

**Factors Contributing to Download Activity for  
Applied Research Projects Completed at Texas State University in the  
Master of Public Administration Program**

By

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## **Abstract**

The purpose of this research was to address the question: What factors contribute to the downloading of applied research projects (ARPs) completed by students in the master of public administration program at Texas State University? Building on previous work, the many characteristics associated with any ARP were first sorted into categories to add focus to the analyzing process. Employing content analysis as a research method, 290 ARPs available online through eCommons, Texas State's institutional repository, were reviewed and categorized for the calculation of average document download rates associated with each characteristic. Working hypotheses were then developed and tested through multiple regression analysis. The findings suggest that reference in Wikipedia, the number of citations in Google Scholar, and a focus on state government issues have a significant positive influence on the likelihood that an ARP will be downloaded.

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Figure 1. Author with the harbormaster at Ash Shu'aybah, Kuwait

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## Chapter 1. Introduction

Applied research projects (ARPs), the capstone papers of master of public administration (MPA) students at Texas State University, have been electronically available through an open access digital repository since August 2005. Even before they were made available through the Berkeley Electronic Press digital commons, these papers received notice because five won the Pi Alpha Alpha award for best paper through the National Association of Schools of Public Affairs and Administration.<sup>1</sup> The papers are produced using the project management guidelines provided by Shields (2006a) and a unique two-course system that has been highlighted in several journal articles.<sup>2</sup>



Figure 2. Texas State campus at sunset

The 294 papers that make up this inventory of papers discuss a variety of topics.<sup>3</sup> Recent papers deal with topics local government topics such as outsourcing, cultural arts planning, causes of residential fires, and affordable housing.<sup>4</sup> Others deal with criminal

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<sup>1</sup> Award-winning papers are available at <http://uweb.txstate.edu/~ps07/documents/awards.pdf>.

<sup>2</sup> See [Shields](#) (1998), [Shields](#) (2003), and [Shields and Tajalli](#) (2006). In addition, there are numerous conference papers that document the unique approach to research methods used by Texas State; see [Shields](#) (2006b), [Shields and Tajalli](#) (2005), [Shields](#) (2004), and [Shields](#) (1999).

<sup>3</sup> The 294 number for the papers is measured as of 30 November 2009. The primary measurement date for analysis of ARPs in subsequent chapters is 18 August 2009.

justice topics such as prison management models, child protection, workplace violence, Hurricane Katrina's impact on crime rates, drug courts, sheriff's office leadership, and risk management in law enforcement.<sup>5</sup> The unique, crystal-clear San Marcos River begins on the Texas State campus; not surprisingly, other ARPs deal with water, flood plain management, and environmental issues.<sup>6</sup>

### Exceptional Downloads

The Texas State MPA student body is composed mostly of working professionals who choose their topics based upon their coursework and work experiences. They bring access to data and work experience to their ARPs.<sup>7</sup>

As a result, the papers are practitioner oriented. To emphasize the practitioner focus of the Texas State MPA program, pictures of student authors with links to their papers are scattered throughout this paper.

In the three years since the Texas State MPA ARPs have been made available digitally, the repository has experienced exceptionally high downloads and international exposure. Downloads had been recorded from over 130 foreign countries by April 2009.



Figure 3.  
[Charles Zech](#), J.D. (2008)  
“An Analysis of Texas  
Home Rule Charters”

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<sup>4</sup> See [Alexander](#) (2009), [Alvarado](#) (2009), [Huang](#) (2009), and [Jobe](#) (2009).

<sup>5</sup> See [Salinas](#) (2009), [Campbell](#) (2009), [Sandoval](#) (2009), [Boyce](#) (2009), [Bailey](#) (2009), [Thomas](#) (2009), and [Hutto](#) (2009).

<sup>6</sup> See [Powell](#) (2009), [Gillfillan](#) (2008), [Reed](#) (2009), and [Tresner](#) (2009).

<sup>7</sup> For more information on the Texas State Master of Public Administration Program, see the 2009 self-study document written as part of the re-accreditation process for the National Association of Schools of Public Affairs and Administration available at <http://ecommons.txstate.edu/padmpub/4/>.

ARPs have been highlighted in a Berkeley Electronic Press newsletter *Digital Commons* (2009). The article speculated that easy, quick access to papers that focused on real public administration problems accounted for the high level of downloads.

Using data provided through a Berkeley Electronic Press Web site that lists all institutions with an open access digital repository, a comparison of institutional downloads is possible.<sup>8</sup> The magnitude of the surprisingly high number of downloads are documented in table 1.1, taking a set of selected institutions and presenting the number of papers, total downloads, and average downloads.

The institutions are ranked by average downloads. The 294 Texas State ARPs had over 154,000 downloads for an average of 525.4 downloads per paper. The only group of papers with a higher average download was the Yale Law School (569.9). Cornell Law Library is third with 382.8 average downloads. The average downloads drops off fast. Average downloads of the University of Pennsylvania (ranked ninth) was 110.0 and University of Georgia Law School, Connecticut College, and the University of Nebraska-Lincoln (ranked tenth to twelfth) all had average downloads under 100. Using total downloads as a measure of impact the Texas State ARPs rank higher than the Yale, Georgetown, and Georgia law schools. Moreover, the number of downloads (154,465) is greater than those of Connecticut College, Atlanta University Center, Florida International, Grand Valley State, Kennesaw State, and Boise State University (147,648) combined.

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<sup>8</sup> See <http://digitalcommons.bepress.com/institutions.html> to find the data for these institutions. Data related to Texas State ARP downloads were obtained directly from a secure Berkeley Electronic Press Web site with counts for withdrawn ARPs set to zero.

**Table 1.1. Downloads of papers at selected educational institutions**

Institution	Number of papers*	Total downloads*	Average downloads
1. Yale Law School	168	95,740	569.9
2. Texas State University MPA applied research projects	294	154,465	525.4
3. Cornell University Law Library	416	159,256	382.8
4. Texas State University	1,151	367,988	319.7
5. Cornell University	10,057	1,840,605	183.0
6. Pace University	2,934	404,298	137.8
7. Thomas Jefferson University	2,376	298,254	125.5
8. Georgetown University Law Center	410	48,625	118.6
9. University of Pennsylvania	12,503	1,375,559	110.0
10. University of Georgia School of Law	1,249	119,827	95.9
11. University of Nebraska-Lincoln	37,788	3,217,745	85.2
12. Connecticut College	595	47,192	79.3
13. Atlanta University Center (includes Clark Atlanta University, Morehouse College, Spelman College, and Interdenominational Theological Center)	540	23,508	43.5
14. Florida International University	1,253	50,378	40.2
Grand Valley State University (includes <a href="#">PA student work</a> )	344	12,109	35.2
Kennesaw State University (includes <a href="#">MPA capstone papers</a> )	80	1,964	24.6
Boise State University	760	12,497	16.4

\*As of 30 November 2009.

Note: The starting date for Texas State ARP downloads is 30 August 2005. The starting dates for the other institutions is unknown and should be assumed to vary.

Where do these downloads come from? One might speculate that most come from within Texas State. This is unlikely because only 3,032 downloads are recorded for Texas State University's domain (search.txstate.edu), accounting for under 2% of the total. Further, there have been almost 20,000 downloads from 136 countries (as of 30 November 2009). Countries that most often download the ARPs are India (2,664), United

Kingdom (2,384), Canada (1,666) Australia (1,065) and Malaysia (937). See appendix A for a more complete list. In addition, other domains generating significant MPA downloads include Google Scholar, the US Department of Justice and the US Department of Agriculture.

## Research Purpose

As part of an effort to assess Texas State's MPA program through the ARPs, students such as [Terry Beck](#) (1993), [Ana Almaguel](#) (1997), [Mary Gute](#) (1999), and [Saidat Ilo](#) (2005) have examined those ARPs using criteria from the public administration



Figure 4. [Daniel Reed](#) (2009)

“Environmental and Renewable  
Energy Innovation Potential  
Among the States:  
State Rankings”

literature. This research effort is an extension of that previous work. Most important, however, the present work includes information on paper downloads. Thus, reader interest in particular ARPs can be analyzed according to the content of the papers. This new capability is made possible by Berkeley Electronic Press technology.

Hence, the purpose of this study is to first describe Internet usage (full-text downloads), taking into account public administration research criteria (e.g., topic, research purpose, level of government) and extrinsic factors such as search engine optimization. Second, factors that contribute to downloads of Texas State ARPs are explored.

## **Chapter Summaries**

Chapter 2 reviews the debate among scholars over what constitutes useful research in public administration. It then examines the literature on usage measurement for online scholarly works and the discovery of public interest. Micro-conceptual frameworks of descriptive categories and working hypotheses are developed and linked to the literature. Chapter 3 describes the methodology employed for collecting the data and in operationalizing the micro-conceptual frameworks. Chapter 4 presents the results of the analyses with simple descriptive and multivariate statistics. Chapter 5 discusses conclusions drawn from the research findings and offers suggestions for further related research.

## **Chapter 2. Literature Review**

### **Chapter Purpose**

This chapter reviews the ongoing debate among scholars over what constitutes useful research in public administration. The development and application of usage log analysis by the information community in an Internet environment is then examined in light of its utility in public administration.

The chapter concludes by developing descriptive categories and working hypotheses that are later used to build the coding sheet used in the content analyses of the Texas State ARPs.

### **Research in Public Administration**

Reporting on their review of research methodology described in *Public Administration Review* from 1975 through 1984, Perry and Kraemer (1986, 219) observed that 80% of the articles “were problem rather than theory oriented. Problem-oriented research tends to reduce the chances that the conditions for sound theory will be met.” Kraemer and Perry (1989, 9) asserted that “research should become more prominent in public administration” with public administration exporting, as well as importing, knowledge from other fields. Table 2.1 offers just a few examples of such knowledge exporting through applied research projects at Texas State University.

Questioning “whether *PAR* is representative of research conducted throughout the field and a sound source for gauging the nature of public administration research in general,” Houston and Delevan (1990, 674) examined “six public administration-related



**Table 2.1. Knowledge-exporting ARPs**

[Kevin Baum](#)'s (1997) exploration of group dynamics and power structures, 1998 Pi Alpha Alpha student manuscript award winner and republished in *Handbook of Conflict Management* (Pammer and Killian 2003).

[Dee Ellis](#), D.V.M.'s (2001) examination of problems related to carcass disposal management during disasters, 2002 McGrew Public Policy Award winner-practitioner category, cited in *Organic Recycling* (Korean Journal of the Organic Resources Institute).

[Steve Spacek](#)'s (2004) paper, retitled and published as *DO MESS WITH IT: A Study of Littering and Role of Southern and Nearby States*, at <http://www.idealists.org>, a project of the non-profit organization Action Without Borders.

[Tyler Revel](#)'s (2006) description of stress management in law enforcement, cited in an *Applied Psychology in Criminal Justice* article (Garner 2008).

[James Quintero](#)'s (2007) paper on regional economic development was cited in a *Regional Science Policy and Practice* article (Mulligan 2008).

[David McCauly](#)'s (2007) explanation of the impact of advanced placement and dual enrollment programs on college graduation, cited in the Texas Public Policy Foundation's *Policy Perspective Series* (Story, Terry, and Tyler 2007).

[Justin Marlin](#) (2008) presented his findings on bicycle safety in Austin to the Austin City Council.

[Dustin McLemore](#)'s (2008) paper is now incorporated in training programs for records management professionals throughout Texas.

journals other than *PAR*" in search of the answer. Houston and Delevan (1990, 678) supported the findings of Perry and Kraemer (1986) by observing "that public administration is engaged in little theory testing" and "what little theory testing is done is rather basic in nature." In addition to improving "scholars' understanding of...public organizations," Bailey (1992, 52) sees a role for research in developing "information to improve the practice of administration by practitioners... including the identification of theories and models that can be applied in problem solving."

Nicholas, Huntington, and Watkinson (2005, 248) assert that “a good number of these studies are small-scale, methodologically or discipline limited, and superficial in their reading of the situation.” To bring more objectivity into the discussion of what constitutes value, usage log analysis offers one method of assessing the usefulness of public administration research by examining the records of what is actually drawing the attention of readers.

### **Usage Log Analysis**

Recent years have seen “a tectonic shift in scholarly communication based on print resources to one predicated on online resources” (Rowlands 2007, 369). Many library users “have become primarily or exclusively remote users,” necessitating “some sort of computerized monitoring log” as a way of measuring the extent of service being provided to users who are otherwise invisible (Peters 2002, 42). In this new Web environment, Nicholas et al. (2005, 252) redefine *user* as a computer and *use* as search sessions conducted and items viewed or requests made. Though generally acknowledging the technical point made by Nicholas et al., the definition of a user as anything other than an inquiring person was not widely shared by others in the literature reviewed. Various referred to as Web log analysis and transaction log analysis, usage log analysis seeks to find meaning in the tremendous volume of available, but not necessarily precise, data (Nicholas, Huntington, Lievesley, and Withey 1999). Usage logs provide an “electronic record of interactions” between users and systems, and analysis of the collected data in those logs can be applied “to investigate particular

research questions concerning interactions among Web users, the Web search engine, or the Web content during searching episodes” (Jansen 2006, 408–409).

Three essential stages in the process of monitoring these user/system interactions are identified by Peters (2002, 40): collection, analysis and interpretation, and application of results. With the implementation of usage logs, data are collected relatively inexpensively from a large number of users with costs limited to software and storage (Jansen 2006). Further, the capabilities of appropriate software and data storage can eliminate the need for sampling (Nicholas and Huntington 2003) and researchers are relieved of time limitations as long as stored log files exist (Nicholas et al. 2005).

“Transaction logs do not show preferences; rather, they show action from which preferences are often inferred” (Tenopir 2003, 10). Applying the term *usage mining*, Chen and Liu (2004, 552) explain that “the process of automatically discovering and interpreting users’ access patterns” is commonly applied “because web server logs constitute a rich source of data collected in a non-intrusive way.” Non-intrusive data collection reports what people (users) actually do, not what they thought they did, what they think they should do, or what they think they should say (Jamali, Nicholas, and Huntington 2005; Nicholas and Huntington 2003). This non-intrusive characteristic is vital in a naturalistic investigation such as the one undertaken in this study because, as Jansen (2006, 412) explains, “...a data collection method that interferes with the (users’) information-seeking process may unintentionally alter that process.” With unfiltered and automatically collected log data, Jamali et al. (2005) see human interference as limited to the data’s subsequent interpretation and a good way to test hypotheses.

While non-intrusive data collection provides significant strengths with data coming from a large number of users and costs essentially confined to software and storage, there are limitations as well, such as user identification difficulties (Jamali et al. 2005). Returning to the point made by Nicholas et al. (2005) about who are the users, Huntington, Nicholas, Jamali, and Watkinson (2006, 307) further observe that “Normal transaction (usage) log analysis reveals much information about use and little about the user.” Recorded data are not sufficient to distinguish among different users and among multiple visits by the same user (Spiliopoulou, Mobasher, Berendt, and Nakagawa 2003). It is possible to “enrich the usage data by adding demographic data...from a subscriber database or online questionnaire” (Nicholas et al. 2005, 251), but with a loss of the attendant benefits associated with non-intrusive data collection as described above.

“There is no way to collect demographic data when using transaction (user) logs in a naturalistic setting” (Jansen 2006, 424). Further, Internet protocol (IP) addresses cannot be traced back to specific individuals or machines one-for-one. Nicholas and Huntington (2003, 392) observe that “Location statistics, based on domain name...are uninformative and misleading.” Seemingly United States IP addresses are often registered to non-U.S. residents (Jamali et al. 2005). “(U)sing the IP addresses to locate the geographical location of users misclassifies a little under two out of three users” (Nicholas and Huntington 2003, 392). That said, we do know that nearly 13% of all full-text downloads (19,910 out of 154,465)<sup>9</sup> of Texas State University MPA ARPs were

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<sup>9</sup> Measured on 30 November 2009. As noted earlier, the primary measurement date for analysis in subsequent chapters is 18 August 2009. The total number of downloads is cumulative over time so the measurement date is always noted.

recorded as originating from 136 non-U.S. top level domains (see appendix A). Applying what Jamali et al. (2005) and Nicholas and Huntington (2003) have written about the underreporting of non-U.S. users, we can confidently conclude that the ARPs are reaching a wide international audience.

User location aside, Rowlands (2007, 386) warns of the “danger of constructing too much meaning around such basic concepts as the article download.” Deciding on,



Figure 5. [Moses Ruiz](#) (2009) on stand, saluting  
“Sharpening the Spear: The United States’ Provincial  
Reconstruction Teams in Afghanistan”

and collecting, the right  
and most useful usage  
statistics is vital (Tenopir  
2003). Jansen (2006,  
411) cautions that “trans-  
action logs do not record  
the users’ perceptions of  
the search, cannot  
measure the underlying

information need of the searchers, and cannot gauge the searchers’ satisfaction with search results.” Asserting the same argument against overreliance on usage logs, Jamali et al. (2005, 559) observe that “log files shed no light on the reasons requests were made, users motivations for using, reaction to content, and all other qualitative aspects of use.”

These cautionary notes in the literature do not necessarily constitute an argument against usage log analysis, but rather address additional aspects that coincide with non-intrusive data collection. After warning of the traps and pitfalls, some of these same

authors describe what can be accomplished with usage log analysis. Nicholas et al. (1999, 265) observe “The fact that a page was downloaded does not mean that anyone actually wanted it”; the value of data lies in overall trends and comparisons, not snapshots. The authors suggest that a user may have been on the way to another page or was provided with an irrelevant link. They assert, however, that “Web logs enable us to follow the progress of packs of users, rather than individuals, and to read the broad outlines of their information fingerprints” (Nicholas et al. 1999, 268). It is within those broad outlines that this study proposes to find meaning.

Stated another way, measuring “full-text items downloaded does not really get us closer to use itself. We still are measuring only good indicators of use” (Peters 2002, 44). Using usage data for evaluation can be questionable if it is assumed that all usage is useful (Town 2004).

#### *Full-text downloads versus page views*

The value of a hits metric goes only so far, and raw data can be reengineered to provide more useful metrics to meet organizational goals (Nicholas et al. 2005).

Nicholas, Huntington, Jamali, Rowlands, Dobrowolski, and Tenopir. (2008) observe that the information community tends to concentrate on one metric, the full-text view or download. This measurement is perceived as the gold standard of user satisfaction indicators—a proxy for reading—providing evidence of a positive academic outcome. But not all full-text downloads are equal.

Davis and Solla (2003) and Tenopir (2003) observe that the hypertext markup language (HTML) format is preferred for on-screen browsing, finding that most users do

not like reading from the computer screen. For generating hard copies, portable document format (PDF) files are more printer-friendly (Jamali et al. 2005) and less expensive to use due to there being fewer pages (Nicholas et al. 2008). “Most e-journal users still print out articles that are judged useful – so a printing format such as PDF is popular” (Tenopir 2003, iv). Davis and Solla (2003) advise against assuming that each download is independent. As Huntington, Nicholas, and Jamali (2007, 601) found, users may download in both formats during the same session—HTML to browse and PDF to save.

Usage log studies in general indicate a preference for PDF over HTML (Jamali et al. 2005). In one study, the use of PDF downloads increased as users moved up the academic scale (Nicholas, Huntington, Jamali, Rowlands, and Fieldhouse 2009), but many downloaded and printed files will never be read, deferring the decision about relevance to a later time. Nicholas et al. (2008, 196) suggest that “people are reading as part of searching, not searching for reading.”

### *Key words*

For aiding the circulation of information to receptive users, Hartley and Kostoff (2003, 434) observe that “a wise choice of key words can increase the probability that a paper will be retrieved and read.” Valuable for both human and automatic indexing systems, a *key word* is defined as “a word or group of words...taken out of a title or of the text of a document characterizing its content and enabling its retrieval” (Gil-Leiva and Alonso-Arroyo 2007, 1175).

Hartley and Kostoff (2003) observe that key words—chosen by editors, referees, or authors—make it easier for readers to do electronic literature searches and to decide on an

article's relevancy to their interests, but inaccurate or too-specific key words can be misleading. They also find that "authors do not appear to give much thought to (key words') importance for information retrieval" (Hartley and Kostoff (2003, 435). In a 14 April 2009 interview with Dr. Patricia Shields, MPA Program Director at Texas State University, it was learned that key words are assigned to ARPs by the student authors when they grant permission to post the ARP on the eCommons Web site. Since there is no centralized key word repository from which to draw, the key words are not standardized.



Figure 6. [Lamar Collins](#) (2008)  
"Assessing Middle School  
Sex Education Programs"

### *Analysis tools*

The most popular method of measuring online usage is through vendor-supplied data (Franklin and Plum 2006) and the greater the relationship between usage data and the actual transactions, the greater the reliability of that usage data. Perceived as a user satisfaction indicator, the full-text download is widely applied by the information community in studying the use of on-line documents (Nicholas et al. 2008).

Yet, researchers using "processed data obtained from (a vendor's) proprietary software" often find their analyses constrained by the software (Nicholas et al. 2005, 251). Tenopir (2003, 10) agrees that "getting the right and consistent usage statistics



from vendors” is a problem. Additionally, Peters (2002, 43) finds that when using a vendor’s proprietary software, “customized analyses may be prohibitively expensive or delivered too late to be useful.” To provide more flexibility in designing their own analyses, without the imposition of predetermined definitions, researchers often turn to other, off-the-shelf analysis software, such as Statistical Package for Social Sciences (SPSS), which allows them to define their own variables (Jamali et al. 2005, 564).

*eCommons@Texas State University*

Texas State University’s MPA ARP usage data are supplied by the Berkeley Electronic Press (bepress<sup>10</sup>), Texas State’s electronic file repository for final ARP reports and host of the *eCommons* Web site. Usage reports from bepress<sup>TM</sup> transaction logs readily identify how often individual ARPs are downloaded as full-text PDF files, but counts alone do not shed light on what makes some ARPs more attractive, or more useful, than others.

On-line usage can be generated by instructor recommendations to students (Thelwell 2008). The download volume experienced by Texas State University ARP reports, however, far exceeds the number of Texas State MPA students. The raw download usage data indicate that many ARPs are attracting interest from well beyond the Texas State University campus.

Peters (2002, 41) identifies two things required “to make usage statistics of e-resources truly useful: broadly adopted standards and continual practice.” To meet those requirements, COUNTER (Counting Online Usage of Networked Electronic Resources)

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<sup>10</sup> bepress, all in lower-case, is a registered trademark of the Berkeley Electronic Press.

is among “several standards-making groups involved with setting consistent measures” (Franklin and Plum 2006, 28) and was launched in March 2002 as “an international initiative serving librarians, publishers and intermediaries by setting standards that facilitate the recording and reporting of online usage statistics in a consistent, credible and compatible way” (COUNTER 2009). Berkeley Electronic Press is listed in COUNTER’s online register of vendors currently compliant with its Code of Practice for Journals and Databases.

Effective implementation of usage analysis is largely dependent on the quality of the data. Data cleaning is usually needed before analysis (Chen and Liu 2004; Spiliopoulou et al. 2003), because errors made in data preparation “may make the data useless for further analysis” (Spiliopoulou et al. 2003, 173). Huntington, Nicholas, and Jamali (2008) caution that people aren’t the only ones searching on the Web; they find robots actively searching, too.

It is generally desirable to exclude robotic activity from usage logs in the scholarly environment because such activity does not represent actual human activity. From the beginning of the Web, the voluntary Robots Exclusion Protocol enabled Web site administrators to identify areas that were off-limits to visiting robots. However, few robots adhere to this protocol. Not only is much robot activity undeclared, many robots deliberately employ measures designed to mask their activity; robot activity is estimated by Huntington et al. (2008) to account for two-fifths of all Web activity. In response to this threat, bepress<sup>TM</sup> states on its Web site that its data-cleansing efforts go further than COUNTER’s requirements, performing “sophisticated heuristics to automatically

discover unknown, unidentifiable, and disguised robots, automated processes, crawlers, and spam-bots” (Berkeley Electronic Press 2009).

While robot activity threatens to inflate usage measurements if left unidentified, caching can have the opposite effect. Generally referring to the act of storing things for future use, in the parlance of computer science *caching* refers more specifically to the temporary storage of data from where it can be quickly retrieved to avoid the slower, and often more costly, process of reloading from its permanent storage site. On the downside, “Caching prevents the registration of all requests (downloads) by the server and thus blurs the picture of user behavior” (Spiliopoulou et al. 2003, 189). Jansen (2006, 420) advises research designers to be aware of the significant measurement inaccuracies created by caching which, as Jamali et al. (2005) found, can result in 35% to 55% of downloads going unrecorded due to caching by the user’s computer. This can be particularly troublesome with machines located in libraries, computer labs, or other common-use areas.

The potential for caching to cause under-reporting of ARP usage rates by bepress<sup>TM</sup> is largely avoided at Texas State University. Dr. Sam Khosh-khui, Serials Cataloger Librarian/eCommons Manager at Texas State’s Albert B. Alkek Library, explained in a 14 April 2009, interview that caching occurs only during a single session while a user is logged on to eCommons.

### **Conceptual Framework–Description of Downloads**

This paper has two empirical research purposes. The first purpose is to describe ARP Internet usage by linking usage to public administration research criteria developed

in past studies and to search optimization criteria. Second, the factors that contribute (or explain) downloads are explored. Using criteria developed in the literature and information on search optimization, a set of working hypotheses was developed. The next section provides the groundwork for the first purpose by discussing the literature of public administration research and search optimization. This literature is then used to develop the descriptive categories employed in subsequent analysis.

As a conceptual framework for addressing “what” questions associated with a descriptive research purpose, [Shields](#) (1998) presents descriptive categories as a tool for organizing multifaceted situations into key components. Beck (1993), [Nall](#) (1994), Almaguel (1997), Gute (1999), and Ilo (2005) took this approach in their respective content analyses of ARPs and other graduate-level research. A condensed display of selected results from the work of Almaguel (1997) and Ilo (2005) on ARPs at Southwest Texas State University/Texas State University is presented in Appendix B.<sup>11</sup>

Used as a starting point, Ilo’s (2005) approach to ARP categories was modified to distinguish between public administration- and technical-related categories. Discussed more fully below, the five public administration-related categories are: (1) level of government/sector, (2) topical categories, (3) research purpose, (4) research method, and (5) statistical technique. These are followed by two technical-related categories: general characteristics and search engine optimizing.

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<sup>11</sup> Effective September 2003, Southwest Texas State University’s name changed to Texas State University-San Marcos. Hereafter, this paper uses the Texas State name in reference to all periods.

### *Public administration-related categories*

Public administration literature falls into some more-or-less natural categories. For example, the United States has an intergovernmental system that takes into account the level of government (federal, state, and local). Public administration also often encompasses nonprofit entities and other types or levels of government. Common topical categories include policy, management, and human resources. At Texas State, research purposes—such as exploration, gauging, or explanation—drive subsequent decisions in the building of conceptual frameworks used in the conduct of the research ([Shields and Tajalli 2006](#)). Within a chosen conceptual framework, the researcher identifies what research methods (e.g., surveys, interviews, document analysis) will be the most appropriate, as well as what statistical methods will be employed.

- Level of government/sector. In their review of public administration research articles published in *Public Administration Review* from 1940 through 1984, Stallings and Ferris (1988, 583) found the “major focus of research in PAR over the entire 45-year period has been at the federal level.” Local government had never been a major research focus, though it finally received some modest attention in the 1960s. Research on state government was also less than robust, hitting a relatively low, and unrepeated, peak in the 1950s.

Stallings and Ferris (1998) suggest that a possible explanation for dominance of federal government-related articles in *Public Administration Review* may lie in the competition for research funding, though it is doubtful that funding is a deciding factor with student ARPs in this category.

Very different results were obtained when Beck (1993) examined Texas State MPA ARPs completed in 1987 through 1991, with local government taking the spotlight at 39%, state government coming in second with 22%, and federal government with only a modest 6%.

Nall (1994, 79) found state government as the leading area of interest for 39% of professional reports at the University of Texas' LBJ School of Public Affairs from 1988 through 1990. Later, Almaguel (1997, 54) found state government topics dominating ARP topics with a 46% share for the period 1992 through 1996.



Figure 7. [Rosalinda Moore](#) (2009)  
“Employers’ Assessment of Texas State University MPA Program”

For the single year of 1997, Gute’s (1999) examination of ARPs found state government topics maintaining a solid lead in research focus at the LBJ School with 41%, while dropping to under 14% at Texas State in that year. Gute (1999) also observed that in 1997, local government topics accounted for 59% of Texas State University ARPs. Over the seven-year period from 1999 through 2005, however, Ilo (2005) calculated a dominating 57% share of ARP research focused on state government.

- Topical categories. The professional code of the American Society for Public Administration enjoins members to serve the public interest. Morgan (2001, 153) asserts that “the public interest cannot be defined without taking into account the private interests of subjects,” then asks “How do we know the public interest when we see it?”

Lewis (2006, 695) finds that the difficulty in pinning “down the idea of public interest is what makes it so intellectually interesting and professionally compelling.”

“In the process of knowledge discovery from data, the data preparation phase precedes data analysis” (Spiliopoulou, et al. 2003, 172). In their comparison of dissertation research in public administration to similar research in other fields, Adams and White (1994, 568) considered the importance of “topic” as a quality indicator, though they acknowledge the inherent subjectivity in such a criterion. A decade earlier, McCurdy and Cleary (1984, 50) dealt with this subjectivity by asking “whether the general subject warranted at least a few pages of treatment in leading textbooks on public administration.”

The idea of importance addressed by McCurdy and Cleary (1984) and Adams and White (1994) appears inextricably linked to the public interest when considering the download rates of MPA ARPs, it is the public—practitioners and well as academics—who indicate their level of interest through the record of their downloads. In its 2008 Standards for Professional Masters Degree Programs (Sec 4.21), the National Association of Schools of Public Affairs and Administration (NASPAA) promulgates a list of common curriculum components, “designed to produce professionals capable of intelligent, creative analysis and communication, and action in public service”:

Management of Public Service Organizations

- Human resources
- Budgeting and financial processes
- Information management, technology applications, and policy

Application of Quantitative and Qualitative Techniques of Analysis

- Policy and program formulation, implementation and evaluation
- Decision-making and problem-solving

#### Understanding of the Public Policy and Organizational Environment

- Political and legal institutions and processes
- Economic and social institutions and processes
- Organization and management concepts and behavior

A demonstration of how the Texas State MPA program curriculum encompasses NASPAA's curriculum standards is displayed in Texas State's (2009, tables 4.2a and 4.2b) self-study report to NASPAA. The topical categories most frequently used by the authors of 1999-2005 ARPs, as identified by Ilo (2005), are included in NASPAA's common curriculum components and were modified for use here.

1. Policy making/policy analysis. In their study of what factors lead to longevity on the job for city managers, Hassett and Watson (2002, 623) observed that, in addition to managing daily operations, "city managers also operate in a political context by closely working with and advising elected officials on policy matters." "These administrative activities support a council's policy-making responsibilities and problem-solving capacities. Over time, local government professionals have effectively integrated this influential policy role with the analytical, politically neutral orientation of their profession" (Nalbandian 2001, 63). "Because they are involved in revenue as well as expenditure policy development, local administrators must understand basic principles of public finance and tax policy" (NASPAA 2009, under "Local Government Management Education, Substantive Knowledge, para. 14"). NASPAA's 2009 curriculum guidelines distinguish between policy making and policy analysis in the design of educational programs, but they are combined in this study for the sake of brevity.

2. Management/administration – "Within the local government organization, (local government administrators) must provide staff leadership, design and implement



change, structure and coordinate the activities of diverse departments – some of which may have elected heads or appointed citizen advisory boards – improve productivity, and set the tone for high standards of performance among staff. They also link the organization to its elected officials, the public, and the array of organizations and agencies with which local governments must interact” (NASPAA 2009, under “Local Government Management Education, Substantive Knowledge, para. 1”). Chapman (2008, S126) further cautions “The effects of decisions must be transparent, both to decision makers and to residents.”

3. Human resources/social services – [Brad Sinclair](#) (2005, 19) observed that “human resources are a factor in managing for a city manager. Human resource managers or directors report to him on status of personnel, training, and employment issues.” Indeed, “(a)s personnel practices can have important implications, administrators should be aware of the various structures and practices of local government personnel administration” (NASPAA 2009, under “Local Government Management Education, Substantive Knowledge, para. 13”).

4. Program evaluation – “Local administrators must be able to review and assess quickly large volumes of information and to structure and disseminate the information in a way that is comprehensible and usable in policy deliberations by local officials and community residents” (NASPAA 2009, under “Local Government Management Education, Management Skills, para. 7”). In clear satisfaction of that requirement, the program evaluations conducted by [Emilia Zarate](#) (2007) and [Bryce Kessler](#) (2005) were Texas State’s top two ARPs in terms of open access downloads as of 18 August 2009, the

measurement date used in this study.

5. Technology application – Newcomer and Caudle (1991, 379) assert the information system user population in the public sector extends beyond local agency management to “include the legislature, central management and oversight agencies, suppliers, the business community, the media, program clients, and the general public.” NASPAA’s (2009, under “Local Government Management Education, Management Skills, para. 6”) curriculum guidelines call for “local government administrators...to understand emerging trends in electronic systems used to compile, store, and analyze information and data. They need to be sufficiently



Figure 8. [Dustin McLemore](#) (2008)

“A Model Records Management System for Texas Public Utilities: An Information Science Tool for Public Managers”

expert in the use of such systems to understand when and how to manage such technologies, interpret the results of their use, and optimize the community's benefit from their use.” [Abigail Gillfillan](#) (2008) aptly demonstrated the foregoing qualities in her use of geographic information systems, and [Dustin McLemore](#)’s (2008) ARP on records management is another example.

6. Urban economics – “Administrators need to understand the economic system and the economic dimensions of land use and development, housing, poverty, employment, transportation, and environmental protection” (NASPAA 2009, under

“Local Government Management Education, Substantive Knowledge, para. 11”).

Chapman (2008, S123) asserts economic growth depends on public infrastructure “and therefore fiscal sustainability depends on its presence and growth.” A practitioner himself, [William Tanous](#) (2007) addressed these issues in his benefit-cost analysis of an urban conference center.

- Research purposes. In an examination of abstracts for 142 public administration-related doctoral research projects, McCurdy and Cleary (1984, 52) found “a substantial number of projects...appeared to have no purpose at all.” More recently, in a comparison of master’s level research projects in public administration and public affairs, Gute (1999) tabulated the research purposes identified in all of the projects at Texas State University, but found that the research purpose could not be determined for a third of the projects at two other major universities. It is expected that most, if not all, ARPs examined here clearly state their research purpose. At Texas State University-San Marcos, all ARP students must adopt and pursue at least one of the following five research purposes to help guide students’ thinking in what they intend to accomplish and to provide structure to their projects (Shields and Tajalli 2006).

1. Exploration – Applies working hypotheses in answering what, when, where, why, who, and how questions (Shields and Tajalli 2006). Babbie (2001, 91) states that “exploration typically occurs when a researcher examines a new interest or when the subject of study itself is relatively new.” Exploratory research is quite common among Texas State ARPs, accounting for 41% of those ARPs submitted between 1999 and 2005 (Ilo 2005, 46). See also appendix B.

2. Description – “A major purpose of many social scientific studies is to describe situations and events. The researcher observes and then describes what is observed” (Babbie 2001, 93). Linked to a conceptual framework of descriptive categories by Shields and Tajalli (2006, 323) the research purpose pursues “what” questions in describing attributes of a subject.

3. Gauging – This approach is used to gauge or determine how closely a process or policy comes to meeting a practical ideal or standard (Shields and Tajalli 2006). It is linked with the practical ideal type framework and, unlike a pure ideal type, the practical ideal type is itself provisional. When a process fails to meet the ideal or standard, recommendations for improvement are easy to formulate and justify. The practical ideal simply provides a benchmark to facilitate gauging and “a point of departure for policy recommendations” (Shields 1998, 219). Ilo (2005) found that 33% of the 1999-2005 Texas State ARPs used gauging as their primary research purpose. See also appendix B.

4. Decision making – Longstanding techniques of operations research, such as cost-benefit and cost-effectiveness analyses, are used in order to facilitate optimal decisions or identify the best approach (Shields 1998; [Shields 2003](#)).

5. Explanation – McCurdy and Cleary (1984, 53) observed that “Doctoral students who deal with a major topic in public administration are more likely to test theories and causal propositions than students who deal with peripheral topics.” For designing and performing such tests, explanatory research develops and applies formal hypotheses to answer the “why” questions and together “are the mainstay of social and policy science” (Shields and Tajalli 2006, 328).

- Research methods. With varying degrees of specificity among types of research methods employed by authors of master's-level ARPs, Beck (1993), Almaguel (1997), Gute (1999), and Ilo (2005) all reported on the frequency of their use. Typical research methods include the following (Shields and Tajalli 2006), but ARPs often incorporate more than one research method.

1. Surveys – Babbie (2001, 268)

describes self-administered mail survey questionnaires as cheap and quick, “important (considerations) for an unfunded student wishing to undertake a survey for a term paper or thesis.” Surveys are the most frequently used research technique employed by Texas State ARPs. Ilo (2005, 48) reported that 51% of the 1999-2005 Texas State ARPs used survey research. See also appendix B.



Figure 9. [Justin Marlin](#) (2008)

“Bicycle Transportation Issues:  
Describing the Attitudes and Opinions of  
Cyclists in Austin, Texas”

2. Interviews – “An alternative method of collecting survey data” (Babbie 2001, 258), interviews employ direct, one-on-one communication. This method allows for clarifying questions and instructions, generally yielding increased response rates. The interviewer’s ability to observe pertinent characteristics of the interviewee’s person and surroundings can also contribute to more representative results. A dramatic increase in the application of interviews in Texas State ARPs was recorded by Ilo (2005) with 34%

of the 1999-2005 ARPs employing this method, compared to only .8% of the 1992-1996 ARPs. See also appendix B.

3. Focus groups – guided discussions which “frequently bring out aspects of the topic that would not have been anticipated by the researcher and would not have emerged from interviews with individuals” (Babbie 2001, 294). “A skilled moderator needs to direct the groups to keep discussions on track” (Tenopir 2003, 9). Focus groups are used infrequently in Texas State ARPs, with just 6% of the 1999-2005 ARPs and 3.2% of the 1992-1996 ARPs using this method (Ilo 2005). See also appendix B.

4. Case study – Yin (1994, 13) defines the case study method as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” Babbie (2001, 285) asserts “The limitation of attention to a particular instance of something is the essential characteristic of the case study.” A case study is particularly useful for pursuing the “how” questions that are associated with a gauging research purpose (Shields and Tajalli 2006).

5. Document analysis – is frequently used in conjunction with case studies “to corroborate and augment evidence from other sources” (Yin 1994, 81). Letters, memos, meeting minutes, proposals, and newspaper articles are just a few examples of documents that can be useful for verifying such things as names, titles, places, and dates.

6. Content analysis – is an unobtrusive “study of recorded human communications” for the purpose of describing and making inferences about characteristics and consequences (Babbie 2001, 304). Described by Neuendorf (2002, 1) as “perhaps the

fastest-growing technique in quantitative research,” it is “a systematic, objective, quantitative analysis of message characteristics.” The use of content analysis in Texas State ARPs experienced considerable increase in more recent years with 30% of the 1999-2005 ARPs using this method, compared to just 2.4% of the 1992-1996 ARPs (Ilo 2005). See also appendix B.

7. Analysis of existing aggregated data – subject to concerns with validity (matching the researcher’s area of interest) and reliability (accuracy), the expense of data collection can be avoided by turning to generally abundant public and commercial sources of relevant social data. Just a few examples of data sources at the federal government level include the Bureaus of the Census, Labor Statistics, and Transportation Statistics; the Department of Education; and the Federal Bureau of Investigation. Data collections from state and local government agencies and from international organizations are also readily available (Babbie 2001).

8. Operations research, including cost-benefit and cost effectiveness analyses, is seldom able to apply “straightforward economic accounting” (Babbie 2001, 337) in social research settings. The research must be designed to measure the specified outcome as an indication of success by those responsible for the program, such as county commissioners in the case of [James Quintero](#)’s (2007) paper on regional economic development.

- Statistical techniques. ARPs make use of a wide variety of statistical techniques, as observed and reported by Beck (1993), Nall (1994), Almaguel (1997), Gute (1999), and Ilo (2005). Before defining the specific characteristics and applications of the many individual techniques available, Babbie (2001) divides his discussion of statistics in

social research into two groups, descriptive and inferential. Descriptive statistics are useful for reporting central tendency and dispersion. Percentages and frequency distributions are also considered descriptive statistics. Inferential statistics are “concerned with generalizing the results to a wider context based on statistical probability” (Yu and Apps 2000, 327). Examples of inferential statistics include the *t*-test, analysis of variance, chi-square test, and multivariate regression.

As the purpose of this study is focused on ARP download rates (i.e., what users are reading, rather than what the authors wrote), consideration is given to Town’s (2004, 192) observations on “e-measures” when he questions the significance of what is being measured. For this study, then, categorizing the statistical techniques used as either descriptive or multivariate (inferential) is considered to be the most appropriate approach.

#### *Technical-related categories*

Aside from classifying the ARPs using public administration research criteria, downloads are influenced by technical Web- or market-related factors. These have been divided into two categories, general characteristics and search engine optimizing. General characteristics, such as the length of time the project has been on the Web or the size of the bibliography, are intrinsic to the individual project. Search engine optimization, on the other hand, has to do with efforts by the list administrator to enhance downloading activity.

- General characteristics.

1. Length of time on the Web. Tenopir (2003) found that most journal article readings occur within the first year of publication. Hence, in absolute terms, the longer a



paper is included in a digital commons, the more downloads they can accumulate. Of course, the download rate may be highest at first. Anderson, Sack, Krauss, and O’Keefe (2001) observed a decline in usage rates from initial publication throughout the life of an article, using the term *decay curve*, but found no apparent difference in these decay curves between print and on-line publications.

2. Title construction. It is difficult to measure humor objectively, yet with a panel of eight psychology graduate students acting as judges, Sagi and Yechiam (2008) found that the assignment of exceptionally amusing titles to scholarly articles was associated with a one-third reduction in the number of citations. Various interpretations of this finding include the possibility that humor gives the impression of non-serious subject matter or, more simply, that titles with fewer professional keywords make those articles more difficult to locate using article databases. “It is important to get the subject into the title” (Royster 2007, 8). Hartley (2005) asserts that academic articles generally bear titles chosen to meet two objectives: to attract and to inform. Ambiguous titles can be clarified by subtitles, and colons help in creating titles that are successful in attracting and informing.

3. Award winner. Borins (2008, 201) observes that “innovations awards programs are an effective way of finding out what is happening at the leading edge of governmental initiatives and problem solving.” A challenge associated with doing research based on innovation awards, however, “is that the data deal with the innovation itself, but not with the population in which an innovation occurs and through which the innovation might spread” (Borins 2008, 203). Five Texas State ARPs have won the Pi

Alpha Alpha award for best papers nationally. These papers, along with other papers that have won regional awards, are identified as award winners on the Texas State MPA web page, <http://uweb.txstate.edu/~ps07/documents/awards.pdf>. Such recognition and exposure may influence downloads.

4. Page volume. In a content analysis of Texas State University ARPs submitted from 1987 through 1991, Beck (1993) found an upward trend in the average number of pages over the five-year period and a mean average of just under 91 pages overall. Though not reported in annual increments, the trend of increasing page counts appeared to have continued when Almaguel's (1997) content analysis found that the mean average page volume had increased to 96 pages for the five-year period of 1992 through 1996.



Figure 10.  
[Martha Castex-Tatum](#) (1997)  
1<sup>st</sup> African-American  
City Council Member  
in San Marcos, TX

“Violence in the Workplace: An Assessment of HEB Distribution Center's Security Procedures”

Reporting on 1997 ARPs only, Gute (1999) calculated a mean average page volume of just over 88 pages, roughly an 8% decline. By themselves, of course, one year's results do not reverse a trend; yet Ilo (2005) reported a mean of 78.5 pages for the period 1999 through 2005, the lowest yet.

That the volume of pages was reported in all four previous content analyses of Texas State MPA ARPs, as well as in Nall's (1994, 41) content analysis of professional reports at the LBJ School of Public Affairs, seems to indicate at least some interest in that data point, but the objective here is to identify any

existing relationship between page volume and online downloads. Visitors to eCommons @ Texas State University are not provided with information on the number of pages contained in an ARP's PDF file until they have already successfully downloaded it, and HTML files are not available for browsing. If a relationship between page volume and downloads exists, it may be a function of more content for search engines to take into account, thereby increasing the probability of a hit.

5. Bibliography size. Carlin (2009, 161-162) observes that "Bibliographic reference lists are important constitutive features of academic papers," generally treated as "resources rather than...as topics of analysis." When uploaded to the Berkeley Electronic Press repository, ARPs become linked as a citation to each unique entry in their bibliography through Google Scholar. Google Scholar is a database system available to everyone with Internet access, unlike other databases that require affiliation with a university library, thereby enhancing Web presence.

- Search engine optimizing. Distinguished from search engine marketing, where entities pay for exposure, search engine optimizing employs various techniques to increase Web presence through such things as key words, citations, and links, all of which may influence the likelihood of an ARP appearing on a list of Internet search results. Nicholas et al. (2005) observe that automated searches and citations are now among the basic tools used for reading scholarly literature.

1. Wikipedia references. Despite a belief in its unworthiness among some academics (Patterson 2009), Wikipedia is playing an increasing role in information distribution. ARPs are meant to be useful to public administration practitioners as well as

scholars, and Wikipedia is available to everyone online. ARPs have been included in the reference section of some terms in Wikipedia. For example, Moses Ruiz's paper on Provincial Reconstruction teams in Afghanistan is found as a reference the Wikipedia term "Provincial Reconstruction Teams."

2. Google Scholar citations. Borins (2008, 199) finds that "(a)n increasingly popular measure of the academic influence of a research study is its citation count, now instantly produced online by Google Scholar." Quoting from Google Scholar's Web site, <http://scholar.google.com> (with emphasis added):

Google Scholar aims to sort articles the way researchers do, weighing the full text of each article, the author, the publication in which the article appears, and *how often the piece has been cited in other scholarly literature*. The most relevant results will always appear on the first page.

Not everyone sees the value of citation counts as that straightforward, however; as Jamali et al. (2005, 555) assert that "authors do not cite everything they read and not every reader is an author."

3. AltaVista-identified links. Rowlands (2007, 381) asserts that research areas with low numbers of topically relevant materials "are best searched by linking (citation chaining from known documents)." Subject matter experts have learned this and routinely use links to view related articles, though the effective use of links by students is less clear (Tenopir 2003).

**Table 2.2. Descriptive conceptual framework linked to the literature**

Public administration-related categories	Sources
Level of government/sector <ul style="list-style-type: none"> <li>• Federal</li> <li>• State</li> <li>• Local/regional</li> <li>• Non-profit</li> </ul>	Almaguel 1997      Stallings & Ferris 1988 Beck 1993 Gute 1999 Ilo 2005 Nall 1994
Topical categories <ul style="list-style-type: none"> <li>• Policymaking/policy analysis</li> <li>• Management/administration</li> <li>• Human resources/social services</li> <li>• Program evaluation</li> <li>• Technology applications</li> <li>• Urban economics</li> </ul>	Adams & White 1994 Ilo 2005 Lewis 2006 McCurdy & Cleary 1984 Morgan 2001 Spiliopoulou et al. 2003
Research purpose <ul style="list-style-type: none"> <li>• Exploration</li> <li>• Descriptive</li> <li>• Gauging</li> <li>• Decision Making</li> <li>• Explanation/Prediction</li> </ul>	Babbie 2001 Gute 1999 McCurdy & Cleary 1984 Shields 1998 Shields 2003 Shields & Tajalli 2006
Research method <ul style="list-style-type: none"> <li>• Interview</li> <li>• Focus group</li> <li>• Document analysis</li> <li>• Case study</li> <li>• Survey</li> <li>• Content analysis</li> <li>• Existing aggregated data</li> <li>• Operations research</li> </ul>	Almaguel 1997 Babbie 2001 Beck 1993 Gute 1999 Ilo 2005 Shields & Tajalli 2006 Tenopir 2003 Yin 1994
Statistical technique <ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Multivariate</li> </ul>	Almaguel 1997      Ilo 2005 Babbie 2001      Nall 1994 Beck 1993      Town 2004 Gute 1999
Technical-related categories	Sources
General characteristics <ul style="list-style-type: none"> <li>• Length of time on Web</li> <li>• Title construction</li> <li>• Award winner</li> <li>• Page volume</li> <li>• Bibliography size</li> </ul>	Almaguel 1997      Hartley 2005 Anderson et al. 2001      Ilo 2005 Beck 1993      Nall 1994 Borins 2008      Royster 2007 Carlin 2009      Sagi & Yechiam 2008 Gute 1999      Tenopir 2003
Search engine optimizing <ul style="list-style-type: none"> <li>• Wikipedia references</li> <li>• Google Scholar citations</li> <li>• AltaVista-identified links</li> </ul>	Borins 2008      Rowlands 2007 Jamali et al. 2005      Tenopir 2003 Nicholas et al. 2005 Patterson 2009

## **Conceptual Framework–Working Hypotheses**

The second purpose of this paper explores the factors that contribute to Texas State ARP downloads. “Working hypotheses formulate a belief about the direction of inquiry, but not necessarily its ultimate destination” (Shields 1998, 215).

Eight working hypotheses are proposed to discover which factors contribute to the likelihood that an online ARP will be downloaded. Discussion of these hypotheses is integrated with a discussion of the corresponding descriptive categories from which they were derived, where applicable.

### *Level of government/sector*

For insight into what influences ARP students’ research focus, Shields (1998, 205) offers “Interest and experience are usually the source of the research topic. Since most ARP students have full time jobs in the public sector, their research question often emerges from a work-related issue.” Given the proximity of Texas State University to the state capital, it is not surprising so many ARPs have a Texas state government focus. Texas State University may fill a void in research about Texas state government. Texas has an economy and population that rivals many countries. Research on state government is limited, and Texas is a potentially large market for this scholarship.

Hence:

WH1: Research focused on state government positively affects the number of full-text downloads for ARPs.

### *Research purpose*

[Shields and Tajalli](#) (2005, 33) assert that the application of formal hypotheses to answer the “why” questions forms “the mainstay of social and policy science.” As it is anticipated that the users of ARPs are most interested in issues of causation, or why things are the way they are, therefore:

WH2: Use of an explanatory research purpose positively affects the number of full-text downloads for ARPs.

### *Research method*

Babbie (2001, 46) writes of the importance of “imagining how others feel and how they might behave in certain circumstances,” referring to “what (George Herbert) Mead called the *generalized other*.” By way of a definition for that concept, Shavelson and Webb (1991, 1) describe generalizability theory as “a statistical theory about the dependability of behavioral measurements.”

The wide use of a research method by ARP authors does not necessarily lead to an assumption that online readers will be more likely to download those same ARPs, but as Babbie (2001, 268) asserts, “Surveys are particularly useful in describing the characteristics of a large population. A carefully selected probability sample in combination with a standardized questionnaire offers the possibility for making refined descriptive assertions.” Therefore, it is the generalizable nature of survey results that leads to:

WH3: Use of surveys as a research method positively affects the number of full-text downloads for ARPs.

### *Length of time on the Web*

Whereas Anderson et al. (2001, 3) note length of time on the Web may reduce the rate of downloads, the absolute number of downloads should increase (albeit more slowly) as time increases. Further, contrary to expectations in the literature, a visual examination of monthly download rates for individual ARPs from August 2005 through August 2009 finds fairly consistent usage over time. In the April 14, 2009, interview on caching discussed earlier, Dr. Khosh-khui explained that flat-line usage rates indicate randomness in searching and downloading. One would anticipate a relationship between length of time on the Web and total downloads. Hence, one would expect:

WH4: Length of time available on the Web positively affects the number of full-text downloads for ARPs.

### *Title construction*

In a study of the usefulness of two-part titles, students were found to prefer titles with colons while the views of academics were mixed (Hartley 2007, 588). Measuring degrees of humor, as described by Sagi and Yechiam (2008), is beyond the reach of this study, but the identification of two-part versus one-part title construction is a straightforward process. Therefore, if the value of two-part titles applies to this population of ARPs, it may be expected that:

WH5: Two-part title construction positively affects the number of full-text downloads for ARPs.



### *Award winner*

Award-winning ARPs are identified as such on the MPA Program Director's university Web site: <http://uweb.txstate.edu/~ps07/documents/awards.pdf>. Additionally, recipients of the National Association of Schools of Public Affairs and Administration's Pi Alpha Alpha award are listed at:

[http://www.naspaa.org/initiatives/paa/manuscriptawardwinner](http://www.naspaa.org/initiatives/paa/manuscriptawardwinner.asp)  
[.asp](#). No direct reference was found in the literature to

connect the winning of awards to download volume, though Borins (2008) did assert awards programs' effectiveness in communicating new developments. Accepting that downloading activity is a measure of interest, it seems to follow that the apparent quality of award-winning ARPs, and their identification as such, would contribute to generating an increased number of downloads. It is then expected that:

WH6: Winning awards positively affects the  
number of full-text downloads for ARPs.

### *Bibliography size*

Without an option for HTML viewing, an ARP's bibliography is not seen by the online user until after the PDF file has been downloaded and subsequently recorded, making a direct, causal relationship between bibliography size and download counts unlikely. It is speculated here, however, that large bibliographies extend their performance as resources, as described by Carlin (2009), through their links to Google Scholar and indirectly influence online users to download ARPs, thus:



Figure 11.  
[Kevin Baum](#) (1997)  
Pi Alpha Alpha Award  
winner

“Group Dynamics and  
Power Structures:  
Toward a Greater  
Understanding of the  
Line-Staff Relationship  
Within the Austin Fire  
Department”

WH7: Bibliography size has a positive relationship with the number of full-text downloads for ARPs.

*Search engine optimizing*

Taking the observation by Nicholas et al. (2005) that automated searches and citations are basic tools for accessing scholarly literature, it is expected that:

WH8: Search engine optimizing positively affects the number of full-text downloads for ARPs.

The following factors are three facets of such optimization.

- References. Wikipedia describes itself as “a multilingual, web-based, free-content encyclopedia project based mostly on anonymous contributions. Wikipedia’s articles provide links to guide the user to related pages with additional information (and) most of the articles can be edited by anyone with access to the internet”  
<http://en.wikipedia.org/wiki/Wikipedia:About>.

A preliminary look at the Texas State ARP download data found that of the 100 most-downloaded ARPs on 18 August 2009 the top two and a total of thirteen were referenced in Wikipedia. Though some academics dismiss Wikipedia as unworthy (Patterson 2009, 356), speculation about whether this Web site is assisting information seekers in finding useful Texas State ARPs (and subsequently download them) leads to:

WH8a: Reference in Wikipedia positively affects the number of full-text downloads for ARPs.

- Citations. Thelwell (2008) found that the level of relationship between citations and online usage rates for scholarly works can vary greatly. Nevertheless, current ARP students at Texas State are encouraged to cite other ARPs in their bibliography. ARPs often deal with similar topics such as water policy in Texas, human resource management

practices, and criminal justice policy in Texas. Students include other ARPs on related topics as a way to alert the readers to useful scholarship. Although Google Scholar keeps its Web page algorithm secret, it appears that references with citations are located earlier in a Google Scholar search page. Hence, one would expect:

WH8b: ARPs that are cited by other scholarly works are more likely to be downloaded.

- Links. With Tenopir's (2003) observation that subject matter experts routinely use links to view related articles, it seems to follow that the more links an article has, the more it will be viewed. AltaVista.com provides data on existing links to various sites and individual scholarly works, including applied research projects, thus:

WH8c: Links to other works positively affect the number of full-text downloads for ARPs.



Figure 12. [William Powell](#) (2009)

“Identifying Land Use/Land Cover (LULC) using National Agriculture Imagery Program (NAIP) Data as a Hydrologic Model Input for Local Flood Plain Management”

**Table 2.3. Working hypotheses conceptual framework linked to the literature**

Public administration-related working hypotheses	Sources
WH1: Research focused on state government positively affects the number of full-text downloads for ARPs.	Shields 1998
WH2: Use of an explanatory research purpose positively affects the number of full-text downloads for ARPs.	Shields & Tajalli 2006
WH3: Use of surveys as a research method positively affects the number of full-text downloads for ARPs.	Babbie 2001 Shavelson & Webb 1991
Technical-related working hypotheses	Sources
WH4: Length of time available on the Web positively affects the number of full-text downloads for ARPs.	Anderson et al. 2001 Khosh-khui 2009 Tenopir 2003
WH5: Two-part title construction positively affects the number of full-text downloads for ARPs.	Hartley 2007 Sagi & Yechiam 2008
WH6: Winning awards positively affects the number of full-text downloads for ARPs.	Borins 2008
WH7: Bibliography size has a positive relationship with the number of full-text downloads for ARPs.	Carlin 2009
WH8: Search engine optimizing positively affects the number of full-text downloads for ARPs. WH8a: Reference in Wikipedia positively affects the number of full-text downloads for ARPs. WH8b: ARPs that are cited by other scholarly works are more likely to be downloaded. WH8c: Links to other works positively affect the number of full-text downloads for ARPs.	Nicholas et al. 2005 Patterson 2009 Tenopir 2003 Thelwell 2008

## Chapter Summary

This chapter reviewed the debate among scholars over what constitutes useful research in public administration. It then examined the literature on usage log analysis for online scholarly works, external factors that can distort the data, and key elements that indicate the types of use most worth measuring. The discovery of public interest in public administration literature at large, and in MPA applied research projects at Texas

State University, was linked to usage log analysis and the tools used for that analysis were discussed.

Finally, the chapter described two conceptual frameworks used in advancing this study: descriptive categories and working hypotheses. Seven descriptive categories are linked to the literature, sorting multiple subcomponents into logical groups to add focus to the process of determining what factors contribute to high download rates. Eight working hypotheses are then proposed for discovering the extent to which certain identified factors contribute to the likelihood that an online ARP will be downloaded.

## **Chapter 3. Methodology**

### **Chapter Purpose**

The purpose of this chapter is to describe the methods used to collect data and to ascertain what factors contribute to downloads of Texas State MPA ARPs. A variety of methods were used, including content analysis of the papers themselves.

Download information for each paper was provided by the Berkeley Electronic Press. Information on citations and Wikipedia references was obtained through systematic Web searches. The data were operationalized through a content analysis coding sheet. This chapter concludes with a discussion of the statistics used in the analysis.

### **The Data Set**

The Texas State MPA program began in 1973 and, as of August 2009, there have been 806 graduates, each of whom wrote an ARP. In 2003, the MPA program began collecting the ARPs electronically. In the fall semester of 2005, Margaret Vaverek, a Texas State reference librarian, approached the MPA Director, Dr. Patricia Shields, and asked whether the MPA program would be interested in posting their ARPs to the new Texas State open-access digital repository.

The first paper to be posted to the eCommons@Texas State University site was [Danny Batts'](#) (2005) ARP, "Attitudes and Perceptions of County Legislators Regarding Their Influence over the Formulation and Implementation of Environmental Policy." During that semester, the library posted electronic ARPs that had been part of an existing

Department of Political Science Web site. Over the course of two summers, many ARPs written in the 1990s, 1980s, and even 1970s were scanned and posted to the ARP eCommons Web site. In addition, ARPs of graduates in 2006 through 2009 have been posted and, as of 31 October 2009, there are 294 ARPs available online. Since 2006, approximately 90% of all ARPs written by MPA graduate students have been posted to the eCommons site. For purposes of this study, the 290 ARPs posted as of 18 August 2009 were used.

Teaching methods and expectations in the Texas State MPA program have evolved over the years, resulting in a demonstrable difference in quality and structure between older and more recent ARPs. Publications by Drs. Tajalli and Shields (Shields 1998, Shields 2002, and Shields and Tajalli

2006) track these evolving expectations and requirements.<sup>12</sup> Additionally, the set of ARPs now on the eCommons site were posted without a coherent order. Papers from 2005, for example, have been up longer than those from 2000 or 1998, but papers written



Figure 13. [Lyndon B. Johnson](#), circa 1927

36<sup>th</sup> President of the United States  
and  
Texas State University's  
most-cited alumnus

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<sup>12</sup> Students are now expected to use the *Step by Step* notebook method (Shields 2006a) when writing their literature review. Beginning around 2002, students were also required to develop conceptual frameworks and operationalization tables.

in 1997 have been up longer than those written in 2008. Hence, there is significant spurious variation.

Given these circumstances, the analysis is performed on different, overlapping reference groups. First, the entire set of ARPs posted to the Web site are examined (n=290). Second, a smaller, more recent set from 2006-2008 is studied (n=71). Unlike the total population of ARPs, these papers were uploaded along a consistent time line (2006 papers uploaded before 2007 or 2008). The teaching method employed was also more consistent.

### **Content Analysis**

“Content analysis is essentially a coding operation. Coding is the process of transforming raw data into a standardized form” (Babbie 2001, 309). This study employed content analysis to MPA Program ARPs available at eCommons@Texas State University, <http://ecommons.txstate.edu/arp/>. A coding sheet, displayed as table 3.1, was completed for each of the 290 ARPs in the study population. The coding sheet was developed from the conceptual framework developed in chapter two.

Each new ARP posting to the Web is permanently assigned a consecutively higher number in the series. As such, variable 1 in table 3.1, the eCommons@Texas State University ARP serial number, is the best available indicator of the length of time an individual ARP has been on the Web relative to the other ARPs.



**Table 3.1. Operationalization of the descriptive categories conceptual framework**

Coding Sheet		
Variable 1	eCommons ARP serial number	_____
Variable 2	Title construction	_____ (1 = two-part; 0 = one-part)
Variable 3	Award winner	_____ (1 = yes; 0 = no)
Variable 4	Page volume (less Texas State cover page)	_____ (number)
Variable 5	Bibliography size	_____ (number)
Variable	Level of government/sector	
6a	Federal government	_____ (1 = yes; 0 = no)
6b	State government	_____ (1 = yes; 0 = no)
6c	Local/regional government	_____ (1 = yes; 0 = no)
6d	Non-profit	_____ (1 = yes; 0 = no)
6e	Other (describe)	_____
Variable	Search engine optimizers (as of _____)	
7a	Wikipedia reference	_____ (1 = yes; 0 = no)
7b	Google Scholar-identified citations	_____ (number)
7c	AltaVista-identified links	_____ (number)
Variable	Topical categories	
8a	Policy making/policy analysis	_____ (1 = yes; 0 = no)
8b	Management/administration	_____ (1 = yes; 0 = no)
8c	Human resources/social services	_____ (1 = yes; 0 = no)
8d	Program evaluation	_____ (1 = yes; 0 = no)
8e	Technology applications	_____ (1 = yes; 0 = no)
8f	Urban economics	_____ (1 = yes; 0 = no)
8g	Other (describe)	_____
Variable	Research purpose	
9a	Exploration	_____ (1 = yes; 0 = no)
9b	Descriptive	_____ (1 = yes; 0 = no)
9c	Gauging	_____ (1 = yes; 0 = no)
9d	Decision making	_____ (1 = yes; 0 = no)
9e	Explanation/prediction	_____ (1 = yes; 0 = no)
9f	Not determined	_____ (1 = yes; 0 = no)

**Table 3.1. Operationalization of the descriptive categories conceptual framework (cont'd)**

Variable	Research method	
10a	Interview	_____ (1 = yes; 0 = no)
10b	Focus group	_____ (1 = yes; 0 = no)
10c	Document analysis	_____ (1 = yes; 0 = no)
10d	Case study	_____ (1 = yes; 0 = no)
10e	Survey	_____ (1 = yes; 0 = no)
10f	Content analysis	_____ (1 = yes; 0 = no)
10g	Existing aggregated data	_____ (1 = yes; 0 = no)
10h	Operations research	_____ (1 = yes; 0 = no)
Variable	Statistical technique	
11a	Descriptive	_____ (1 = yes; 0 = no)
11b	Multivariate	_____ (1 = yes; 0 = no)
11c	Other (describe)	_____
11d	None	_____ (1 = yes; 0 = no)

An Excel<sup>®</sup> spreadsheet was used to consolidate the collected data. Appendix C provides a condensed version of that spreadsheet, displaying the “Top 40” most-downloaded ARPs and the independent variables used in testing the working hypotheses described later.

#### *Data from other sources*

It should be noted that the Variable 7 series in table 3.1 addresses data which are extrinsic to the ARP itself. As such, they are not a part of the content analysis which examines intrinsic characteristics, and they are subject to change as articles are added and withdrawn from the Web. For these data elements, table 3.1 contains an “as of” for the recording of the measurement date.

It is possible to find references to ARPs in Wikipedia by entering the author’s first and last name in Wikipedia’s search field at [http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page), but

depending on the uniqueness of the author's name, a referencing article will not always be at the top of the results list. For example, Lamar Collins' ARP appeared fourth on the results page when searching for his name, but it was at the top of the list when his ARP's URL, <http://ecommons.txstate.edu/arp/285/>, was entered.

The changing nature of this extrinsic data is also seen in Google Scholar citations. On 27 August 2009, <http://ecommons.txstate.edu/arp/29/> was entered into Google Scholar's search field at <http://scholar.google.com>, resulting in a "Cited by 5" message on the screen underneath the entry describing [Brion Oaks](#)' (2005) evaluation of snack tax. On 9 November 2009, however, Google Scholar reported "Cited by 4" for this ARP, suggesting that someone's work had been removed from the Web. The "Cited by..." message is a hyperlink that can be clicked on to view a list of those works that have cited the subject work.

To identify links to the Texas State repository, Courtney Smith, Digital Commons Project Manager at the Berkeley Electronic Press, suggested using the AltaVista search engine, <http://www.altavista.com>, by entering "link:ecommons.txstate.edu" in the search field. To exclude links from within Texas State, the entry is "link:ecommons.txstate.edu -site:ecommons.txstate.edu." This method was used to learn what other works on the Web are connected by hyperlinks to particular Texas State ARPs by entering "link:" followed immediately by the ARP's URL. Filtering out links internal to Texas State was not done because the relative value of internal versus external links in relation to downloads is not known.

Reports of downloading activity were obtained through a secure Web site at the Berkeley Electronic Press. These reports are available at any time to registered users. The content and format are tailored by the user online at the time of the data query.

### *Strengths of content analysis*

Babbie (2001) describes four key advantages to the use of content analysis in student research. The first is economy; having no requirement for a large staff or special equipment saves both time and money. Second, mistakes can be corrected with relative expediency as data are not dependent on an unrepeatable event. When a data transcription error was identified in an ARP, it was quickly corrected because the source document was readily available. Extended timeframes provide the third advantage. Data are dependent on the availability of records, not people or current events; hence the future replication or expansion of the research in this project is possible. And finally, the unobtrusive nature of content analysis permits measurement without affecting the subject being studied.

### *Weaknesses of content analysis*

Babbie (2001, 315) also cautions that content analysis is “limited to the examination of recorded communications...that must be recorded in some fashion to permit analysis.” Since this project is an extension of previous ARPs, a modified version of Ilo’s (2005) approach to categorization was adopted for consistency and to make use of a system that already worked.

Definitions of some of the variables in table 3.1—level of government/sector, topical categories, research purpose, research method, statistical technique—appear self-explanatory, yet the process of content analysis raises the issue of interrater reliability, or the risk that not everyone will code existing items in the same way. For example, an ARP coded as “state” in the level of government category by the author due to state funding could just as easily, and perhaps more accurately, be coded as “local/regional” by another rater due to the level at which a subject program is administered. For this reason, the coding sheet was designed and used for the assignment ARPs to multiple choices within a category when needed. For ARPs submitted in recent years, coding decisions were assisted by the structural consistency across projects. ARPs completed prior to the implementation of conceptual frameworks and operationalization tables, as described in Shields’ and Tajalli’s (2006) “Missing Link” article, proved more challenging and required careful reading and reflection.

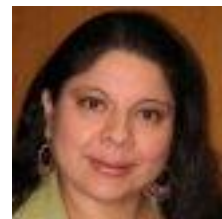


Figure 14.  
[Aida Douglas](#) (2006)

“Exploring the Barriers to  
Community Involvement  
in Public Transportation:  
The Case of Capital  
Metro”

### **Working Hypotheses**

With multiple independent variables (ARP characteristics) appearing simultaneously (see table 3.2), multiple regression analysis (Babbie 2001) was used to determine the impact of each upon the dependent variable (ARP downloads) and to ascertain whether the working hypotheses are supported or rejected. To perform this analysis, Statistical Package for Social Sciences (SPSS) 17.0 was used to draw from the data entered into the Excel spreadsheet described above. While many of the independent

variables are initially nominal variables, the assignment of responses 1 or 0 on the coding sheet (table 3.1) quantifies these variables, thereby enabling their use.

**Table 3.2. Operationalization of the working hypotheses conceptual framework**

Dependent variable	W H	+/ -	Measurement	Data source
Number of downloads			Actual number of downloads as of 8/18/09	The Berkeley Electronic Press
Independent variables				
State government	1	+	1 = state; 0 = other	ARP content analysis
Explanatory purpose	2	+	1 = explanatory; 0 = other	ARP content analysis
Survey research method	3	+	1 = survey; 0 = other	ARP content analysis
Length of time on the Web	4	-	eCommons serial number – lower numbers indicate a longer time on the Web	ARP web site
Two-part title	5	+	1 = two-part; 0 = one-part	ARP content analysis
Award winner	6	+	1 = award; 0 = no award	Awarding-winning ARP web site
Bibliography size	7	+	Number of entries in bibliography	ARP content analysis
Wikipedia reference	8a	+	1 = yes; 0 = no	Wikipedia
Google Scholar citations	8b	+	Number of citations by electronic scholarship	Google Scholar
AltaVista-identified links	8c	+	Number of links	AltaVista

The number of full-text downloads for each ARP residing online was obtained by data query from existing data residing at bepress<sup>TM</sup>, Texas State University's open-access institutional repository, and downloaded into an Excel<sup>®</sup> spreadsheet. Other data from the coding sheets, which identified various characteristics of individual ARPs, were transcribed into the same spreadsheet.

### **Human Subjects Protection**

This project was not submitted to the Institutional Review Board as no human subjects were used during the course of this project.

## **Chapter Summary**

This chapter presents the methodology used to identify factors affecting download rates of Texas State University ARPs available online. Descriptive statistics (frequency distribution, mean, median, and standard deviation) are presented to illustrate various characteristics of the online ARP population, and bivariate analysis (correlation coefficients) to demonstrate the empirical relationships between those characteristics and the associated download volume for ARPs. Multiple regression analysis is then applied to test the working hypotheses dealing with the determinants of ARP downloads. The following chapter presents the results of these analyses.

## Chapter 4. Results

### Chapter Purpose

This chapter presents results of the analyses conducted to identify factors leading to higher download rates among the full population of 290 ARPs available online as of 18 August 2009. Descriptive statistics illustrate the mean, median, and standard deviation for download totals associated with selected ARP characteristics categorized in tables 4.1 through 4.11. Correlations among the independent variables are then displayed in table 4.12, followed by multiple regression analysis results in table 4.13, calculated to determine which, if any, of the working hypotheses identified in chapter 2 can be supported. To eliminate at least some of the effects of spurious variation, each table is immediately followed by a supplemental table displaying like statistics for a subset of the population composed of the 71 ARPs submitted during the years 2006 through 2008. ARPs from 2009 are not included in this subset due to the relatively short time they have been available online.

### Descriptive Categories

#### *Public administration-related categories*

- Level of government/sector

For both the entire set of ARPs and the more current subset, the local/regional level of government was the most often studied (about half). The average downloads were 465.2 (overall) and 496.0 (recent). State government (usually Texas) was the second most frequently studied level of government. The level of downloads for state government, however, was much higher (526.1 overall and 836.5 for the ARPs written in



the last three years). The focus on state and local government among the ARPs is not surprising given the location of the program and that most students work, or plan to work, in Central Texas.

**Table 4.1a. Average downloads in relation to government level/sector (full population)**

Level of gov't/ sector*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 18 Aug 09 N=136,072	% of 136,072 downloads	Mean	Median	Standard deviation
Fed. gov't	16	5.5%	10,841	8.0%	677.6	478.5	479.2
State gov't	111	38.3%	58,400	42.9%	526.1	407.0	452.3
Local/ regional	143	49.3%	66,523	48.9%	465.2	400.0	343.8
Non-profit	6	2.1%	4,070	3.0%	**	**	**
Other	32	11.0%	12,639	9.3%	395.0	321.0	326.6
Totals					469.2	395.0	367.8

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

**Table 4.1b. Average downloads in relation to government level/sector (2006-2008 ARPs)**

Level of gov't/ sector*	No. of ARPs N=71	% of 71 ARPs	No. of downloads 18 Aug 09 N=40,779	% of 40,779 downloads	Mean	Median	Standard deviation
Fed. gov't	6	8.5%	3,984	9.8%	664.0	514.0	413.8
State gov't	20	28.2%	16,729	41.0%	836.5	625.0	574.0
Local/ regional	37	52.1%	18,352	45.0%	496.0	428.0	266.7
Non-profit	3	4.2%	1,577	3.9%	**	**	**
Other	10	14.1%	4,685	3.4%	468.5	379.5	236.1
Totals					574.4	500.0	395.5

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

- Topical categories.

ARPs written on topics in human resources and/or social services accounted for 15% of the full population (44 out of 290) and only 11% (8 out of 71) of those written in 2006-2008, ranking fourth among the topical categories. Average downloads for these ARPs were the highest by far with 656.3 (overall) and 1,041.5 (recent).

Program evaluation topics were the most frequently occurring, at 32% (overall) and 37% (recent), yet placed third in average downloads (471.5) within the full population and second (619.6) among the 2006-2008 ARPs.



Figure 15. [Melissa Alvarado](#) (2009)  
“Cultural Arts: An Ideal Model of  
Creative Capital-Based Approaches to  
Cultural Arts Planning”

**Table 4.2a. Average downloads in relation to topical categories (full population)**

Topical categories*	No. of ARPs N=290	% of 290 APRs	No. of downloads 18 Aug 09 N=136,072	% of 136,072 downloads	Mean	Median	Standard deviation
Policy making/analysis	57	19.7%	29,426	21.6%	516.2	445.0	377.4
Mgmt/admin	50	17.2%	22,803	16.8%	456.1	398.0	392.3
HR/social services	44	15.2%	28,875	21.2%	656.3	527.0	485.2
Program evaluation	94	32.4%	44,320	32.6%	471.5	329.5	435.5
Technology applications	16	5.5%	7,221	5.3%	451.3	405.0	251.7
Urban economics	21	7.2%	8,298	6.1%	395.1	279.0	303.8
Other	18	6.2%	7,334	5.4%	407.4	372.0	237.3
Totals					469.2	395.0	367.8

\* Use of more than one is possible

**Table 4.2b. Average downloads in relation to topical categories (2006-2008 ARPs)**

Topical categories*	No. of ARPs N=71	% of 71 APRs	No. of downloads 18 Aug 09 N=40,779	% of 40,779 downloads	Mean	Median	Standard deviation
Policy making/analysis	13	18.3%	7,581	18.6%	583.2	546.0	312.5
Mgmt/Admin	16	22.5%	8,695	21.3%	543.4	466.5	387.8
HR/social services	8	11.3%	8,332	20.4%	1,041.5	846.0	675.1
Program evaluation	26	36.6%	16,109	39.5%	619.6	431.5	526.7
Technology applications	4	5.6%	2,450	6.0%	**	**	**
Urban economics	4	5.6%	1,816	4.5%	**	**	**
Other	5	7.0%	2,397	5.9%	**	**	**
Totals					574.4	500.0	395.5

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

- Research purpose

For the entire set of ARPs and the 2006-2008 subset, the gauging research purpose was the most often pursued, with 31% and 41% of the respective populations, but is second in average downloads with 506.8 (overall) and 576.8 (recent). The highest download averages were recorded for the explanation/prediction research purpose with 527.3 among the full population, and the exploration purpose with 649.3 in the more recent group.

The relative importance of these highest download averages may be diminished, however, by the number of ARPs within in each group. Within the full population, there were nearly twice as many gauging ARPs (89) as those with an explanation/prediction purpose (48) and, within the more recent subset of ARPs, there were just over twice as many gauging ARPs (29) as those with an exploration purpose (14).

**Table 4.3a. Average downloads in relation to research purpose (full population)**

Research purpose*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 18 Aug 09 N=136,072	% of 136,072 downloads	Mean	Median	Standard deviation
Exploration	76	26.2%	34,105	25.1%	448.8	376.5	411.3
Descriptive	83	28.6%	34,723	25.5%	418.3	322.0	348.1
Gauging	89	30.7%	45,102	33.1%	506.8	469.0	348.1
Decision making	5	1.7%	3,633	2.7%	**	**	**
Explanation/ prediction	48	16.6%	25,308	18.6%	527.3	404.0	415.0
Not determined	0	0.0%	0	0.0%			
Totals					469.2	395.0	367.8

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

**Table 4.3b. Average downloads in relation to research purpose (2006-2008 ARPs)**

Research purpose*	No. of ARPs N=71	% of 71 ARPs	No. of downloads 18 Aug 09 N=40,779	% of 40,779 downloads	Mean	Median	Standard deviation
Exploration	14	19.7%	9,090	22.3%	649.3	466.0	610.7
Descriptive	15	21.1%	7,514	18.4%	500.9	500.0	286.3
Gauging	29	40.8%	16,723	41.0%	576.8	546.0	344.1
Decision making	3	4.2%	2,190	5.4%	**	**	**
Explanation/prediction	12	16.9%	6,875	16.9%	527.9	430.0	341.3
Not determined	0	0.0%	0	0.0%			
Totals					574.4	500.0	395.5

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

- Research method

Nearly 45% of the full set of ARPs employed a survey, making it the most frequently used research method. Yet by a slim margin, the average downloads for ARPs using surveys (451.7) was the lowest of the download averages calculated for the various methods used by the total population. Surveys were also the most often used research method (at nearly 41%) among the more recent ARPs. Here again, however, surveys were not associated with the highest download rates. The download rate for those using surveys (540.2) was below the average calculated for all 71 ARPs (574.4) in the subset of 2006-2008 ARPs.



Figure 16.  
[James Quintero](#) (2007)  
“Regional Economic Development: An Economic Base Study and Shift-Share Analysis of Hays County, Texas”

**Table 4.4a. Average downloads in relation to research method (full population)**

Research method*	No. of ARPs <i>N</i> =290	% of 290 ARPs	No. of downloads 18 Aug 09 <i>N</i> =136,072	% of 136,072 downloads	Mean	Median	Standard deviation
Interview	75	25.9%	38,934	28.6%	519.1	411.0	399.7
Focus group	11	3.8%	5,847	4.3%	531.5	380.0	485.2
Document analysis	77	26.6%	34,850	25.6%	452.6	402.0	303.6
Case study	53	18.3%	25,194	18.5%	475.4	429.0	332.5
Survey	130	44.8%	58,726	43.2%	451.7	367.5	360.6
Content analysis	49	16.9%	22,803	16.8%	465.4	390.0	314.4
Existing aggregated data	60	20.7%	29,347	21.6%	489.1	408.5	370.7
Operations research	5	1.7%	3,633	2.7%	**	**	**
Totals					469.2	395.0	367.8

\* *Use of more than one is possible*

\*\* *Too few downloads for meaningful averages*

**Table 4.4b. Average downloads in relation to research method (2006-2008 ARPs)**

Research method*	No. of ARPs	% of 71 ARPs	No. of downloads 18 Aug 09	% of 40,779 downloads	Mean	Median	Standard deviation
Interview	22	31.0%	13,806	33.9%	627.5	524.5	524.2
Focus group	2	2.8%	2,051	5.0%	**	**	**
Document analysis	22	31.0%	10,273	25.2%	467.0	395.0	239.1
Case study	14	19.7%	7,290	17.9%	520.7	473.0	375.7
Survey	29	40.8%	15,667	38.4%	540.2	500.0	328.6
Content analysis	10	14.1%	5,147	12.6%	514.7	435.0	310.3
Existing aggregated data	17	23.9%	10,332	25.3%	607.8	567.0	330.2
Operations research	3	4.2%	2,190	5.4%	**	**	**
Totals					574.4	500.0	395.5

\* *Use of more than one is possible*

\*\* *Too few downloads for meaningful averages*

- Statistical technique

For the entire set of 290 ARPs and the more current ones, those displaying descriptive statistics (70% overall and 74% recent) greatly outnumber those employing multivariate analysis (18% for both populations). The distinction makes little difference in the average downloads between those two techniques. ARPs making no use of statistics, however, experience the lowest average downloads at 366.0 (overall) and 420.4 (recent).

**Table 4.5a. Average downloads in relation to statistical techniques (full population)**

Statistical technique*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 18 Aug 09 N=136,072	% of 136,072 downloads	Mean	Median	Standard deviation
Descriptive	203	70.0%	99,444	73.1%	489.9	409.0	374.6
Multivariate	51	17.6%	25,810	19.0%	506.1	408.0	408.6
Other	0	0.0%	0	0.0%			
None	47	16.2%	17,203	12.6%	366.0	330.0	250.4
Totals					469.2	395.0	367.8

\* Use of more than one is possible

**Table 4.5b. Average downloads in relation to statistical techniques (2006-2008 ARPs)**

Statistical technique*	No. of ARPs N=71	% of 71 ARPs	No. of downloads 18 Aug 09 N=40,779	% of 40,779 downloads	Mean	Median	Standard deviation
Descriptive	52	73.2%	31,180	76.5%	599.6	530.5	415.6
Multivariate	13	18.3%	7,921	19.4%	609.3	460.0	352.2
Other	0	0.0%	0	0.0%			
None	8	11.3%	3,363	8.2%	420.4	307.0	334.5
Totals					574.4	500.0	395.5

\* Use of more than one is possible

### *Technical-related categories*

- General characteristics

1. Length of time on the Web. With serial numbers assigned sequentially as ARPs are uploaded, it was expected that the volume of downloads associated with the lowest serial numbers would be the greatest. That expectation is solidly supported in the full set of ARPs with average downloads in the earliest two groups of serial numbers calculated at 650.2 (serial nos. 1-30) and 637.8 (serial nos. 31-63). With download averages of 579.9 and 500.8, the next two most downloaded groups (serial nos. 186-214 and 244-273) consisted of ARPs which had been uploaded much more recently. This offers a clear indication that factors other than time on the Web affect downloads.

The uploading of ARPs completed in 2006 through 2008 corresponded with the time of their submission, thus it was expected that of the three year groups, the 2008 ARPs would have the lowest average downloads. The average downloads for 2007 ARPs (681.6) is greater than the average downloads for 2006 ARPs (609.7), again indicating that time on the Web is not the only factor influencing download totals.



Figure 17. [Brian O'Neill](#) (2008)  
McGrew Award-winner and  
third-generation firefighter

“A Model Assessment Tool for the  
Incident Command System:  
A Case Study of the  
San Antonio Fire Department”



**Table 4.6a. Average downloads in relation to serial numbers (full population)**

Serial number	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
1-30	29	10.0%	18,857	13.9%	650.2	544.0	403.9
31-63	29	10.0%	18,497	13.6%	637.8	519.0	363.9
64-95	29	10.0%	9,482	7.0%	327.0	201.0	353.0
96-124	29	10.0%	14,354	10.5%	495.0	471.0	259.8
125-155	29	10.0%	10,531	7.7%	363.1	315.0	249.3
156-185	29	10.0%	14,371	10.6%	495.6	434.0	369.7
186-214	29	10.0%	16,818	12.4%	579.9	421.0	545.7
215-243	29	10.0%	13,072	9.6%	450.8	368.0	373.0
244-273	29	10.0%	14,524	10.7%	500.8	460.0	213.6
274-302	29	10.0%	5,566	4.1%	191.9	124.0	189.8
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

**Table 4.6b. Average downloads in relation to year of submission (2006-2008 ARPs)**

Year submitted	No. of ARPs	% of APRs	No. of downloads	% of downloads	Mean	Median	Standard deviation
2006	27	38.0%	16,463	40.4%	609.7	537.0	289.4
2007	26	36.6%	17,722	43.5%	681.6	556.5	519.9
2008	18	25.4%	6,594	16.2%	366.3	276.5	230.1
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

2. Title construction. In both the full set of ARPs and in the recent subset, the populations are fairly evenly split between those with one-part and two-part titles. Within the full population, the average downloads associated with one-part titles (498.1) are greater than the average downloads for two-part titles (436.0). The opposite is observed for the 2006-2008 ARP subset, with two-part titles experiencing higher average downloads (604.6) than did those with one-part titles. While Hartley (2005) asserts that academic articles can be clarified by subtitles, and colons help in creating titles that are successful in attracting and informing, two-part titles have no apparent effect on Texas State ARP download rates.

**Table 4.7a. Average downloads in relation to title construction (full population)**

Title construction	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Two-part	135	46.6%	58,861	43.3%	436.0	380.0	352.5
One-part	155	53.4%	77,211	56.7%	498.1	408.0	379.4
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

**Table 4.7b. Average downloads in relation to title construction (2006-2008 ARPs)**

Title construction	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Two-part	35	49.3%	21,162	51.9%	604.6	482.0	471.2
One-part	36	50.7%	19,617	48.1%	544.9	502.0	308.6
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

3. Award winner. For both the entire set of ARPs and the more current ones, around 8% of the ARPs have won awards. Overall, award-winning ARPs had a download average of 518.0, higher than the 465.0 download average for ARPs that had not won awards. Looking at just the group of 2006-2008 ARPs, however, the 533.3 download average for award-winning ARPs was a bit lower than the 578.1 average experienced by those without awards. This may be a reflection of the overall improvement in quality found in recent years' ARPs, thereby increasing the utility of ARPs to readers on the Web.

**Table 4.8a. Average downloads in relation to awards received (full population)**

Award status	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Award	23	7.9%	11,915	8.8%	518.0	409.0	357.2
No award	267	92.1%	124,157	91.2%	465.0	394.0	369.1
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

**Table 4.8b. Average downloads in relation to awards received (2006-2008 ARPs)**

Award status	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Award	6	8.5%	3,200	7.8%	533.3	574.0	202.2
No award	65	91.5%	37,579	92.2%	578.1	482.0	409.5
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

4. Page volume. For ARPs containing 51-75 pages, the 538.3 download average in the full set and the 646.8 download average for recent ARPs exceeded the download averages recorded for more voluminous ARPs. With the exception of the small group of ARPs with 151 or more pages (less than 7% of the full set), the download averages indicate a trend of decreasing downloads associated with increasing page counts.

**Table 4.9a. Average downloads in relation to page volume (full population)**

No. of pages	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
≤ 50	6	2.1%	4,512	3.3%	*	*	*
51-75	83	28.6%	44,676	32.8%	538.3	438.0	444.2
76-100	93	32.1%	44,289	32.5%	476.2	390.0	355.3
101-125	62	21.4%	24,009	17.6%	387.2	339.5	250.1
126-150	27	9.3%	9,514	7.0%	352.4	290.0	337.0
≥ 151	19	6.6%	9,072	6.7%	477.5	445.0	343.3
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

\* Too few downloads for meaningful averages

**Table 4.9b. Average downloads in relation to page volume (2006-2008 ARPs)**

No. of pages	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
≤ 50	3	4.2%	2,650	6.5%	*	*	*
51-75	24	33.8%	15,523	38.1%	646.8	530.5	498.3
76-100	20	28.2%	11,103	27.2%	555.2	394.5	379.5
101-125	16	22.5%	7,141	17.5%	446.3	427.5	227.7
126-150	3	4.2%	1,720	4.2%	*	*	*
≥ 151	5	7.0%	2,642	6.5%	*	*	*
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

\* Too few downloads for meaningful averages

5. Bibliography size. Large bibliographies do not seem to lead to increased download averages. Among the full population, the two subgroups of ARPs with the fewest bibliographic entries (25 or less, and 26-35) were essentially tied for the highest download averages (523.6 and 523.4, respectively). For recent ARPs, those with 36-45 bibliographic entries enjoyed the highest download average (659.7). Across the range of bibliography sizes, there are no obvious trends to indicate a relationship between the volume of bibliographic entries and download averages.

**Table 4.10a. Average downloads in relation to bibliography size (full population)**

No. of bibliographic entries	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
≤ 25	13	4.5%	6,807	5.0%	523.6	407.0	373.3
26-35	77	26.6%	40,302	29.6%	523.4	445.0	372.7
36-45	78	26.9%	37,850	27.8%	485.3	369.0	430.6
46-55	49	16.9%	17,713	13.0%	361.5	279.0	262.3
56-65	34	11.7%	14,398	10.6%	423.5	410.5	270.6
≥ 66	39	13.4%	19,002	14.0%	487.2	432.0	395.4
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

**Table 4.10b. Average downloads in relation to bibliography size (2006-2008 ARPs)**

No. of bibliographic entries	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
≤ 25	2	2.8%	1,550	3.8%	*	*	*
26-35	22	31.0%	12,550	30.8%	570.5	514.0	299.9
36-45	18	25.4%	11,875	29.1%	659.7	471.0	566.8
46-55	10	14.1%	3,347	8.2%	334.7	257.0	194.4
56-65	9	12.7%	5,383	13.2%	598.1	581.0	258.4
≥ 66	10	14.1%	6,074	14.9%	607.4	542.0	420.5
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

\* Too few downloads for meaningful averages

- Search engine optimizing

ARPs referenced in Wikipedia accounted for only 7% of the full set of ARPs and 17% of the more current ones, yet their download averages—at 788.2 (overall) and 872.4 (recent)—far exceeded the download averages experienced by those not referenced in Wikipedia. For both the entire set of ARPs and the more current ones, about three-quarters of the ARPs had one or no citation listed in Google Scholar. The other quarter of the ARPs, with two or more citations in Google Scholar, experienced higher download averages than those with fewer citations. Among the full population of ARPs, those with the highest download average of 560.0 had three or more citations. In the more recent set of ARPs, those with two Google Scholar citations had the highest download average at 676.0.

ARPs with nine or more links to other works, as identified in AltaVista, experienced the highest download averages with 651.9 (overall) and 660.9 (recent).

**Table 4.11a. Average downloads in relation to search engine optimizing attributes (full population)**

Search engine optimizers	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Wikipedia reference							
Yes	20	6.9%	15,764	11.6%	788.2	631.0	610.2
No	270	93.1%	120,308	88.4%	445.6	376.0	333.0
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8
Google Scholar citations							
0	138	47.6%	57,198	42.0%	414.5	315.5	393.6
1	81	27.9%	40,391	29.7%	498.7	427.0	309.3
2	39	13.4%	20,563	15.1%	527.3	438.0	403.7
≥ 3	32	11.0%	17,920	13.2%	560.0	539.5	318.7
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8
AltaVista-identified links							
≤ 4	51	17.6%	15,615	11.5%	306.2	256.0	358.1
5-6	122	42.1%	55,373	40.7%	453.9	400.0	313.6
7-8	59	20.3%	27,272	20.0%	462.2	401.0	332.0
≥ 9	58	20.0%	37,812	27.8%	651.9	573.0	440.6
Totals	290	100.0%	136,072	100.0%	469.2	395.0	367.8

**Table 4.11b. Average downloads in relation to search engine optimizing attributes (2006-2008 ARPs)**

Search engine optimizers	No. of ARPs	% of APRs	No. of downloads 18 Aug 09	% of downloads	Mean	Median	Standard deviation
Wikipedia reference							
Yes	12	16.9%	10,469	25.7%	872.4	737.0	613.2
No	59	83.1%	30,310	74.3%	513.7	427.0	308.7
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5
Google Scholar citations							
0	28	39.4%	15,608	38.3%	557.4	379.5	524.1
1	24	33.8%	13,050	32.0%	543.8	427.5	294.6
2	8	11.3%	5,408	13.3%	676.0	658.5	365.4
≥ 3	11	15.5%	6,713	16.5%	610.3	623.0	217.5
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5
AltaVista-identified links							
≤ 4	2	2.8%	2,834	6.9%	*	*	*
5-6	4	5.6%	1,608	3.9%	*	*	*
7-8	31	43.7%	13,867	34.0%	447.3	389.0	254.1
≥ 9	34	47.9%	22,470	55.1%	660.9	587.5	339.7
Totals	71	100.0%	40,779	100.0%	574.4	500.0	395.5

\* Too few downloads for meaningful averages

## Working Hypotheses

### *Pearson correlations*

Pearson correlation coefficients were calculated to quantify relationships among the independent variables. Table 4.12a shows where such relationships, or correlations, are significant at the .01 and .05 levels within the full population of 290. Overall, the independent variable correlations appear weak. The strongest relationship between independent variables, at .246, is between an award and the number of Google Scholar citations, meaning that 24.6% of the variance is shared by these two variables.

Table 4.12b

identifies the .432 correlation between Wikipedia references and AltaVista-identified links as the strongest relationship among independent variables associated with the subset population of 71 ARPs submitted in 2006-2008.



Figure 18. [Erin Tresner](#) (2009), second from left  
“Factors Affecting States’ Rankings on the 2007 Forbes List  
of America’s Greenest States”

**Table 4.12a. Pearson correlation among independent variables (full population)**

<i>N</i> = 290	State gov't	Explanation	Survey	Serial no.	Title constr	Award winner	Bibliography	Wiki-pedia	Google Scholar	Alta Vista
State gov't	1	.050	-.011	-.095	-.066	.031	-.052	-.046	*	-.070
Explanation		1	** -.234	.094	** -.155	-.062	-.014	-.048	-.076	.021
Survey			1	-.041	.132	.043	-.096	-.081	.021	-.082
Serial no.				1	.146	-.121	.101	.023	** -.173	.111
Title constr					1	-.044	.050	-.063	-.050	-.082
Award winner						1	.019	.021	** .246	.071
Bibliography							1	** .179	.014	.132
Wiki-pedia								1	-.009	** .243
Google Scholar									1	.026
Alta Vista										1

\* Correlation is significant at the 0.05 level (two-tailed)

\*\* Correlation is significant at the 0.01 level (two-tailed).

Dependent variable: ARP downloads as of 18 August 2009

**Table 4.12b. Pearson correlation among independent variables (2006-2008 ARPs)**

<i>N</i> = 71	State gov't	Explanation	Survey	Serial no.	Title constr	Award winner	Bibliography	Wiki-pedia	Google Scholar	Alta Vista
State gov't	1	.135	-.138	-.097	.009	-.078	.120	.052	-.126	-.023
Explanation		1	-.222	.059	** -.370	-.137	.077	-.103	-.143	.075
Survey			1	-.091	.155	-.046	.057	-.069	-.070	-.035
Serial no.				1	.019	.131	* .293	-.011	.015	-.078
Title constr					1	.004	.197	-.144	-.081	** -.330
Award winner						1	-.033	.133	* .303	.162
Bibliography							1	.202	-.031	.000
Wiki-pedia								1	-.106	** .432
Google Scholar									1	.026
Alta Vista										1

\* Correlation is significant at the 0.05 level (two-tailed).

\*\* Correlation is significant at the 0.01 level (two-tailed).

Dependent variable: ARP downloads as of 18 August 2009



### *Multivariate regression analysis*

The regression results for the full population of ARPs revealed an adjusted  $R^2$  of .123 (see table 4.13a); meaning that 12.3% of the variance was explained by the variables. The most significant independent variable was Wikipedia reference ( $B = 355.42$ ;  $Beta = .25$ ). Hence, if an ARP is listed in Wikipedia, it contributes 355 downloads to the overall total. The Betas identify the variable with the strongest influence on download activity Wikipedia reference, followed by Google Scholar citations.

When the regression analysis was limited to only ARPs submitted in 2006 through 2008, the resultant  $R^2$  was higher at .331 (see table 4.13b). Wikipedia reference

was again identified as the most significant independent variable ( $B = 499.88$ ;  $Beta = .48$ ), but state government variable replaced Google Scholar citations as the second-ranked independent variable.



Figure 19.  
[Gabriel Cárdenas](#) (2002)

“An Assessment of the  
Multijurisdictional Drug Task  
Forces in Texas: A Case Study”

**Table 4.13a. Coefficients (full population)**

Independent variables	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	B	Std. error	Beta		
(Constant)	494.42	76.25		6.48	.000
<b>Sector - state government</b>	<b>104.71</b>	<b>42.74</b>	<b>.14</b>	<b>2.45</b>	<b>.015</b>
Research purpose - explanation	96.49	57.18	.10	1.69	.093
Research method - survey	-5.86	42.48	-.01	-.14	.890
<b>Serial number</b>	<b>-.76</b>	<b>.25</b>	<b>-.18</b>	<b>-3.09</b>	<b>.002</b>
Title construction	-.38	42.24	-.00	-.01	.993
Award winner	-40.68	78.07	-.03	-.52	.603
Bibliography size	-1.26	1.04	-.07	-1.21	.226
<b>Wikipedia reference</b>	<b>355.42</b>	<b>83.79</b>	<b>.25</b>	<b>4.24</b>	<b>.000</b>
<b>Google Scholar citations</b>	<b>40.60</b>	<b>14.79</b>	<b>.16</b>	<b>2.75</b>	<b>.006</b>
AltaVista-identified links	4.88	3.41	.08	1.43	.153

Dependent variable: ARP downloads as of 18 August 2009

*N* = 290 ARPs

#### Model Summary

<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	<i>F</i> change
0.391	0.153	0.123	344.48	5.05

**Table 4.13b. Coefficients (2006-2008 ARPs)**

Independent variables	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	B	Std. error	Beta		
(Constant)	590.65	198.04		2.98	.004
<b>Sector - state government</b>	<b>364.94</b>	<b>89.23</b>	<b>.42</b>	<b>4.09</b>	<b>.000</b>
Research purpose - explanation	146.57	121.21	.14	1.21	.231
Research method - survey	21.87	82.99	.03	.26	.793
Serial number	-.69	.64	-.12	-1.08	.286
Title construction	193.40	93.00	.25	2.08	.042
Award winner	168.73	151.43	-.12	-1.11	.270
Bibliography size	-4.63	2.42	-.22	-1.92	.060
<b>Wikipedia reference</b>	<b>499.88</b>	<b>123.43</b>	<b>.48</b>	<b>4.05</b>	<b>.000</b>
<b>Google Scholar citations</b>	<b>57.30</b>	<b>20.83</b>	<b>.30</b>	<b>2.75</b>	<b>.008</b>
AltaVista-identified links	-3.02	10.03	-.04	-.30	.765

Dependent variable: ARP downloads as of 18 August 2009

*N* = 71 ARPs

#### Model Summary

<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	<i>F</i> change
0.653	0.427	0.331	323.43	4.47

#### The Top Ten

Table 4.14 displays key characteristics of the ten most-downloaded ARPs as of 18 August 2009, in those areas identified as significant by the regression analyses reported above. Seven of the top ten were written on issues related to state government. Only the top two were referenced in Wikipedia, and only half had any citations listed in Google Scholar.

**Table 4.14. Key characteristics of the ten most-downloaded ARPs**

Serial no.	Year	State government	Wikipedia reference	Google Scholar citations	Down-loads 18Aug09
210	2007	Yes	Yes	0	2,599
5	2005	Yes	Yes	0	2,058
241	1992	No	No	0	1,843
43	2003	Yes	No	2	1,668
209	2007	Yes	No	0	1,623
34	2003	Yes	No	3	1,603
68	2001	Yes	No	1	1,461
175	1998	No	No	2	1,370
30	2005	Yes	No	0	1,271
20	2004	No	No	1	1,257

## Chapter Summary

This chapter discussed the descriptive statistics calculated for seven categories of various characteristics found in ARPs. Also presented were the results of the multiple regression analyses of ten independent variables selected to test eight working hypotheses, with three sub-hypotheses. In all cases, comparisons were made between the data related to the full population of 290 ARPs available online as of 18 August 2009 and a subset population of those ARPs submitted in 2006 through 2008. The following chapter discusses conclusions drawn from this examination of ARP downloads and proposes areas of interest for further study.

## Chapter 5. Conclusions

The purpose of this research was to address the question of why some Texas State ARPs attract significantly higher download rates than others. Building on previous work, the many characteristics associated with ARPs were first sorted into categories to add focus to the analyzing process. Working hypotheses were then developed and tested through multiple regression analyses.

To address the effects of spurious variation within the full population of 290 ARPs, as discussed in chapter 3, each table of descriptive statistics presented in chapter 4 was immediately followed by a supplemental table displaying like statistics for the 71 ARPs submitted in 2006 through 2008. It was immediately apparent in these separate sets of tables, and as summarized in table 5.1, that at 574.4, the mean of downloads for 2006-2008 ARPs was dramatically higher than the 469.2 mean of downloads for the entire population consisting of mainly older ARPs.

**Table 5.1. Average downloads**

Population	No. of ARPs	No. of downloads 18 Aug 09	Mean	Median	Standard deviation
All available online	290	136,072	469.2	395.0	367.8
2006-2008 submissions	71	40,779	574.4	500.0	395.5

Considering the time frames, this notable difference in the means also suggests that the consistent application of micro-conceptual frameworks, the “missing link”

identified by Shields and Tajalli (2006), has led to an increase in the utility of recent years' ARPs for online users.

Descriptive statistics, presented in chapter 4 for the various categories of ARP characteristics, demonstrated easily recognizable higher means in the download rates associated with Wikipedia references, two or more citations in Google Scholar, and a focus on state government issues. Those results are consolidated in table 5.2.



Figure 20.  
[Dave Vaughn](#) (2004)  
“Buying New Urbanism: A  
Study of New Urban  
Characteristics that Residents  
Most Value”

**Table 5.2. Exceptional download averages**

Characteristic	Mean	Median	Standard deviation
Full population (N=290)	469.2	395.0	367.8
State government	526.1	407.0	452.3
Wikipedia reference	788.2	631.0	610.2
Google Scholar citations:			
Two	527.3	438.0	403.7
Three or more	560.0	539.5	318.7
2006-2008 population (N=71)	574.4	500.0	395.5
State government	836.5	625.0	574.0
Wikipedia reference	872.4	737.0	613.2
Google Scholar citations:			
Two	676.0	658.5	365.4
Three or more	610.3	623.0	217.5

This initial assessment was borne out by multivariate regression analyses, where a focus on state government issues, references in Wikipedia, and citations in Google Scholar were all found to significantly contribute to download rates. Length of time on

the Web was also identified as a contributing factor, but only when measured against the full ARP population. Tables 5.3a and 5.3b present the full list of working hypotheses and indicate which were supported by the analytic results.

**Table 5.3a. Working hypotheses test summary (full population)**

Dependent variable	+/-	Support/Reject
Number of downloads		
Independent variables		
State government	+	Support
Explanatory purpose	+	Reject
Survey research method	+	Reject
Length of time on Web	-	Support
Two-part title	+	Reject
Award winner	+	Reject
Bibliography size	+	Reject
Wikipedia reference	+	Support
Google Scholar citations	+	Support
AltaVista-identified links	+	Reject

**Table 5.3b. Working hypotheses test summary (2006-2008 ARPs)**

Dependent variable	+/-	Support/Reject
Number of downloads		
Independent variables		
State government	+	Support
Explanatory purpose	+	Reject
Survey research method	+	Reject
Length of time on Web	-	Reject
Two-part title	+	Reject
Award winner	+	Reject
Bibliography size	+	Reject
Wikipedia reference	+	Support
Google Scholar citations	+	Support
AltaVista-identified links	+	Reject

Reliability does not ensure accuracy, however (Babbie 2001). To test the reliability of this analysis, download totals from 30 September 2009—six weeks after the original 18 August 2009 measurement date—were used to prepare the same descriptive statistics tables and perform the same multivariate regression analyses for the same population of 290 ARPs available online as of 18 August 2009. Though the total downloads had increased by a full 5%, from 136,072 to 143,110, there were almost no differences in the results (see appendix D).

### **The Unanswered Question**

The supported working hypotheses related to state government issues, Wikipedia references, and Google Scholar citations offer clues in answering the research question of why some ARPs attract more downloads than others, but only clues. Otherwise, one would expect to see more solid representation of those significant factors in the top ten listed in table 4.14.

The process of conducting this study—the literature review, the deadlines, the rewrites, and the content analysis of 290 ARPs written by former students—provided insight not fully appreciated at the beginning. Daniel Reed’s YouTube video on the MPA program’s Web page helps describe the supportive environment at Texas State: <http://www.polisci.txstate.edu/degrees-programs/graduate/MPA.html>.

Open access via Texas State’s institutional repository makes ARPs available to the world. Search engine optimization, through Wikipedia references and Google Scholar citations, helps to make those ARPs more noticeable by pushing them higher on search results lists. What makes Texas State ARPs useful to information seekers, and



worthy of downloading, likely has more to do with how they were written than anything else. Quoting a multimedia company executive on the globalizing impact of the Web, Friedman (2007, 474) asserts “Everyone can see what everyone else is doing now, and everyone has the same tools, so you have to be the very best.”

### **Suggestions for Future Research**

This research was limited to factors contributing to the highest download rates within the population of Texas State University MPA ARPs. Regression analysis on other topical categories, research purposes, and research methods could be performed in a replication of the general procedures followed here. Appendix E provides the results of such a new analysis where “exploration” was substituted for “explanation” as the research purpose independent variable, but was also found to not significantly contribute to the download volume of ARPs.

The definition and application of some measurement of ARP quality could be interesting in future research, as well as including the experience of other universities with open-access institutional repositories.

The effective assignment of key words is featured prominently in the literature on electronic publishing. If the records availability issue for assigned key words could be successfully addressed, research focused specifically on the role of key words in online searching and subsequent download rates for ARPs could prove fruitful. Such a project might include a scoring system for relevance, uniqueness, and specificity of key words.

As time goes on, ARPs continue to tally at least a few downloads each month, but as Dr. Sam Khosh-khui of Texas State’s Albert B. Alkek Library advised in a 14 April

2009 interview, flat-line monthly usage rates could indicate randomness in searching and downloading. A time-series analysis could explore the presence and significance of a decay curve in download rates over the life of ARPs. Monthly download totals for each ARP are readily obtained through data query from the Berkeley Electronic Press. To enhance accuracy, download counts could be normalized by dividing individual ARPs' download counts by the number of days online. The exact upload date for each ARP is available through the Alkek Library.

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## Appendices

## Appendix A. Non-U.S. Downloads

**Table A.1. Full-text downloads of ARPs from non-U.S. Internet domains, 30 August 2005 through 30 November 2009.**

	<u>Country</u>	<u>Downloads</u>
1.	India	2,664
2.	United Kingdom	2,384
3.	Canada	1,666
4.	Australia	1,065
5.	Malaysia	937
6.	Philippines	935
7.	South Africa	787
8.	Turkey	509
9.	Pakistan	494
10.	Indonesia	474
11.	Thailand	432
12.	China	412
13.	Germany	406
14.	Kenya	297
15.	Singapore	296
16.	Nigeria	287
17.	France	264
18.	Egypt	249
19.	Netherlands	228
20.	Italy	192
21.	Brazil	184
22.	Greece	180
23.	New Zealand	180
24.	Taiwan	179
25.	Ireland	167
⋮	⋮	⋮
⋮	⋮	⋮
⋮	⋮	⋮
136.	Guadeloupe	<u>1</u>
	Total	19,910

Source: Secure Berkeley Electronic Press Web site

## Appendix B. Summary of Previous Research

**Table B.1. Content analyses of Texas State University MPA ARPs**

Descriptive Categories	<u>Ilo</u> 102 ARPs submitted 1999-2005	<u>Almaguel</u> 125 ARPs submitted 1992-1996
Page volume	78.5	90.0
Level of government:		
Federal	5.9%	5.6%
State	56.9%	46.4%
Local/regional	30.4%	31.2%
Other (Non-profit)	6.9%	16.8%
Topics		
Policy making/analysis	20.6%	8.8%
Management/administration	5.9%	13.6%
Human/Social services/Human resources (HR)	4.9%	HR 22.4%
Program evaluation	42.2%	8.8%
Technology applications	9.8%	6.4%
Other	14.6%	40.0%
Research purpose		
Exploratory	41.2%	18.4%
Descriptive	29.4%	28.0%
Gauging	33.3%	0.0%
Decision-making	0.0%	0.0%
Explanatory	8.8%	6.4%
Undetermined	0.0%	0.0%
Predictive	0.0%	4.6%
Research method		
Interview	34%	.8%
Focus group	6%	3.2%
Document analysis	16%	8.0%
Field research	4%	N/A
Case study	8%	N/A
Survey	51%	39.2%
Content analysis	30%	2.4%
Experimental/quasi-experimental	1%	4.0%
Existing aggregated data	7%	N/A
Cost-benefit analysis	0%	N/A
Cost effectiveness analysis	0%	N/A

## Appendix C. Sample of Data Table

**Table C.1. Top 40 most-downloaded ARPs with variables related to the working hypotheses**

Title	V1: Serial number	V2: Title construction	V3: Award winner	V5: Bibliography size	V6b: State gov't	V7a: Wikipedia	V7b: Google Scholar	V7c: AltaVista	V19e: Explanation	V10d: Survey used	V12: Downloads
Child Protection in Texas: Caseworkers Attitudes and Perceptions Towards CPS Services	210	1	0	37	1	1	0	2	0	0	2,599
Perceptions of Texas Parks & Wildlife Game Wardens about Effectiveness of Law Enforcement Programs	5	0	0	27	1	1	0	11	0	1	2,058
A Study of the Relationship Between Absenteeism and Job Satisfaction, Certain Personal Characteristics, and Situational Factors for Employees in a Public Agency	241	0	0	41	0	0	0	5	1	1	1,843
A Description of Domestic Partner Benefit Policies of State, County, and City Governments	43	0	0	34	1	0	2	11	0	0	1,668
Applying the Andragogical Model of Adult Learning: A Case Study of the Texas Comptroller's Fiscal Management Division	209	1	0	67	1	0	0	11	0	1	1,623
Developing a Comprehensive Needs Assessment Model for Implementation in Continuing Education	34	0	0	38	1	0	3	9	0	1	1,603
Carcass Disposal Issues in Recent Disasters, Accepted Methods, and Suggested Plan to Mitigate Future Events	68	0	1	97	1	0	1	7	0	0	1,461
Performance Measurement Systems as a Planning Tool in Public Sector Organizations: Overcoming Obstacles to Implementation and Buy-In	175	1	0	94	0	0	2	5	0	0	1,370
Exploring the Effects of Specialized Sexual Behavior Treatment of Recidivism	30	0	1	50	1	0	0	7	1	0	1,271



Title	V1: Serial number	V2: Title construction	V3: Award winner	V5: Bibliography size	V6b: State gov't	V7a: Wikipedia	V7b: Google Scholar	V7c: Alta Vista	V19e: Explanation	V10d: Survey used	V12: Downloads
Introducing the Scorecard to Pharmacy Benefit Manager	20	0	0	46	0	0	1	8	0	1	1,257
Sports Facilities and Metropolitan Economic Development: The Impact of Professional Sports Facilities on Sales Tax Revenue in Metropolitan Statistical Areas	173	1	0	29	0	0	1	5	1	0	1,234
Comparing Physical Education Curriculums in Public Schools to a Model Type	74	0	0	22	1	0	2	9	0	1	1,214
A Comprehensive Assessment of the DWI-Education and Intervention Programs Administered by the Hays County Adult Probation Programs Department	33	0	0	32	0	0	1	6	1	0	1,186
An Information Security Risk Assessment Model for Public and University Administrators	109	0	0	32	1	1	1	13	0	1	1,180
The Impact of Advanced Placement and Dual Enrollment Programs on College Graduation	206	0	0	25	1	0	2	22	1	0	1,180
Success Through Succession: Implementing Succession Planning at the Texas Department of Insurance	185	1	0	32	1	0	2	10	0	0	1,144
Using Attitudes to Assess the Effectiveness of 360-Degree Performance Appraisal in San Marcos, Texas	176	0	0	35	0	0	0	5	0	0	1,133
DO MESS WITH IT!: A Sociopolitical Study of Littering and the Role of Southern and Nearby States	27	1	0	100	1	0	0	40	1	0	1,126
An Assessment of Texas State Agencies Employee Performance Appraisal Forms	201	0	0	38	1	0	0	8	0	0	1,114
Organizational Performance and Quality Management: An Analysis of Workforce Development Organizations in Texas	230	1	0	28	1	0	1	5	1	0	1,109
An Evaluation of Fingerprinting on Registered Nurse Licensure Rates in the State of Texas	126	0	0	32	1	0	0	9	1	0	1,100

Title	V1: Serial number	V2: Title construction	V3: Award winner	V5: Bibliography size	V6b: State gov't	V7a: Wikipedia	V7b: Google Scholar	V7c: AltaVista	V19e: Explanation	V10d: Survey used	V12: Downloads
A Benefit-Cost Analysis of the Wonder World Drive Overpass in San Marcos, Texas	104	0	0	36	0	1	1	31	0	0	1,087
Have perceptions changed among staff regarding parole officers' carrying firearms?: A description of changes in safety perceptions and supervisory styles at the Texas Department of Criminal Justice Parole Division	205	1	0	30	1	0	1	7	0	1	1,046
An Evaluation of the Snack Tax on the Obesity Rate of Maine	29	0	0	44	1	0	5	7	1	0	1,027
Analysis of Travis County Performance Appraisal Systems	38	0	0	43	0	0	2	6	0	1	1,000
Aftercare for Youth with Mental Health Disorders in the Juvenile Justice System: An Assessment of the Aftercare Program of Williamson County Juvenile Services	10	1	1	36	0	0	2	10	0	0	999
Civil-Military Relations in Turkey	248	0	0	58	0	0	14	8	0	0	958
Evaluation of Structured English Immersion and Bilingual Education on Reading Skills of Limited English Proficient Students in California and Texas	262	0	0	104	1	1	0	12	1	0	945
Civil-Military Relations in Emerging Democracies as Found in the Articles of <i>Armed Forces &amp; Society</i>	54	0	0	41	0	1	2	9	0	0	917
Group Dynamics & Power Structures: Toward a Greater Understanding of the Line-Staff Relationship Within the Austin Fire Department	96	1	1	43	0	0	3	9	0	1	913
Incorporating Personality Traits in Hiring: A Case Study of Central Texas Cities	258	1	0	45	0	0	1	9	0	1	898

Title	V1: Serial number	V2: Title construction	V3: Award winner	V5: Bibliography size	V6b: State gov't	V7a: Wikipedia	V7b: Google Scholar	V7c: AltaVista	V19e: Explanation	V10d: Survey used	V12: Downloads
A Descriptive Study of the Perceptions of Supervisors On How Three Types of Supervisory Management Training Influence Employees' Job Satisfaction and Motivation in Texas Department of Health	169	0	0	60	1	0	0	5	0	1	889
A Model Records Management System for Texas Public Utilities: An Information Science Tool for Public Managers	275	1	0	62	0	1	1	15	0	0	885
Human Resources Management: A Description of Professional Knowledge and an Examination of Intangible Qualities	3	1	0	24	0	0	0	7	0	0	867
A Study to Describe the Centralization/Decentralization of Human Resources Services Delivered at the City of Austin	90	0	0	45	0	0	0	8	0	1	864
A Location Quotient and Shift Share Analysis of Regional Economies in Texas	238	0	0	29	0	0	1	6	0	0	849
Assessment of Grievance Procedures in Austin and Large Texas City Governments	17	0	0	36	0	0	4	7	0	1	829
Regional Economic Development: An Economic Base Study and Shift-Share Analysis of Hays County, Texas	259	1	0	65	0	1	1	11	0	0	828
A Handbook of Community Services For the Elderly in Guadalupe County	35	0	0	143	0	0	0	6	0	0	815
Medically Fragile Children: A Comparison of Three States' Methods for Addressing Their Educational Needs	219	1	0	42	1	0	1	6	0	0	810

## Appendix D. Test of Results Reliability

Analysis results for APRs online as of 18 August 2009, with  
download totals measured as of 30 September 2009

### Descriptive categories

#### *Public administration-related categories*

**Table D.1. Level of government/sector**

Level of government sector*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 30 Sep 09 N=143,110	% of 143,110 downloads	Mean	Median	Standard deviation
Fed. gov't	16	5.5%	11,343	8.3%	708.9	507.0	489.7
State gov't	111	38.3%	61,299	45.0%	552.2	420.0	474.0
Local/regional	143	49.3%	70,053	51.5%	489.9	417.0	355.5
Non-profit	6	2.1%	4,202	3.1%	**	**	**
Other	32	11.0%	13,227	9.7%	413.3	333.5	333.4
Totals					493.5	411.5	383.4

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

**Table D.2. Topical categories**

Topical categories*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 30 Sep 09 N=143,110	% of 143,110 downloads	Mean	Median	Standard deviation
Policy making/analysis	57	19.7%	30,757	21.5%	539.6	471.0	389.3
Mgmt/admin	50	17.2%	24,292	17.0%	485.8	425.0	417.7
HR/social services	44	15.2%	30,138	21.1%	685.0	552.0	509.5
Program evaluation	94	32.4%	46,890	32.8%	498.8	346.0	457.6
Technology applications	16	5.5%	7,563	5.3%	472.7	419.0	256.3
Urban economics	21	7.2%	8,711	6.1%	414.8	318.0	307.4
Other	18	6.2%	7,646	5.3%	424.8	392.0	246.2
Totals					493.5	411.5	383.4

\* Use of more than one is possible

**Table D.3. Research purpose**

Research purpose*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 30 Sep 09 N=143,110	% of 143,110 downloads	Mean	Median	Standard deviation
Exploration	76	26.2%	35,826	25.0%	471.4	395.0	433.3
Descriptive	83	28.6%	36,564	25.5%	440.5	337.0	359.3
Gauging	89	30.7%	47,389	33.1%	532.5	477.0	359.6
Decision making	5	1.7%	3,784	2.6%	**	**	**
Explanation/ Prediction	48	16.6%	26,664	18.6%	555.5	420.0	436.0
Not determined	0	0.0%	0	0.0%			
Totals					493.5	411.5	383.4

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

**Table D.4. Research method**

Research method*	No. of ARPs N=290	% of 290 ARPs	No. of downloads 30 Sep 09 N=143,110	% of 143,110 downloads	Mean	Median	Standard deviation
Interview	75	25.9%	40,886	28.6%	545.1	425.0	419.6
Focus group	11	3.8%	6,191	4.3%	562.8	393.0	523.2
Document analysis	77	26.6%	36,749	25.7%	477.3	419.0	309.7
Case study	53	18.3%	26,529	18.5%	500.5	446.0	343.7
Survey	130	44.8%	61,844	43.2%	475.7	383.0	377.2
Content analysis	49	16.9%	23,708	16.6%	483.8	403.0	322.3
Existing aggregated data	60	20.7%	30,847	21.6%	514.1	421.5	381.6
Operations research	5	1.7%	3,784	2.6%	**	**	**
Totals					493.5	411.5	383.4

\* Use of more than one is possible

\*\* Too few downloads for meaningful averages

**Table D.5. Statistical technique**

Statistical technique*	No. of ARPs <i>N</i> =290	% of 290 APRs	No. of downloads 30 Sep 09 <i>N</i> =143,110	% of 143,110 downloads	Mean	Median	Standard deviation
Descriptive	203	70.0%	104,473	73.0%	514.6	429.0	390.2
Multivariate	51	17.6%	27,200	19.0%	533.3	420.0	430.1
Other	0	0.0%	0	0.0%			
None	47	16.2%	18,136	12.7%	385.9	346.0	258.0
Totals					493.5	411.5	383.4

\* Use of more than one is possible

### Technical-related categories

**Table D.6. Length of time on the Web**

Serial number	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
1-30	29	10.0%	19,544	13.7%	673.9	564.0	423.9
31-63	29	10.0%	19,047	13.3%	656.8	535.0	373.3
64-95	29	10.0%	9,879	6.9%	340.7	212.0	368.3
96-124	29	10.0%	14,979	10.5%	516.5	483.0	269.9
125-155	29	10.0%	10,951	7.7%	377.6	330.0	257.7
156-185	29	10.0%	14,917	10.4%	514.4	452.0	383.2
186-214	29	10.0%	17,688	12.4%	609.9	435.0	584.7
215-243	29	10.0%	13,756	9.6%	474.3	380.0	398.0
244-273	29	10.0%	15,433	10.8%	532.2	488.0	224.6
274-302	29	10.0%	6,916	4.8%	238.5	180.0	204.0
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Table D.7. Title construction**

Title construction	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
Two-part	135	46.6%	62,187	43.5%	460.6	393.0	369.6
One-part	155	53.4%	80,923	56.5%	522.1	420.0	393.9
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Table D.8. Award winner**

Award winner	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
Award	23	7.9%	12,453	8.7%	541.4	419.0	374.9
No award	267	92.1%	130,657	91.3%	489.4	410.0	384.5
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Table D.9. Page volume**

Page volume	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
≤ 50	6	2.1%	4,756	3.3%	792.7	782.0	417.4
51-75	83	28.6%	46,943	32.8%	565.6	449.0	465.3
76-100	93	32.1%	46,494	32.5%	499.9	403.0	370.4
101-125	62	21.4%	25,353	17.7%	408.9	363.5	258.1
126-150	27	9.3%	10,123	7.1%	374.9	303.0	347.6
≥ 151	19	6.6%	9,441	6.6%	496.9	462.0	351.8
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Table D.10. Bibliography size**

Bibliography size	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
≤ 25	13	4.5%	7,048	4.9%	542.2	420.0	387.4
26-35	77	26.6%	42,036	29.4%	545.9	461.0	386.3
36-45	78	26.9%	39,848	27.8%	510.9	381.0	455.2
46-55	49	16.9%	18,734	13.1%	382.3	314.0	267.1
56-65	34	11.7%	15,260	10.7%	448.8	427.5	281.7
≥ 66	39	13.4%	20,184	14.1%	517.5	465.0	409.3
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Table D.11. Search engine optimizing**

Search engine optimizers	No. of ARPs	% of APRs	No. of downloads 30 Sep 09	% of downloads	Mean	Median	Standard deviation
Wikipedia reference							
Yes	20	6.9%	16,815	11.7%	840.8	686.5	643.5
No	270	93.1%	126,295	88.3%	467.8	392.0	345.0
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4
Google Scholar citations							
0	138	47.6%	60,840	42.5%	440.9	337.0	413.6
1	81	27.9%	42,278	29.5%	522.0	452.0	320.4
2	39	13.4%	21,359	14.9%	547.7	449.0	417.7
≥ 3	32	11.0%	18,633	13.0%	582.3	557.5	330.5
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4
AltaVista-identified links							
≤ 4	51	17.6%	16,388	11.5%	321.3	269.0	383.6
5-6	122	42.1%	57,644	40.3%	472.5	413.5	325.3
7-8	59	20.3%	28,987	20.3%	491.3	415.0	341.7
≥ 9	58	20.0%	40,091	28.0%	691.2	601.0	453.1
Totals	290	100.0%	143,110	100.0%	493.5	411.5	383.4

**Working Hypotheses****Table D.12. Pearson correlations**

<i>N</i> = 290	State gov't	Explanation	Survey	Serial no.	Title constr	Award winner	Bibliography	Wikipedia	Google Scholar	Alta Vista
State gov't	1	.050	-.011	-.095	-.066	.031	-.052	-.046	-.149	-.070
Explanation		1	** -.234	.094	** -.155	-.062	-.014	-.048	-.076	.021
Survey			1	-.041	.132	.043	-.096	-.081	.021	-.082
Serial no.				1	.146	-.121	.101	.023	** -.173	.111
Title constr					1	-.044	.050	-.063	-.050	-.082
Award winner						1	.019	.021	** .246	.071
Bibliography							1	.179	.014	* .132
Wikipedia								1	-.009	** .243
Google Scholar									1	.026
Alta Vista										1

\*\* Correlation is significant at the 0.01 level (two-tailed).

\* Correlation is significant at the 0.05 level (two-tailed).

Dependent variable: ARP downloads as of 30 September 2009



**Table D.13. Multivariate regression analysis**

Independent variables	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	B	Std. error	Beta		
(Constant)	494.90	79.71		6.21	.000
<b>Sector - state government</b>	<b>110.37</b>	<b>44.67</b>	<b>.14</b>	<b>2.47</b>	<b>.014</b>
Research purpose - explanation	101.16	59.77	.10	1.69	.092
Research method - survey	-3.27	44.40	-.00	-.07	.941
<b>Serial number</b>	<b>-.68</b>	<b>.26</b>	<b>-.16</b>	<b>-2.67</b>	<b>.008</b>
Title construction	.56	44.16	.00	.01	.990
Award winner	-41.25	81.61	-.03	-.51	.614
Bibliography size	-1.23	1.09	-.07	-1.13	.259
<b>Wikipedia reference</b>	<b>382.54</b>	<b>87.59</b>	<b>.25</b>	<b>4.37</b>	<b>.000</b>
<b>Google Scholar citations</b>	<b>41.19</b>	<b>15.46</b>	<b>.16</b>	<b>2.67</b>	<b>.008</b>
AltaVista-identified links	5.49	3.56	.09	1.54	.124

Dependent variable: ARP downloads as of 30 September 2009

*N* = 290 ARPs

Model Summary

<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	<i>F</i> change
0.385	0.148	0.118	360.10	4.86

## Appendix E. Reanalysis with a Different Variable

Substituting exploration for explanation

**Table E.1. Pearson correlations**

<i>N</i> = 290	State gov't	Explor- ation	Survey	Serial no.	Title constr	Award winner	Biblio- graphy	Wiki- pedia	Google Scholar	Alta Vista
State gov't	1	-.066	-.011	-.095	-.066	.031	-.052	-.046	-.149*	-.070
Explor- ation		1	.078	-.079	.104*	.086	.022	-.007	.023	.017
Survey			1	-.041	.132*	.043	-.096	-.081	.021	-.082
Serial no.				1	.146*	-.121*	.101	.023	-.173**	.111
Title constr					1	-.044	.050	-.063	-.050	-.082
Award winner						1	.019	.021	.246**	.071
Biblio- graphy							1	.179**	.014	.132*
Wiki- pedia								1	-.009	.243**
Google Scholar									1	.026
Alta Vista										1

\* Correlation is significant at the 0.05 level (two-tailed)

\*\* Correlation is significant at the 0.01 level (two-tailed).

Dependent variable: ARP downloads as of 18 August 2009

**Table E.2. Multivariate regression analysis**

Independent variables	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	B	Std. error	Beta		
(Constant)	525.50	76.16		6.90	.000
<b>Sector - state government</b>	<b>105.72</b>	<b>43.00</b>	<b>.14</b>	<b>2.46</b>	<b>.015</b>
Research purpose - exploration	-27.91	47.06	-.03	-.59	.554
Research method - survey	-19.86	41.73	-.03	-.48	.634
<b>Serial number</b>	<b>-.73</b>	<b>.25</b>	<b>-.17</b>	<b>-2.96</b>	<b>.003</b>
Title construction	-8.19	42.21	-.01	-.19	.846
Award winner	-41.63	78.61	-.03	-.53	.597
Bibliography size	-1.29	1.04	-.07	-1.23	.220
<b>Wikipedia reference</b>	<b>344.60</b>	<b>83.94</b>	<b>.24</b>	<b>4.11</b>	<b>.000</b>
<b>Google Scholar citations</b>	<b>39.26</b>	<b>14.84</b>	<b>.16</b>	<b>2.65</b>	<b>.009</b>
AltaVista-identified links	4.98	3.42	.09	1.46	.146

Dependent variable: ARP downloads as of 18 August 2009

*N* = 290 ARPs

#### Model Summary

<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	<i>F</i> change
0.382	0.146	0.115	346.01	4.76