

Faculty Self-Archiving Behavior: Factors Affecting the Decision to Self-Archive

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Introduction

This dissertation investigates university faculty members' self-archiving behavior - the placement of research materials on publicly accessible web sites, such as personal web pages, research group web sites, or Open Access (OA) repositories. Existing scholarly publishing is complemented by self-archiving. Although several studies have examined academic authors' self-archiving behavior quantitatively and qualitatively, little research characterizes the wide range of faculty members' self-archiving practices or investigates the motivations and barriers to self-archiving. My study attempts to bridge this gap in the literature. In addition, understanding the factors that motivate or impede faculty self-archiving behavior has potential benefits for universities since they view OA publishing and Institutional Repositories (IRs) as a means to regain control the intellectual output of faculty. Academic libraries also see these mechanisms as a way of reasserting their central place in the learning community. This research will assist these stakeholders to design and implement repositories for self-archiving in a successful manner

My overarching research question is "what factors influence faculty members' self-archiving behavior". Specific research questions are as follows:

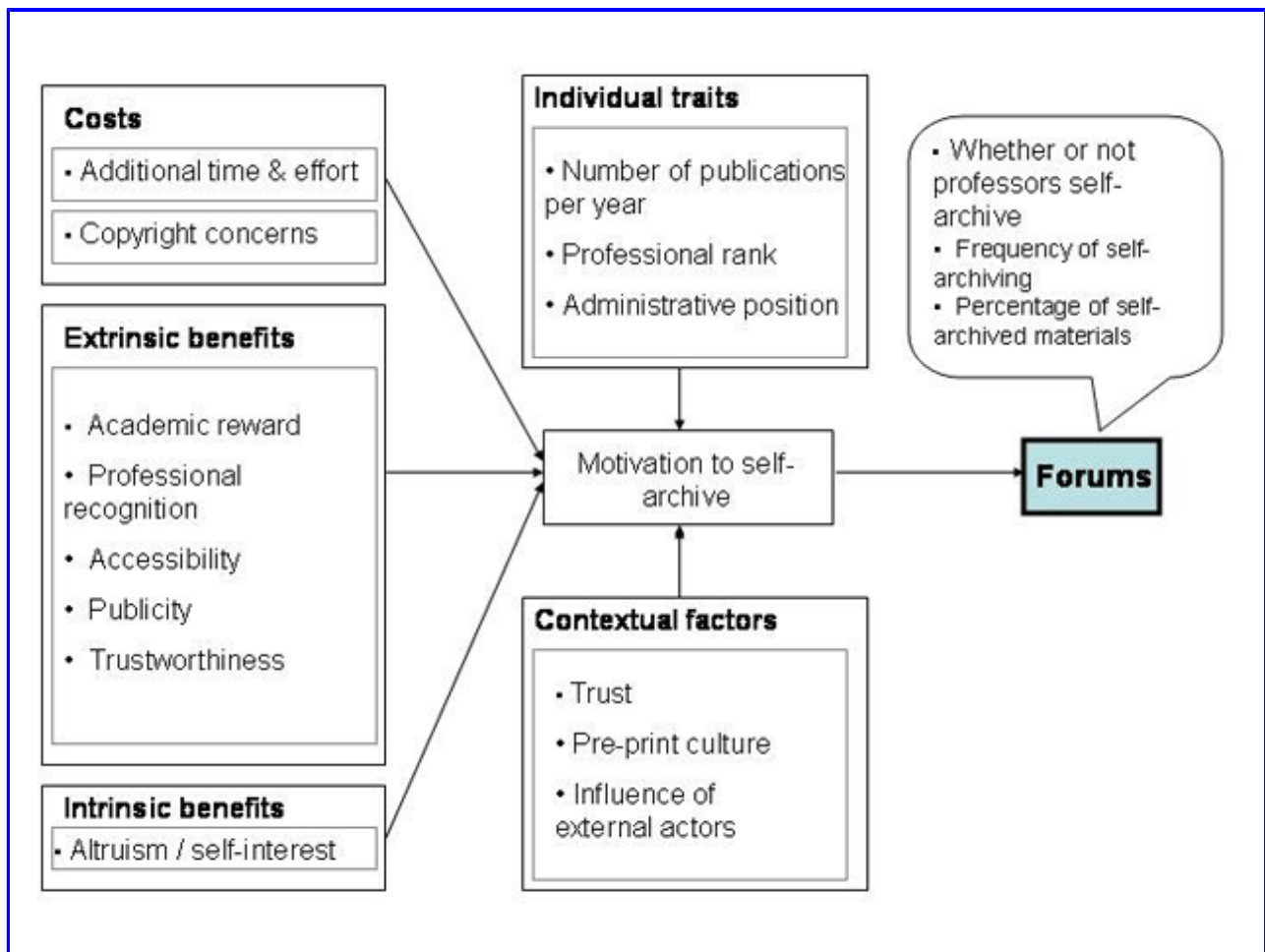
- What are existing ways that faculty members make research materials publicly accessible on the Internet?
- What motivates faculty members' self-archiving behavior?
- What makes them reluctant to self-archive their research materials?
- Why do they use certain forums for self-archiving?

Conceptual Framework

In this study, I build on two conceptual models of motivational factors affecting self-archiving: the socio-technical network model (Kling et al., 2003) and social exchange theory as applied to knowledge sharing (Kankanhalli et al., 2005; Hall, 2003). The socio-technical network model explains interactions between people and technologies taken place in various electronic Scholarly Communication Forums (e-SCFs). Since self-archiving behavior is considered a socio-technical activity, it is appropriate to use the model; however, the model only explains the general aspects of socio-technical networks. For example, Kling et al. provided little explanation for the incentives of actors on which the present study concentrates. For these incentive issues, I applied social exchange theory since this theory has been utilized in several studies regarding incentives of knowledge sharing in organizations. Hall (2003), in particular, mentioned that social exchange theory was relevant to research on scholarly communication because it represented a social process where actors shared knowledge and had social relationships via research communities.

Together, these two theoretical models suggest variables that needed to be examined. I have identified these variables as (1) costs (additional time and effort; copyright concerns); (2) benefits (academic reward; professional recognition; accessibility; publicity; trustworthiness; altruism); (3) contextual factors (trust; pre-print culture; influence of external actors) and (4) individual traits (number of publications; professional rank; administrative positions). I have consolidated those factors in Figure 1, which represents a model of factors that influence self-archiving behavior.

Figure 1. A Model of Factors affecting Self-archiving Behavior



Methodology

My study employs two complementary methodologies: surveys and interviews. The survey was conducted between October and December in 2006. The response rate was 45.6% (n=684). Following the survey, interviews were performed with 38 survey respondents in order to obtain more in-depth information. Using different methods in one study improves its validity. The surveys provide generalizable data and hopefully statistically significant results. Interviews provide greater depth and detail in answers to the questions and demonstrate internal validity for groups of interviewees, although they lack generalizability to the population at large. Triangulating these data should provide a balance between breadth and depth.

The population includes assistant, associate, and full professors at seventeen universities in the U.S. classified as Carnegie Doctorate-granting Universities with live DSpace IR web sites. The reason for selecting universities with IRs was that the present study is concerned with all possible methods available to faculty members for self-archiving, whereas not every university currently provides IR services to faculty members. Two groups were sampled at each university: 621 professors whose materials have been deposited in their

university’s IR, “contributors,” and 879 professors whose materials have not, “non-contributors”. Specifically, faculty in three prototypical disciplines in each of four areas - science, engineering, social science, and humanities - were used to develop a random stratified sample of the 879 professors in each university amounting to a sample size of 1,500 for the survey.

Semi-structured phone interviews were conducted from March to May in 2007. The interviewee sample was derived from 151 survey respondents who agreed to be interviewed. As a result, 38 professors were interviewed. Thirty-one have self-archived their research work, whereas seven have not. Interviews took approximately 25 minutes each.

Preliminary Survey Findings

Out of 684 (45.6%) survey respondents, 480 (70.2%) have self-archived their research materials - (1) pre-refereed drafts; (2) publishers’ PDF versions of refereed articles; (3) authors’ final versions of refereed articles; (4) unrefereed articles (i.e., technical reports or working papers); (5) book chapters -, whereas 204 (29.8%) have not. Out of those 480 self-archivers, only 60 (12.5%) had self-archived one of the five types. The majority of self-archivers have made more than one type of the papers or books publicly accessible on the Web. As seen in Table 1, book chapters were much less frequently self-archived than other types of material. Among the other types, publishers’ PDFs of refereed articles were slightly less self-archived than pre-refereed, unrefereed, or final versions of refereed articles.

Table 1. Types of Research Papers or Books Self-archived

	Pre-refereed articles	Publishers' PDFs	Final versions of refereed articles	Unrefereed articles	Book chapters
Select 1 (n=60)	15 (25.0%)	13 (21.7%)	15 (25.0%)	16 (26.7%)	1 (1.7%)
Select 2 (n=107)	64 (59.8%)	40 (37.4%)	51 (47.7%)	50 (46.7%)	9 (8.4%)
Select 3 (n=129)	88 (68.2%)	72 (55.8%)	105 (81.4%)	83 (64.3%)	39 (30.2%)
Select 4 (n=101)	87 (86.1%)	84 (83.2%)	96 (95.0%)	97 (96.0%)	40 (39.6%)
Select all (n=64)	64 (100.0%)	64 (100.0%)	64 (100.0%)	64 (100.0%)	64 (100.0%)

In addition, respondents have self-archived their research work in various ways. Personal web pages were the most frequently used venue for self-archiving, followed by research group web sites and departmental web sites. Similarly, Coleman and Roback (2005) found that personal web pages were employed for self-archiving by the majority of library and information science scholars who responded to their survey. Disciplinary repositories and

IRs were used infrequently, although disciplinary repositories were employed to deposit pre-refereed articles as commonly as departmental web sites. In particular, 274 respondents (40.0%) were aware of their university's IR, and 109 (15.9%) respondents have contributed to IRs in their universities.

Finally, the survey collected answers from 32 Likert-scale questions containing variables that might influence the decision to self-archive. Each variable in Figure 1 represented summed scores from two to four scale questions. In order to identify statistically significant factors, logistic regression analysis was conducted since the dependent variable was binary - whether or not the respondents have self-archived research work. The results indicated that four variables including (1) additional time and effort; (2) altruism; (3) pre-print culture; (4) number of publications showed significant differences in scores between self-archivers and non-self-archivers. These factors will be examined in greater detail through the interview data.

References

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