研究透過探究學者於投稿資料論文的動機與其所認知的學術傳播功能展現，發現學者投稿資料論文的動機與研究論文相似，且部分驅動力可能是為支援研究論文而起。同時，本研究在理解資料集類型差異會影響學者看待資料論文的觀點後，揭示資料論文目前的現況與挑戰：資料論文與其他資料出版管道間為共

生共榮局面，雖然其提供資料分享的誘因機會，然仍待學術政策承接以發揮效益。此外，本研究亦發覺期刊方於資料出版機制中的幽微角色，值得未來研究深入探究。希望藉本研究探索資料論文驅動力與其學術傳播功能的發現，能促進學界及相關利害關係者對彼此與整體動向的理解，提供未來相關制度訂定或調整的參考方向。

關鍵字：資料分享、資料出版、資料論文、自我決定論、學術傳播

Abstract

This study aims to explore the effectiveness and incentive mechanisms of data papers, as well as their performance in scholarly communication, which have yet to be verified.

Data papers are emerging scholarly publications that formally publish research data as an article, providing opportunities for subsequent citations. Furthermore, data papers also provide rich contextual information on data production to enhance the reusing possibility and implement the peer review process to ensure quality.

An in-depth semi-structured interview approach was conducted to collect the experiences and opinions of 16 Taiwanese data paper authors. Participants mainly come from the natural science discipline. Self-determination theory (SDT) along and its framework and extended micro theories were used to analyze researchers' motivation components and interactions. Meanwhile, four scholarly communication functions pointed out by Borgman and previous studies were also used as a framework to capture scholars' cognitive evaluation of data papers in the scholarly communication system.

Through this study, it has been found that the decision to submit data papers is influenced by researchers' multiple cognitive beliefs, which are driven by both essential psychological needs and internal/external motivations. In general, data papers could be described as decision-making tradeoffs of researchers who evaluate the interests of others and themselves. Additionally, data papers serve multiple functions in scholarly communication, including authoritative academic records, data dissemination channels, data storage and management approaches, and even potential rewards. Moreover, they could also be used as verification tools for authenticating research.

Overall, this study finds that the motivations for submitting data papers are similar to those for submitting research papers, with a driving force to support the status of the latter. However, researchers' perceptions of data papers vary depending on the type of data involved, highlighting the current status and challenges of data papers. While data papers co-exist and enjoy co-prosperity with other data publishing channels, they still need to be adopted by academic policies to fully leverage their benefits. Additionally, the subtle role of journal publishers in the data publication system warrants further research.

Through the discovery of the driving force of data papers and their scholarly

communication functions, this study hopes to raise awareness of data papers' status among academic communities and related stakeholders. By doing so, it provides insights that can guide the formulation or adjustment of relevant governance systems in the future.