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Information-Seeking Behaviors of Business Faculty Jared Hoppenfeld and Michael M. Smith Texas A&M University

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Abstract

Numerous studies have been performed on information-seeking behaviors in specific disciplines but not in business. The purpose of this study was to gather a better understanding of business faculty research processes, and in doing so, come away with ideas on how best to support their initiatives. A comprehensive survey was sent to all business faculty members at the authors' institution. The results led to discussions on topics including resource preferences, library usage, and institutional repositories.

Keywords: business faculty, research methods, library resources, faculty preference, information-seeking behaviors

Introduction

University libraries invest heavily in subscription databases and journals, monographs, and specialized services. Ideally, faculty members would know everything that is available to them and in turn, would make use of the resources best suited for their research and teaching. It is up to librarians to help researchers get as close to that ideal situation as possible.

While libraries often conduct wide-reaching marketing campaigns, faculty do not always know the full extent of what is available to them. This shortcoming has been recognized locally after multiple interactions with business faculty members, some of whom have long been tenured but do not know of the library services offered to them. Additionally, through reference transactions, librarians have observed that faculty had asked their students to use outdated databases.

Completely understanding library patrons' research needs and processes is a difficult task to accomplish. According to Varlejs, (as cited in Folster, 1995), "The impetus for studying users and potential users of libraries and information systems has usually been the desire to improve service by making it more responsive to the clients' needs" (p. 83). With this study, the researchers aim to gather a better understanding of the changing resource uses and needs of business faculty, and in doing so, improve upon their service to this population.

Background

The faculty members who participated in the survey are from Mays Business School at Texas A&M University (TAMU). Texas A&M University is located in College Station, Texas and has over 39,000 undergraduate and 9,500 graduate students as well as 2,754 faculty members. There are over 120 undergraduate and 240 graduate degree programs. Texas A&M University was ranked the second best U.S. university in the *Wall Street Journal* Top 25 Picks from 2010 and received the same ranking in 2012 by The Washington Monthly.

Mays Business School has 180 faculty members teaching more than 5,000 undergraduate, master's, and doctoral students in eight different majors within the following five departments: Accounting, Finance, Information & Operations Management (INFO), Management, and Marketing. Among its highest accolades, the Mays Accounting Program ranked second among U.S. public schools in 2010, according to *Financial Times* (Mays Business School, 2013). In addition, The *Wall Street Journal* Top 25 Recruiter Picks (2010) ranked Finance fourth among public programs, AMR Research (2009) ranked Supply Chain seventh among public programs, and the *U.S. News & World Report* (2013) ranks the Department of Management's undergraduate program ninth among public institutions (Mays Business School, 2013). Mays Business School also has a degree program in Agribusiness. The business school is accredited by AACSB (The Association to Advance Collegiate Schools of Business) International.

Texas A&M University, Mays Business School, and its departments also rank highly for their levels of research. The university ranks 23rd in the nation for total research expenditures (over \$700 million in FY12) and third behind only MIT and UC-Berkeley for universities without medical schools. *Financial Times* (2012) ranked Mays 16th among public institutions for its faculty scholarship (Mays Business School, 2013). The Department of Accounting ranked third among public programs for faculty research and the Department of Management has four of the world's top innovation management scholars.

As a part of this study, business faculty were asked about their use of the TAMU Libraries. The Libraries have over 4.5 million volumes, approximately 1.1 million e-books, 123,107 journals, and over 1,200 databases with 85 being for business. Among the five libraries on campus, the West Campus Library (WCL) is a business subject library located adjacent to the business school. The WCL holds a small collection of business books and print journals as well as over 300 computers, including some computers specifically for business database access. This would be the "home library" for faculty who were surveyed for this study.

Literature Review

Numerous studies have been performed on the information-seeking behaviors of faculty in various disciplines at numerous institutions. Housewright and Shonfeld (2008) discussed specific digital aspects to this topic. They discussed the transition away from print for scholarly journals and the space and time savings that would result. Housewright and Shonfeld also addressed a lack of interest from faculty in open access, stating that their decisions on where to publish research are based on visibility within their field, and they are "far less interested in issues such as whether the journal is available for free to the general public" (p. 20). This same report also addressed the limited journal content present within institutional repositories at the time of the study.

Folster (1995) reviewed several studies that had been done over the years on informationseeking behaviors in the Social Sciences, including the INFROSS (Investigation into Information Requirements of the Social Sciences) study from the late 1960s-early 1970s, which showed that over a period of 30 years, journals remained a preferred source, with libraries and librarians not being viewed as an important source of information. The INFROSS study also showed a reliance on journal citations and colleagues rather than bibliographic tools and librarians. Folster also reported that a study in 1985 found that scholars ranked libraries lower than their own personal collections in importance as an information source. Mayfield and Thomas (2005) performed a study on Social Work and Family and Consumer Sciences faculty at California State University, Long Beach. As other articles have shown, faculty reported a heavy dependence on their private collections and the library's journal collection over the library's databases. A study from approximately seven years prior to Mayfield's and Thomas's article reported faculty making three times as many visits to their library. The authors went on to theorize that the Web has "lowered [faculty] expectations of the library because they use it less and...do not notice what is available in the library" (Mayfield & Thomas, 2005, p. 53).

A study of engineering faculty (Engel, Robbins, & Kulp, 2011) from 20 public research universities confirmed findings of similar studies that the most important sources of information to academic engineers are electronic access to scholarly journals, Internet resources, and interpersonal communications. They found that engineers as practitioners also prefer interpersonal communications, with trade journals taking preference over scholarly journals. Engineering faculty keep abreast of current developments in the field via conference attendance (22%), following references from articles (21%), and scanning current issues of journals (21%). The importance of e-access to journals (96%) versus print (37%) was no surprise as was importance of print books (71%) to e-books (56%) (Engel et al., 2011).

Tenopir (2003) also reported on print remaining the most popular medium for books, stating that "e-book use is still in the very early stages" (iv). E-books have been around approximately 10 years longer since that publication, and this Texas A&M University faculty survey addresses that topic. Another topic this survey addresses is faculty subscriptions to journals. Tenopir (2003) found that personal subscriptions were decreasing with a higher reliance on library electronic subscriptions, but in another study six years later by Tenopir, King, Spencer, and Wu (2009), it was found that the source of 33.9% of journal articles read by faculty was personal or school/department subscriptions.

In the 2009 study by Tenopir et al., the authors researched article seeking behaviors, including format preferences, and stated that "not all subjects have the same availability of electronic sources, resulting in at least temporary differences in sources and format for reading" (p. 141). Tenopir et al. (2009) also determined that "there is no statistically significant difference based on age" (p. 146) when referencing faculty preference for print format of journal articles; they found that 81.4% of faculty in their study read articles in print format, whether from a print journal or printed out/photocopied.

Resulting from a study on Sociology faculty at the University of Wisconsin-Madison, Shen (2007) reported a couple of other desired information sources, besides journals. Faculty members do a good amount of information-gathering at conferences as they are "useful for things that haven't been published in journals" (Shen, 2007, p. 9). Email is another informationacquisition tool mentioned for research.

A study (Dewald, 2005) of business faculty and student usage of the web and databases was performed at Penn State University. Researchers there found that 74.1% of faculty respondents use the web for professional research most of the time or almost always while only 43.1% use library databases. Database usage increases to 59% when focusing solely on full time faculty. Only 10.5% of part-time faculty use databases, which may be due to no research requirement and/or lessened familiarity with the campus environment and available library resources.

Wickramanayake (2010) reported that 49.42% of Management and Commerce faculty in Sri Lankan universities used the library more extensively to write research reports or articles, 25.28% while preparing a research proposal or conducting research, and 20.68% while preparing for class lectures. When looking at frequency of books borrowed, it was found that 39% borrowed 1-10 books per month, 35.63% borrowed 11-20, 11.49% borrowed 21-30, and 3.44% borrowed 31-40.

Leckie's research (1996) on information-seeking behaviors took a different twist. Although she did find similar information to be true, such as the low priority librarians are given in the research process, she discussed the faculty "expert researcher model" which requires "a heavy reliance on personal contacts and citation trails" (Leckie, 1996, p. 202). Leckie pointed out the unfortunate truth that faculty members expect their undergraduate students to be instantaneous expert researchers when they in fact do not fully understand the capabilities of the university library and its resources.

In a survey of business faculty performed by ProQuest Publishing and Market Development Organization (2012), numerous resources used for research, besides non-journal articles, were discussed. The survey showed that the most commonly used resources by business faculty other than journal articles are print books (95%), conference proceedings (92%), working papers (88%), prepublication papers (88%), and raw data (85%). When looking only at passive research, used for "generating ideas for active research or simply staying current in one's field," (ProQuest, 2012, p. 1) newspapers and print books were the top non-journal article resources. The study found that print books have a stronger following than electronic and that faculty use their own or professional allowance funds to purchase books without checking library availability.

Past studies on information-seeking behaviors have much in common. Although some results differ by discipline, virtually all faculty favor books in print format and journal articles

electronically. Librarians' low priority as a research source is unfortunate but may support the authors' belief that their faculty are unaware of many of the library services available to them. Research has also found that faculty use of libraries has declined. This study addresses these and other topics related to information-seeking behaviors.

Objectives

The purpose of this research project was to gain insight as to how business faculty perform their research. The authors specifically wanted to learn about their preferences in materials (e.g. print vs. electronic, books vs. articles), use of the University Libraries, use of interlibrary loan or document delivery services, e-book use, use of private collections, web services use, and data management practices. The goal was to use the results of this study to most effectively support the business faculty at the authors' institution.

Methodology

The data for this research was collected via the survey method. The survey was developed using online software, Qualtrics, which provided a robust question format menu and excellent survey navigation functionality. The inspiration for the questions used in this survey were drawn from research conducted by Dewald and Silvius (2005), Engel, et al. (2011), Francis (2005), Ge (2010), Hahn, Speier, Palmer, and Wren (1999), and Wickramanayake (2010). Once developed, the survey was pre-tested to confirm that the language used in the survey was understood by the intended audience.

The final survey instrument consisted of four demographic questions and 44 topical questions of which 13 were forced choice and eight were open response. The targeted population

was the faculty of the business school, which is made up of 180 faculty members, and covered all academic departments.

The invitation to participate in the research study was distributed through campus electronic mail, accompanied by a cover letter explaining the purpose of the research. Participants were assured that their anonymity would be maintained and that their participation was voluntary. To incentivize the faculty to participate, they were afforded the opportunity to enter a drawing for one of two Kindle Fire e-book readers. The names were not included with the data being analyzed, to ensure anonymity.

The survey was distributed mid-January and was open until February 15, 2013. A reminder email was sent out 10 days prior to the deadline thanking everyone who had already completed the survey and reminding those who had not that there was still time.

Discussion of Results

Demographic Data

Overall, 66 faculty members started the survey and 59 usable surveys had been completed for a dropout rate of 10.6%. As a result, the survey had a 32.8% response rate. The respondents were almost evenly split among males (54%) and females (46%). All five departments were represented with Management (31%), Accounting (26%), and Information & Operations Management (20%) leading the way. Marketing (11%) and Finance (10%) also had participation with Business Graduate Programs (2%) also represented. From a longevity standpoint, faculty who have been active in their area of study 16 years or more accounted for 41% of the respondents and those active 6-15 years another 38%. Those respondents who had been active in their field for 1-5 years represented 21%. While overall fewer females responded to the survey, females responded more frequently in the Accounting (56%) and Marketing (71%) departments than the males. Additionally, females represented 56% of the respondents who had 6-15 years' experience in their areas of study.

The authors identified more than 80 different areas of research among survey respondents. Strategy was among the most popular topics along with supply chain management, corporate governance, service operations, financial reporting, organizational studies, and law. There were no surprises in the research being done by the business faculty.

Resource Usage and Satisfaction

Mirroring the results of numerous other surveys, the respondents to this survey preferred to read books in print (66%) and articles in electronic format (83%). There was a small group, books (12%) and articles (9%), which had no preference.

When asked whether open access publishing was an important issue in their disciplines, the results were somewhat surprising. Sixty-eight percent of the respondents answered "no." Accounting and Finance faculty were evenly split (50% yes and 50% no) while the rest mostly answered negatively (70% no).

When asked if they use the Library to gather material for their research publications, 86% responded that they did. However, 50% of the Finance Department respondents stated they did not. This could be due to subscriptions to specialized datasets within the department (e.g. Wharton Research Data Services, or WRDS).

When asked a more specific question, "Do you use the Library's subscribed databases?", the positive responses dropped off to 62%. When asked about the type of database they did find

most helpful with their research, 87% selected article databases, 39% selected company information databases, and 35% selected specialty databases.

When presented with a list of databases, those selected most often included JSTOR (62%), ABI/INFORM (57%), LexisNexis (43%), Business Source Complete (33%) and Thomson ONE (33%).

A few curious results are as follows:

- No one from the Accounting Department chose the accounting specialty databases;
- No one from the Finance Department chose the finance specialty databases; and
- A number of specialty databases were not chosen by the INFO department.

Additionally, when asked "How satisfied are you with the Library's database resources?", two respondents were "Very Dissatisfied" with the quality of the databases while one was "Very Dissatisfied" and one was "Dissatisfied" with the quantity of the databases. While these figures are concerning, overall 86% were "Satisfied" or "Very Satisfied" with the quality of the databases and 76% were "Satisfied" or "Very Satisfied" with the quantity of the databases.

When asked about their use of the Library's subscribed journals, a solid 95% of the respondents answered "Yes" to having used the resources. However, one respondent answered that they were "Very Dissatisfied" with the quality of the Library's journal resources. When asked later in the survey to list which journals the Library was missing, requiring them to collect them in a personal library, it was found that all seven titles provided were indeed available in the Library's subscribed resources.

On average, business faculty are making an average of 14 visits to the library per semester for print journals. A high variability of responses caused a closer look. Out of 59 survey respondents, 13 said they still use print journals with four using the Library's print journal collection at least 50 times per semester. Of those frequent print journal users, two are full professors, one is an associate, and the other an assistant. Two are Marketing faculty and one each is from Management and Accounting. Three faculty members said they use print journals 15-25 times with two being full professors and two from Management. Six stated they use print journals 2-5 times per semester with a majority being full faculty and from either Accounting or Management and most having 16+ years' experience as a faculty member/researcher in their area of study. From the results of this survey, it seems that Management and Accounting are areas of business that may have more print journal usage. One can speculate whether print journal use is due to fewer journals available electronically within a discipline, as addressed by Tenopir et al. (2009), or personal preference due to comfort levels/familiarity with this format.

When asked about their use of the Library's monograph collection, 68% of the respondents answered "Yes" to having borrowed books from the Library; an average of 5.26 times per semester. However, one respondent answered that they were "Very Dissatisfied" with the quality of the collection and two respondents answered that they were "Dissatisfied" with the quantity of the collection. When asked later in the survey if they were familiar with the Library's Suggest a Purchase service, 59% answered that they were not aware of the service.

Past LibQual+® surveys show that the Library's Get It For Me service (a combination interlibrary loan and campus courier service) is popular, and the current survey substantiates that finding. Sixty-five percent of the respondents had used the Get It For Me service to obtain a journal article; an average of 6.64 times per semester. Additionally, 60% of the respondents had used Get It For Me to borrow a book from another library; an average 5.54 times per semester.

When asked about their use of electronic books in the Library collection, only 38% answered that they had accessed an electronic book. This is a common occurrence across disciplines and

institution sizes. In the Housewright and Schonfeld (2008) study, it was found that only 16% of faculty reported often or occasional use and just over 50% reported at least rare use. Ninety-two percent of those at Texas A&M University that have used an electronic book "liked" the experience, using comments such as "Liked the simplicity" and "Saves a lot of time." However, there were the expected comments complaining about the printing capabilities of electronic book systems.

The survey also contained questions designed to gauge the use and/or reliance on personal resource collections for research purposes. Half (52%) of the respondents answered that they did use a personal library of books or journals and had personally subscribed to an average of 4.27 journals and purchased an average of 5.8 books each year. Many (77%) acknowledged that the Library already subscribed to the journal. However, as stated earlier, when asked to which journals they thought the Library did not subscribe, it was determined that all seven were available in the collection. With regard to book purchases, the respondents stated that they were not necessarily aware if the Library owned the book; they just felt they wanted a copy. Encouragingly, one comment stated "In general, I think the library collection is good."

When asked what websites or online services they frequented (Table 1) when looking for research material, Google Scholar was clearly the most popular, being chosen by 67% of the respondents. In addition to those listed in the table, others included Bing, the U.S. Securities and Exchange Commission (SEC), publisher, and legal websites. Thirty-one percent listed a subscribed library database (WRDS and JSTOR, among others) when asked for a website. This is similar to an observation the authors have made of students asking about a "website" mentioned in their class. After further discussion, the librarians come to find that the students are asking about a database to which the Library subscribes.

One of the questions in the survey asked the faculty upon which method(s) they based their research (Table 2). The Finance Department clearly favored statistical modeling with 100% of those respondents choosing that method. The INFO and Management Departments favored scholarly literature with 86% and 73% respectively choosing that method.

Another question in the survey asked the faculty which tools they use to stay aware of new research in their field (Table 3). Responses to the "Other" category included SSRN (Social Science Research Network), RSS feeds from journals, news feeds, and conferences. Contrary to one of the author's assumptions that Web 2.0 had caught on for this purpose, very few business faculty listed RSS feeds, blogs, or Twitter.

The Library is always trying to identify resources that faculty and students need for their research, and insights into those needs are always helpful. One important question included in the survey asked what types of research materials, or data, are the hardest to locate or obtain. A couple of unexpected responses included "old journals" and "older articles"; surprising given the Library's deep print collection and subscription to many backfiles. The following responses were not surprising:

- Data on company operations
- Proprietary data (e.g. contract terms and structures)
- Subsidiary level data, both foreign and domestic
- Reports done by, or for, accounting firms or special interest groups
- "Foreign journals"

With new mandates to develop data plans for federally sponsored projects and the rise in interest about data in general, the survey included two questions related to data intensive research projects. The first asked where the researcher obtained their data (Table 4). It was no

surprise that WRDS, Wharton Research Data Services, was the top source at 47% and Library databases showed up second at 28%. Responses in the "Other" category included "Purchased" (2) and "Collected myself" (2).

The second data-related question asked "What happens to your data after publication?" While 79% responded that they saved the data to a personal storage device or to a departmental/college network, and 16% saved in a print format, 5% of the respondents answered that they discarded the data.

Two questions were used to gauge the faculty's awareness of institutional repositories. The first question asked if the faculty member had ever placed a pre-print version of their publications in any archive. Only 19% had ever done so and of those who did, they all used SSRN. The second question asked specifically if they were aware of the Texas A&M University Digital Library (home of the institutional repository) and unfortunately, 55% responded that they were not aware of the resource. Although this is better than the two-thirds mark reported in Housewright and Schonfeld's Ithaka report (2008), it is still high.

Finally, the faculty were asked what tool(s) they used to manage citation information for their research projects. Sixty percent of the respondents indicated that they used EndNote. Interestingly, none of the respondents used RefWorks. Two other tools that were noted, CiteULike and JabRef, were each mentioned by a single faculty member. The remaining faculty indicated they used no tool at all.

Conclusions & Next Steps

As stated earlier, the purpose of this research project was to gain some insight as to how business faculty members approach their research. The project sought insights on faculty preferences in materials format and the use of the University Libraries collections, services, and other resources available to them.

The results presented are only indicative of the views of the faculty who took the time to respond to the survey, so it would be improper to make any sweeping assertions regarding the information-seeking behavior of the wider faculty group or its sub-disciplines. However, the results of this survey do coincide with many of the studies referenced previously. Housewright and Schonfeld (2008) and Engel et al. (2011) found a preference for electronic journal articles over print, as did this study. Findings of this article also included a desire for print books over e-books, as did those of Engel et al. (2011), Tenopir (2003), and ProQuest (2012). Business faculty at Texas A&M University seem to feel more strongly about journal format (83.3% favoring electronic) than book format (65.9% favoring print). Tenopir et al. (2009) reported an interesting finding: although it has been found that faculty typically favor journal articles in electronic format, this particular study found that the final reading format was usually print. This included a small fraction coming from print journals and more being printed from electronic journals. Although not included in the authors' study, this topic may be considered in the future.

Additionally, on the whole, it is interesting to note where surprises arose. For instance:

- The open access movement does not seem to have reached the business disciplines;
- Are the discipline-specific databases that were not used by faculty seen as strictly student tools?
- Why are some of the more expensive databases not recognized as research worthy?
- When asked about websites used for awareness, a number of databases were referenced.
 Do faculty members have the same problem of distinguishing databases from websites that students have?

• Why have so few business researchers archived their research data?

Reasons for limited knowledge on library resources may include the following: 1) faculty do not seek assistance, 2) faculty limit their use of resources to their subject area, 3) faculty aren't keeping current, and 4) there is a need for improved support from business librarians. These and other questions remain to be answered.

It is clear to these researchers that there is a need to educate the faculty on important services, capabilities and resources which the Library has to offer in the support of faculty research and teaching. Specifically, the following need immediate attention:

- A guide to finding journals and articles (electronic and print, new and old)
- Visibility of subscription databases list
- A guide to off-campus access
- Promotions about the Suggest a Purchase service
- Promotions and training on the Digital Library
- A guide to good data management practices

The insights gained from this study also provide important clues to the research practices these faculty may be modeling to their students. Lacking an in-class presentation by a business librarian, and given the apparent lack of awareness of many important databases and the different processes used by the faculty, students may never learn which library resources would be valuable to their research. Leckie (1996) discussed this "expert researcher model" (p. 202) and the obvious disconnects that result with novice undergraduate students.

This detailed profile of the information-seeking behavior of the business faculty provides information on the needs (some previously known and others unknown) of the faculty and how proficient they are with library technologies and services. Librarians should remember that they

too are teachers, and the faculty are key members of their changing "student" body. Additionally, the library environment is subject to unceasing change. Therefore, those in the library profession must also be constantly changing their curriculum to continually develop faculty knowledge of what the Library offers.

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Website or Service	% of Respondents
Google Scholar	67%
Library databases	31%
SSRN (Social Science Research Network)	17%
Library website	17%
Publisher websites	8%
Amazon	6%
Google	6%

Table 1 Websites or Online Services Frequented for Research Materials

Method	% of Respondents
Scholarly literature	52%
Statistical modeling	50%
Survey	36%
Field work	21%
Experimentation	14%
Teaching experience	10%
Other (Simulation; Archival data)	7%

Table 2 Methods Upon Which Research Was Based

Tool Used	% of Respondents
Scanning current issues of journals	83%
References from an article (Citation trails)	79%
Conversations/correspondence w/colleagues	74%
Article reviews	29%
Current awareness services / alerts	26%
Abstracting services	21%
Book lists	10%
Other	10%
Online discussion groups	7%
Blogs	5%

Table 3 Tools Used to Stay Aware of New Research

Data Source	% of Respondents
WRDS (Wharton Data Research Service)	47%
Library database	28%
Company source	25%
Survey	25%
Other	22%
Industry source	19%
Government source	17%

Table 4 Data Sources for Data Intensive Projects