

# AIS Dissertations From 1986-2000: An Analysis Of Research Topic And Method

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## ABSTRACT

*This study identifies and examines accounting information systems (AIS) dissertations from 1986 through 2000 by research topic and method to provide insights into their contribution to accounting knowledge. This examination also identifies key universities where AIS dissertations have been produced by accounting faculty. AIS dissertation data are compared to Samuels and Steinbart (2002), which examines articles in the Journal of Information Systems (JIS) by AIS research topics and methods over the same period, as well as to articles in the International Journal of Accounting Information Systems (IJ AIS) (formerly Advances in Accounting Information Systems). Results indicate evidence of mirror, lead, and lag effects over the timeframe of study between AIS dissertations and JIS and IJ AIS articles with respect to research topics covered and methods utilized. Publication rates for these dissertations in JIS and IJ AIS are also provided. Finally, this study presents comparisons to other accounting dissertation studies.*

## INTRODUCTION

This study identifies and examines accounting information systems (AIS) dissertations from 1986 through 2000 by research topic and method for the purpose of providing insights into their contribution to accounting knowledge. This examination extends the work of Samuels and Steinbart (S&S) (2002), which examines research topics and methods of articles published in the *Journal of Information Systems (JIS)* from its inception in 1986 through 2000. This analysis compares AIS dissertations to the results of S&S (2002), as well as to the categorization of articles published in the *International Journal of Accounting Information Systems (IJ AIS)* (formerly *Advances in Accounting Information Systems*) from its inception in 1992 through 2000, to draw conclusions about trends in AIS dissertations.

*JIS* is a significant source for publishing AIS research (Hasselback et al., 2001; Baldwin et al., 2000; Daigle and Arnold, 2000; Zivney et al., 1995; Englebrecht et al., 1994). Similarly, *IJ AIS* has been an important publication outlet for AIS research (S&S, 2002; Baldwin et al., 2000; Daigle and Arnold, 2000). While AIS researchers publish in a wide variety of academic and practitioner journals, AIS dissertation trend analysis in this study focuses on comparisons to these two journals based on their classification as “high frequency” (in total and consistency) outlets for AIS academic research (Baldwin et al., 2000).<sup>1</sup> As the most consistent journals publishing AIS academic research over the timeframe of interest, a comparison of AIS dissertation trends to those of *JIS* and *IJ AIS* is very meaningful for gaining insights regarding AIS dissertation output.

Besides providing trend analysis, this study also seeks to spur future academic studies by providing AIS researchers with a listing of all identified AIS dissertations and noting those research topics/methods and combinations thereof that are typically (as well as those not typically) explored.<sup>2</sup> Additionally, this research lists universities that have generated the most AIS dissertations by accounting faculty during the period of this study and publication rates of these dissertations in *JIS* and *IJ AIS*. Researchers in AIS, accounting, and other disciplines can also gain insights about the development of an element of the AIS research domain and its current state from this study.

This paper is organized into the following sections: Literature Review, Data Collection, Descriptive Statistics, AIS Research Topics and Methods, AIS Dissertation Research Trends, and Comparisons with Previous Dissertation Studies. Limitations and Future Research, and Conclusions of the study also are presented.

## **LITERATURE REVIEW**

A number of studies focus on research productivity of accounting faculty, including its impact on promotion and tenure decisions (literature reviews of accounting education research addressing the topic of faculty research include: Watson et al., 2003; Apostolou et al. 2001; Rebele et al. 1998; Rebele et al. 1991). Fewer studies, however, examine the contribution of accounting dissertations to research. Abdolmohammadi et al. (1985) reviews the role of dissertations in accounting research careers. Based on responses to a survey of randomly selected accounting faculty listed in the 1983 Hasselback *Accounting Faculty Directory*, their results suggest: 1) the most popular topic and research method are financial accounting and analysis of published data, 2) those who fail to publish from their dissertation typically change their area or method in subsequent research, and 3) those with dissertation-based publications have higher subsequent research productivity.

Other studies of accounting dissertations focus on the subdiscipline of taxation. Brighton and Michaelsen (1985) compile and categorize 224 tax dissertations from 1967 to 1984 by research topic and method and comment on the common interdisciplinary nature of tax dissertations. They also provide a listing of tax dissertations by year with topics identified as a resource for researchers. O'Neil et al. (1988) categorize 172 tax dissertations by accounting students and 324 tax dissertations by non-accounting students (i.e., economics students) from 1977 through 1985 by topic and method, and report significant differences between the two groups. Based upon their results, they propose changes in the direction of tax education at the doctoral level to allow a broader perspective for research by accounting students.

Another study examines AIS dissertations. Ames (1998) identifies all faculty listed in the 1997 Hasselback *Accounting Faculty Directory* with a teaching/research interest in Systems who completed a dissertation between 1982 and 1997. Dissertation descriptions of each member identified are obtained from the *Comprehensive Dissertation Index* and reviewed. This approach identifies 109 AIS dissertations. The authors categorize each dissertation along three dimensions: (1) research method, (2) general role impacted by AIS (users, auditors, designers, or evaluators), and (3) interdisciplinary approach. Results suggest that AIS dissertations use a wide variety of research methods with field, case, and lab studies being most prevalent. Further, AIS dissertations mainly contribute to the needs of users, auditors, and designers; and, with the exception of auditing, are limited in interdisciplinary approach.

The present study extends work presented by accounting dissertation studies and provides additional insights into AIS research. This study employs a different approach than Ames (1998) for identifying and categorizing AIS dissertations. Additionally, classification results by research topic and methods are examined for trends, including comparisons to research published in the dominant AIS research outlets, *JIS* and *IJAIS*, throughout the timeframe of interest.

## **DATA COLLECTION**

The authors chose to delineate AIS dissertations and categorize them based on AIS research topic/method definitions espoused by S&S (2002) in their taxonomy of *JIS* articles (see Table 1). They also constrain the time period for review to 1986 through 2000 to allow comparisons to the S&S (2002) study.

**TABLE 1**  
**Research Topics and Methods**

**Research Topics:**

1. *Organization and Management of an IS*: Issues related to the various stages of the systems development life cycle. Examples include top management involvement in planning, the use of chargeback systems, and evaluating system effectiveness.
2. *Internal Control and Auditing*: Issues related to the design and evaluation of internal controls in information systems, or to the use of various types of audit tools and techniques to provide assurance about information systems.
3. *Judgment and Decision Making*: Issues concerning the use of systems and the effects of such use on individual or group decision-making.
4. *Databases*: Issues concerning the design and use of databases.
5. *Expert Systems, Artificial Intelligence, and Decision Aids*: Articles that focus on the design of expert systems or other artificial intelligence techniques.
6. *General AIS Frameworks*: Articles that develop frameworks to address broad AIS issues, such as the development of a research paradigm.
7. *The Accounting and Consulting Profession*: Articles that examine career-related issues in accounting and consulting.
8. *Educational Issues*: Articles that address curriculum design issues, describe instructional materials, or present syllabi for specific courses.

**Research Methods:**

1. *Survey*: Articles that gather data by use of questionnaires.
2. *Experiment*: Articles that use lab or field experiments to manipulate independent variables under controlled conditions.
3. *Modeling*: Articles that develop data models, economic models, or use analytical techniques to investigate a topic.
4. *Archival*: Articles that analyze historical empirical data, usually provided by third-party sources.
5. *Case Study*: Articles that examine, in depth, one or a few specific organizations in order to investigate hypothesized relationships or to generate propositions that can be investigated in future research.
6. *Literature Review*: Articles that primarily review prior research to propose general frameworks or specific topics for future research.
7. *Descriptive*: Articles that describe existing practice. These differ from case studies in that articles in this category do not focus in-depth on the experiences of one or a few specific organizations.
8. *Prescriptive*: Articles that develop logical arguments to support proposals for a new or improved way to address some issue. (Samuels and Steinbart 2002, 100-101, 105.)

The authors made a thorough and diligent effort to obtain all known AIS dissertations. Initially, they searched the *ProQuest Digital Dissertations* database performing multiple subject searches based on “Business Administration, Accounting (0272)” and “Information Science (0723).”<sup>3</sup> This process resulted in the identification of 3,956 dissertations, most from within the accounting discipline. Next, the authors independently perused the combined title listing to identify potential AIS dissertations based on the S&S (2002) AIS topic definitions for this study. A second data source was dissertation abstracts in various editions of *JIS* that identified 67 dissertations of graduates from 1986 through 2000.<sup>4</sup> Duplicate listings from both data sources were eliminated.

This identification task resulted in 323 dissertations for further consideration, with abstracts for each obtained. Then, the authors independently made three possible decisions about each dissertation: 1) include or exclude from the study based on the S&S (2002) AIS research topic definitions, 2) if included, determination of the AIS topic, and 3) if included, ascertain the research method utilized.<sup>5</sup> Although many dissertations could be classified under multiple topics or methods, the authors sought to identify both the predominant topic and method. Inter-rater agreement for coding on the abstracts was high after one pass, with 227 (70.3 percent) of the 323 abstracts eliminated or assigned to the same topic and method categories. Further independent assessments were made on the remaining 96 abstracts until total agreement was reached. Although a subjective and arbitrary process, the authors ultimately identified 220 AIS dissertations for this study.

Of those identified, 59 dissertations are from academics in disciplines other than accounting (e.g., management information systems, management, education, etc.).<sup>6</sup> This occurred because the *ProQuest* database delineates by subject and not by department. The authors considered the issue of whether to include these non-accounting dissertations. As part of the consideration, the S&S (2002) AIS research topics used to identify the dissertations are not restrictive by department. Further, they reviewed the 67 dissertation abstracts published in *JIS* during this period and determined that only 86.6 percent are by accounting faculty. They also reviewed the authors of

*JIS* and *IJAIS* main articles within the period of study and found that 80.8 percent and 85.9 percent, respectively, are accounting authors.<sup>7</sup> Of the 220 AIS dissertations identified, 73.2 percent are current accounting faculty based on the Hasselback *Accounting Faculty Directory 2002-2003*. This issue of whether to include dissertations of non-accounting academics was also pursued informally with some accounting colleagues who indicated that not all accounting faculty throughout the world are in the *Accounting Faculty Directory* (2002) (15 of these 59 non-accounting dissertations are from foreign schools) and that candidates for doctoral degrees in other disciplines (or those with accounting as a supporting field) have done accounting-related dissertations in the past. For these reasons, the authors elected to include the 59 dissertations by non-accounting authors in the study.

To allow comparisons with articles from academic journals both primarily devoted to publishing AIS research and in existence for a substantial period during the timeframe of interest, the authors also collected *IJAIS* data from its initial publication in 1992 through 2000. No volumes of this journal were published in 1994 or 1999. The authors coded all articles from *IJAIS* using the same methodology as S&S (2002), independently coding each article as to AIS research topic and method. Inter-rater agreement on first pass coding was high, with 49 (83.0 percent) of the 59 articles being assigned to the same AIS topic and method categories. They conducted additional independent passes through the remaining ten articles until total agreement was reached.

## **DESCRIPTIVE STATISTICS**

An examination of the final listing of 220 AIS dissertations provides some insights with respect to demographics. Some dissertations, as noted in the previous section, are from academic areas outside of accounting, plus contributions are made by universities worldwide. Another perspective of the population is degree awarded.<sup>8</sup> Approximately 85 percent are for doctorate of philosophy (PhD). Other degrees include: nine percent doctorates of business administration (DBA), one percent doctorates of education (EdD), and five percent foreign or other doctorate degrees. A review of AIS dissertations generated by year from 1986 through 2000 provides other interesting insights. Approximately 15 dissertations were completed per year from 1986 through 1985, except for 1992, which saw 24 completed. Dissertations per year from 1996 to 2000 declined slightly to an average of 11.

### **University Of Degree**

Additional knowledge can be gleaned from examining AIS dissertations by university of degree awarded. Meyer and Rigsby (2001) and Daigle and Arnold (2000) both analyzed research productivity in specific research areas of accounting and categorized results by university where doctoral degrees were obtained. These analyses, as well as examining AIS dissertations by university of degree awarded, provide interesting dimensions for educators and prospective doctoral students to use for assessing accounting programs. Therefore, the authors delineate the population of AIS dissertations by university of degree for those identified as Accounting faculty and list the schools that generated the most AIS dissertations (see Table 2).<sup>9</sup>

TABLE 2  
AIS Dissertations by University of Degree (Accounting Faculty Only) 1986-2000<sup>a</sup>

	University	Quantity
1	Virginia Polytechnic Institute and State University	7
2	Kent State University	6
	Michigan State University	6
	Texas A&M University	6
	The University of Memphis	6
	University of Nebraska	6
7	The University of Mississippi	5
	The University of Texas at Arlington	5
	The University of Utah	5
	University of Southern California	5
11	Georgia State University	4
	Indiana University	4
	The George Washington University	4
	The University of Tennessee	4
	University of Illinois	4
	University of South Carolina	4
	University of Wisconsin-Madison	4
18	Boston University	3
	Louisiana Tech University	3
	Mississippi State University	3
	Texas Tech University	3
	The University of Georgia	3
	The University of Kansas	3
	University of Arkansas	3
	University of Cincinnati	3
	University of Kentucky	3
	University of Waterloo	3

<sup>a</sup> Data for this table was reduced to include only the 161 Accounting faculty (220 Total AIS dissertations less 59 non-accounting faculty dissertations) from 1986 through 2000. Source: *ProQuest Digital Dissertations* and the *Journal of Information Systems*.

Results show Virginia Polytechnic Institute and State University awarded the most AIS degrees from 1986 to 2000 with seven, followed closely by Kent State University, Michigan State University, Texas A&M University, The University of Memphis, and University of Nebraska with six degrees each. Little separation exists between the top and second tier on this listing (by a total of only one dissertation), as well as from top to bottom (four dissertations). The 27 universities listed in this table collectively represent approximately 52 percent of AIS dissertations awarded in the timeframe used in this study. The schools on this ranking are primarily large, public institutions.<sup>10</sup> Caution should be exercised in the interpretation and generalization of these results, since they are heavily influenced by both specific faculty at a university and point in time.

### Publications From AIS Dissertations

The authors also examined articles published in *JIS* and *IJAIS* from 1986 through 2000 to identify publications derived from the 220 AIS Dissertations in this study to gain further insights about the role of dissertations. Results show that 26 dissertation authors (11.8 percent) published an article in *JIS* and 25 (11.4 percent) published an article in *IJAIS* during this time period, an approximately equal representation. Interestingly, 13 dissertation authors (5.9 percent) published in both journals.

Results also indicate that the dissertation authors accounted for 46 records (16.9 percent) of *JIS* articles and 34 records (29.8 percent) of *IJAIS* articles published during the period under study.<sup>11</sup> Although subjective, the authors compared dissertation titles and abstracts to *JIS* and *IJAIS* articles by authors. This procedure identified 18 records (6.6 percent) in *JIS* and 8 records (7.0 percent) in *IJAIS* related to the AIS dissertations in this study.<sup>12</sup> Both journals therefore produced similar percentage publication results from dissertations. These results suggest that many AIS dissertation results (approximately 93 percent of those identified) are not published in these two premier AIS academic journals.

An examination of AIS research topics and methods provides additional knowledge about the dissertation results that were published in *JIS* and *IJAIS*. For the 18 dissertation results published in *JIS*, two topics, “Judgment and Decision Making” (9) and “Organization and Management of an IS” (4), and one research method, “Experiment” (13), are dominant. In the eight dissertation results published in *IJAIS*, the primary topic is “Organization and Management of an IS” (5) and the key method is “Experiment” (4). An examination of combinations by AIS topic and method shows “Judgment and Decision Making” using the “Experiment” approach (9) as primary in *JIS*, while *IJAIS* has no predominant combinations.

### **AIS RESEARCH TOPICS AND METHODS**

Further insights about AIS dissertations can be obtained by examining AIS research topics and methods, individually and combined (see Table 3). The most often identified topic is “Organization and Management of an Information System (IS).” “Internal Control and Auditing,” “Judgment and Decision Making,” and “Expert Systems, Artificial Intelligence (AI), and Decision Aids” are approximately tied for second place. These four topics comprise approximately 87 percent of all AIS dissertations identified. No dissertations examine “General AIS Frameworks” and only a limited number focus on “Databases,” “The Accounting and Consulting Profession,” or “Educational Issues.”

Most AIS dissertations identified utilize the “Experiment” approach, followed by “Modeling” and “Survey” methods. Approximately 78 percent of all AIS dissertations identified use these three methods. No dissertations use “Literature Review,” and only a limited number employ “Archival,” “Descriptive,” or “Prescriptive” research methods.

With respect to combinations by topic and method, AIS dissertations identified that focus on “Organization and Management of an IS” primarily use the “Survey” method, while others use “Modeling” or a “Case Study” approach. Identified dissertations directed at “Internal Control and Auditing” typically use an “Experiment” method, followed by “Survey” or “Modeling” approaches. Most dissertations examining “Judgment and Decision Making” employ the “Experiment” method, while those interested in “Expert Systems, AI & Decision Aids” use “Modeling,” followed by “Experiment” approaches. These nine out of 64 combinations represent 70 percent of AIS dissertations identified. No AIS dissertations were identified for 28 possible combinations from 1986 through 2000. The high concentration of most dissertations within few topic/method combinations may indicate that those interested in AIS dissertation research are recommended by advisors to focus on certain types of research.

### **AIS DISSERTATION RESEARCH TRENDS**

Further insights can be derived from reviewing AIS dissertation trends over time, including comparisons to published research in *JIS* and *IJAIS*.<sup>13</sup> The authors follow the method of, and make comparisons to, *JIS* article results from S&S (2002) and articles published in *IJAIS* from 1992 through 2000, utilizing three five-year intervals.<sup>14, 15</sup>

TABLE 3  
 AIS Dissertations  
 Research Methods Used To Examine AIS Research Topics  
 1986–2000<sup>a</sup>

Research Topic	Research Method								TOTALS	
	Survey	Experiment	Modeling	Archival	Case Study	Literature Review	Descriptive	Prescriptive		
Organization and Management of an IS	22	4	14	4	13	0	5	2	64	29%
Internal Control and Auditing	9	13	9	1	4	0	2	2	40	18%
Judgment and Decision Making	0	37	4	0	1	0	0	1	43	20%
Databases	3	3	2	0	0	0	1	4	13	6%
Expert Systems, AI & Decision Aids	1	14	23	0	2	0	3	1	44	20%
General AIS Frameworks	0	0	0	0	0	0	0	0	0	0%
The Accounting & Consulting Profession	2	0	0	0	0	0	1	1	4	2%
Educational Issues	4	6	0	1	1	0	0	0	12	5%
TOTALS	41	77	52	6	21	0	12	11	220	100%
	19%	35%	24%	3%	10%	0%	5%	5%	100%	

<sup>a</sup> Table adapted from Samuels and Steinbart 2002, 106. Note: Some percentages do not sum to 100 percent due to rounding.

### AIS Research Topic Trends

As previously noted, “Organization and Management of an IS” is the most covered AIS dissertation topic during the fifteen year period of this study, followed by an approximate three-way tie of “Internal Control and Auditing,” “Judgment and Decision Making,” and “Expert Systems, AI & Decision Aids.” Table 4: Panel A indicates trends in each of these topic areas over time being quite different. Some topics increase in coverage over time (“Judgment and Decision Making,” “Databases,” and “Expert Systems, AI & Decision Aids”), while others steadily decline (“Organization and Management of an IS” and “Internal Control and Auditing”).

“Organization and Management of an IS” is the most covered topic in each of the first two intervals, and is a close second to “Expert Systems, AI & Decision Aids” from 1996 through 2000. “Internal Control and Auditing” is the second most covered topic from 1986-1990, but fell to fourth place from 1996 through 2000. “Databases” increases percentage-wise in both the second and third intervals after none are noted in the first. While not covered as often as other topics, “Educational Issues” is the most consistently covered topic from one interval to the next.

### AIS Research Topic Comparisons With Published Research

Other insights about AIS dissertation research topic trends can be obtained by comparing dissertation classification results to research published in *JIS* and *IJAIS* during the period of this study.<sup>16</sup> Table 4: Panel A provides a breakdown by research topic (including as a percentage of respective totals) for both publication sources in three five-year intervals. Because *IJAIS* began publication in 1992, data from this journal are only provided for the second and third intervals.

“Organization and Management of an IS” is the most represented topic in both AIS dissertations and articles published in *JIS* from 1986 through 1990, with a slightly higher percentage among dissertations. Mirror effects are evident for “Internal Control and Auditing,” with similar percentages between the two sources. Although small in

quantity, “The Accounting and Consulting Profession” is also very similarly covered. Topics that differ substantially are “Judgment and Decision Making,” “Expert Systems, AI & Decision Aids” and “Educational Issues,” with a greater percentage of dissertations focusing on the former two topics and a greater percentage of articles published in *JIS* focusing on the latter topic. In this time interval, no AIS dissertations examine “Databases” or “General AIS Frameworks,” while some *JIS* articles do.

A number of differences are also noted between AIS dissertations and *JIS* and *IJAIS* over the 1991 through 1995 interval. Both “Organization and Management of an IS” and “Internal Control and Auditing” are respectively covered more as a percentage in AIS dissertations than in either *JIS* or *IJAIS*. “Databases,” “General AIS Frameworks,” and “Educational Issues” are covered more percentage-wise by articles published in *JIS* and/or *IJAIS* than in AIS dissertations. The percentage number of “Judgment and Decision Making” studies mirrors each other for all three sources. “Expert Systems, AI & Decision Aids” is covered more as a percentage by AIS dissertations than articles published in *JIS*, while percentage coverage between AIS dissertations and *IJAIS* show mirror effects. Limited mirror effects are also present between AIS dissertations and *JIS* articles for “The Accounting & Consulting Profession.”

Similar to the first two intervals, many differences exist between AIS dissertations and the two journals of interest in the last five-year interval. “Expert Systems, AI & Decision Aids” is represented much more as a percentage in AIS dissertation research than in either journal. However, “Judgment and Decision Making,” “General AIS Frameworks,” and “Educational Issues” is covered more by articles percentage-wise in both *JIS* and *IJAIS*. A relatively smaller percentage of dissertations focus on “Organization and Management of an IS” from 1996 through 2000, as compared to articles published in the journals. “Internal Control and Auditing” and “Databases” between AIS dissertations and *JIS* mirror each other for this period.

Comparing all intervals to each other, additional comments can be made about possible trends in research topics covered in AIS dissertations. The percentage of articles focusing on “Expert Systems, AI & Decision Aids” increases as the percentage of AIS dissertations remains strong, and the percentage of dissertations even increases from the second to third intervals. This indicates the possibility that AIS dissertations lead articles published in *JIS* and *IJAIS* for this particular topic. Other comparisons of the three intervals indicate some leading effects by AIS dissertations for articles published in *JIS* and *IJAIS* for research focusing on both “Organization and Management of an IS” and “Judgment and Decision Making.” With respect to lagging, the percentage of AIS dissertations focusing on “Internal Control and Auditing” appears to diminish from one interval to the next as its percentage coverage in articles in *JIS* and *IJAIS* diminishes in preceding intervals. Further comparisons of the three intervals indicate some lag effects by AIS dissertations to published research in “Databases.”



TABLE 4: PANEL B  
 AIS Dissertations and *JIS* and *IJAIS* Articles by Research Method  
 1986-2000<sup>a</sup>

Research Method	1st Five Years (1986-1990)				2nd Five Years (1991-1995)					3rd Five Years (1996-2000)					TOTALS							
	AIS Diss.	%	<i>JIS</i> Art.	%	AIS Diss.	%	<i>JIS</i> Art.	%	<i>IJAIS</i> Art.	%	AIS Diss.	%	<i>JIS</i> Art.	%	<i>IJAIS</i> Art.	%	AIS Diss.	%	<i>JIS</i> Art.	%	<i>IJAIS</i> Art.	%
Survey	25	32	17	24	12	14	9	22	2	10	4	7	6	20	4	10	41	19	32	23	6	10
Experiment	23	29	6	8	28	33	13	32	6	30	26	46	10	33	10	26	77	35	29	20	16	27
Modeling	14	18	4	6	24	28	9	22	4	20	14	25	3	10	9	23	52	24	16	11	13	22
Archival	3	4	3	4	2	2	0	0	1	5	1	2	3	10	5	13	6	3	6	4	6	10
Case Study	5	6	2	3	11	13	1	2	0	0	5	9	0	0	1	3	21	10	3	2	1	2
Literature Review	0	0	8	11	0	0	2	5	0	0	0	0	3	10	3	8	0	0	13	9	3	5
Descriptive	6	8	15	21	2	2	4	10	3	15	4	7	4	13	1	3	12	5	23	16	4	7
Prescriptive	2	3	16	23	6	7	3	7	4	20	3	5	1	3	6	15	11	5	20	14	10	17
TOTALS	78	100	71	100	85	100	41	100	20	100	57	100	30	100	39	100	220	100	142	100	59	100

<sup>a</sup> Table adapted and quantities of *Journal of Information Systems (JIS)* articles from Samuels and Steinbart 2002, 106. AIS Diss. = AIS Dissertations. Data for the *International Journal of Accounting Information Systems (IJAIS)* (formerly *Advances in Accounting Information Systems*) is shown from 1992-2000. There were no volumes of this journal in 1994 or 1999. Note: Some percentages do not sum to 100 percent due to rounding.

**AIS Research Method Trends**

Further knowledge can be gained by reviewing research method trends of AIS dissertations (see Table 4: Panel B). The “Experiment” method was not only used most often during the entire period of study, it was used most often in each of the last two five-year intervals, increasing in use each timeframe. The percentage of AIS dissertations that used “Modeling” and “Case Study” techniques also consistently increased over time. While the use of the “Survey” approach was third over the entire period of study, the percentage of dissertations that used this method declined each succeeding five-year time interval. “Survey” was the most used method from 1986 through 1990 but was tied for fourth from 1996 through 2000. “Archival,” “Descriptive,” and “Prescriptive” methods were consistently low from one interval to the next and “Literature Review” nonexistent.

**AIS Research Method Comparisons With Published Research**

Table 4: Panel B compares AIS dissertation method trends to the categorization of studies published in *JIS* and *IJAIS* over five-year intervals, as applicable. Similar to the analyses of AIS research topics, a number of differences are noted with respect to research methods between AIS dissertations and articles published in the two AIS journals. From 1986 through 1990, AIS dissertations use “Survey,” “Experiment,” and “Modeling” methods more often than articles published in *JIS*. However, *JIS* articles focus more on “Literature Review,” “Descriptive,” and “Prescriptive” approaches. The “Archival” and “Case Study” methods somewhat mirror each other and are used infrequently by both dissertations and *JIS* articles.

In the 1991 through 1995 interval, while method differences continue to exist, some are more pronounced in this time period than the previous one. This time interval shows that “Survey” research is utilized more often as a percentage in articles published in *JIS* than in AIS dissertations. While AIS dissertations still use “Modeling” techniques more often percentage-wise, the difference with articles published in both *JIS* and *IJAIS* is not as great as

the previous five-year interval. Used equally as a percentage in AIS dissertations and articles published in *JIS* from 1986 through 1990, the “Archival” method is used slightly more often as a percentage in articles published in *IJAIS* than in AIS dissertations in the second interval. Consistent with the first interval, “Literature Review,” “Descriptive,” and “Prescriptive” studies are still conducted more often as a percentage of research published in *JIS* and *IJAIS*. Also, while AIS dissertations use “Experiment” techniques much more often percentage-wise from 1986 through 1990, its percentage use in AIS dissertations mirrors the two journals from 1991 through 1995. The “Case Study” method is used even more often in the second interval as a percentage in AIS dissertations than in the two journals.

With respect to the last time interval, 1996 through 2000, little commonality appears to exist between research methods used in AIS dissertations and the two journals. While use of the “Survey” approach in AIS dissertations as a percentage declines during this interval, this method remains consistent in its percentage usage in articles in both *JIS* and *IJAIS*. Percentage use of the “Archival” method also increases in articles published in both journals, but its percentage use in AIS dissertations remains unchanged from the second interval. Similar to the first two time intervals, “Literature Review,” “Descriptive,” and “Prescriptive” methods are used more often as a percentage in research published in *JIS* and *IJAIS*. The percentage use of “Experiment” approaches increases dramatically amongst AIS dissertations from 1996 through 2000, especially compared to its percentage usage in the two AIS journals. The “Modeling” technique, which is used more often as a percentage in AIS dissertations in the first two intervals, is used similarly by both AIS dissertations and articles published in *IJAIS* for the last time interval. The “Case Study” approach continues to be used more often in AIS dissertations.

Comparing all intervals to each other, a few other possible trends are detected. With articles published in *JIS* and *IJAIS* employing the “Experiment” approach more in the last two intervals than the first, its percentage use in AIS dissertations was much greater in the first interval. This difference indicates that AIS dissertations may have led these two journals for this particular method early in the timeframe of this study. AIS dissertations also appear to have led the two journals early on with respect to “Modeling.” These two leadings may be expected considering that AIS dissertations led in “Organization and Management of an IS,” “Judgment and Decision Making,” and “Expert Systems, AI & Decision Aid,” research topics which typically use one or more of these methods (Table 4: Panel A).

Further comparisons of the three intervals indicate that AIS dissertations slightly lag early on behind articles published in *JIS* and *IJAIS* with respect to the “Survey” method. Its percentage use amongst AIS dissertations declines in the second interval, although the percentage of articles published in *JIS* remains somewhat consistent with its percentage in the first interval. No lag effects appear to exist from the second to third period, however, with percentage usage in AIS dissertations decreasing while “Survey” percentage use amongst the journals remaining steady with previous intervals. A slight lag effect also occurs for “Descriptive” and “Prescriptive” methods between the second and third period for dissertations and *JIS*. Further, the percentage use of the “Archival” method in articles in the two journals increases each interval while its use in AIS dissertations remains somewhat constant.

## **COMPARISONS WITH PREVIOUS DISSERTATION STUDIES**

While some previous studies of accounting dissertations cover another subdiscipline and different timeframes and methodologies than those of this study, some general comparisons can be drawn between the present study and previous research. This study shows that, similar to the results of Brighton and Michaelsen (1985) and O’Neil et al. (1988) involving tax dissertations, a wide variety of research topics are covered by AIS dissertations. One area of consistency between research topics in both taxation and AIS is that the vast majority of dissertations cover practice-oriented topics with little directed at education. A variety of research methods are also used in dissertations of both subdisciplines. While some methods are used more often in one subdiscipline than in the other (for example, the “Archival” method in tax dissertations and “Experiment” approach in AIS dissertations), many dissertations in both subdisciplines have used similar methods with regular frequency, including “Survey” and “Modeling” approaches.

A number of comparisons can be made also between the results of this study and those of Ames (1998), which also focused on AIS dissertations. This study identifies 220 AIS dissertations from 1986 through 2000 while Ames (1998) identifies 109 from 1982 through 1997. Besides the slight difference in time period, the reason more dissertations are identified in this study is that Ames (1998) focuses exclusively on academics designated as faculty

with a teaching/research interest in “Systems” in the 1997 Hasselback *Accounting Faculty Directory*. However, this study identifies AIS dissertations without the limitation of only considering “Systems” faculty. The difference in the number of dissertations identified provides an insight similar to a comment by O’Neil et al. (1988) that many non-accountants (i.e., economists) write tax-related dissertations. It appears that many non-“Systems” designated faculty and non-accounting academics write AIS dissertations. While no formal analysis is made of the interdisciplinary nature of AIS dissertations, many are interdisciplinary when considering the previous insight plus the research topics covered.

Ames (1998) provides no analysis by AIS topic area but does examine research method. Different categories are used in this study, but some comparisons can be made. Consistent with Ames (1998), the “Experiment” and “Survey” research methods are used extensively in AIS dissertations. “Modeling” is also a consistently used method. Both studies show that the “Archival” studies are infrequent in AIS dissertations. While Ames (1998) reports that “Case Studies” are used considerably (25%), this study shows a much lower usage (10%). This difference may be attributed to variances in classification methods between the two studies.

### **LIMITATIONS AND FUTURE RESEARCH**

While this study provides unique insights about AIS dissertation research, limitations do exist. Not all individuals who receive AIS degrees submit their dissertation abstracts to *JIS* nor *ProQuest Digital Dissertations* for publication. Therefore, some AIS dissertations may not be identified and included in this study. The authors’ categorizations of dissertations as AIS or not, as well as by research topic and method, are subjective and arbitrary based on the guidance of topic and method definitions in S&S (2002). Additionally, categorization of some dissertations is difficult due to multiple topics covered or methods used. Limitations also exist when comparing AIS dissertation trends to those of studies published in *JIS* and *IJAIS*. Although the two journals are the primary outlets devoted to publishing AIS academic research, AIS researchers publish in a wide spectrum of journals (Baldwin et al., 2000). Finally, the authors coded the AIS dissertations and *IJAIS* articles while dependent on S&S (2002) codes for *JIS* articles. This could affect consistency in coding.

Expanded analyses across a broad range of journals, both academic and professional, that publish AIS research may glean further insights into the research role of AIS dissertations. The dissertations identified in the present examination were only compared to articles published in *JIS* and *IJAIS* because these two journals were the only ones recognized with a high-frequency for publishing AIS research during the timeframe of the study (1986-2000) (Baldwin, 2000). Today, there are additional journal outlets recognized that publish a high-frequency of AIS academic research: *The Review of Business Information Systems* published its ninth volume in 2005, and the *Journal of Emerging Technologies in Accounting* published its first volume in 2004. Future comparisons of AIS dissertations can be made to these and other academic journals that publish AIS research with a high-frequency, as well.

Future studies can also focus on identifying where results from AIS dissertations are published, whether in academic and/or practitioner-oriented journals. Of the eight journals identified by Baldwin (2000) as having a high-frequency in publishing AIS articles, six are professional-oriented journals: *Journal of Accountancy*, *CPA Journal*, *Internal Auditor*, *Information Systems Audit and Control Journal*, *Management Accounting*, and *Internal Auditing*. Articles in these and other professional-oriented journals may be based on the results from dissertations. Research studies directed at all high-frequency AIS journals (both academic and professional) can provide useful insights to help us understand how knowledge gained from AIS dissertations shapes both research and the accounting profession.

Finally, research could be directed at examining the motivation of doctoral students in their selection of AIS research topics and methods and their reticence in submitting results from their dissertations to *JIS* and *IJAIS* (or other publication outlets). Correlations between AIS research topics and methods could also be fully explored.

### **CONCLUSIONS**

This study extends knowledge about AIS dissertations completed from 1986 through 2000 and their contribution to the AIS research domain. The authors identify 220 AIS dissertations, primarily from the accounting

discipline, that examine a wide range of research topics and use a number of different research methods. Similar to the trend for accounting dissertations in general, the quantity of AIS dissertations decreased in more recent years (Hasselback, 2002). Quantity ranking of AIS dissertations by university of degree for only accounting faculty also suggests that the schools involved in this specialized area of accounting are large, public institutions. The publication rates for AIS dissertations identified in *JIS* and *IJAIS* are very low, approximately 10 percent. This presents a tremendous opportunity for authors of AIS dissertations to develop papers derived from their research for consideration of publication in these two journals.

The analyses focusing on AIS research topics and methods and their related trends provide additional knowledge about AIS dissertations. Certain topics and methods have dominated AIS dissertation research, with some topics and/or methods increasing, and others decreasing, in coverage over the timeframe of the study. Over the fifteen years examined “Organization and Management of an Information System” is the primary topic covered, followed by approximate equal coverage of “Internal Control and Auditing,” “Judgment and Decision Making,” and “Expert Systems, Artificial Intelligence, and Decision Aids.” These four topics comprise 87 percent of AIS dissertations identified. The primary research method identified is “Experiment,” followed by “Modeling” and “Survey.” These three methods comprise 78 percent of all AIS dissertations identified. The predominant topic and method combinations are: “Judgment and Decision Making” with “Experiment,” “Expert Systems, AI & Decision Aids” with “Modeling,” and “Organization and Management of an IS” with “Survey.” These three (out of 64 possible combinations) represent 37 percent of the total dissertations.

Analyses by research topics and methods utilizing three five-year intervals provide further insights about the role of AIS dissertations. Percentage increases in coverage for some research topics over time are noted: “Judgment and Decision Making,” “Databases,” and “Expert Systems, AI & Decision Aids”, while others decrease: “Organization and Management of an IS” and “Internal Control and Auditing”. Similarly, the “Experiment”, “Modeling,” and “Case Study” research methods evidence percentage increases over time while “Survey” decrease.

A comparison of topics and methods for AIS dissertations with articles published in *JIS* and *IJAIS* in three five-year intervals shows some evidence of mirror, lead, and lag effects. For AIS topics, significant mirror effects are suggested in the 1986 through 1990 period for “Internal Control and Auditing” and in 1991 through 1995 period for “Judgment and Decision Making,”. Lead effects are also noted for “Expert Systems, AI & Decision Aids” and lag effects are suggested for “Internal Control and Auditing” during the entire period of study. For research methods, a notable mirror effect is indicated in the 1991 through 1995 period for “Experiment,” as well as lead effects for “Experiment” and “Modeling,” and lag effects for “Survey” over the entire time period.

Overall, these trend analyses evidence knowledge about the focus of AIS dissertations and their evolution over the timeframe of this study. Such analyses provide insights for those seeking to understand the contribution of AIS dissertation research to the accounting knowledge domain. Further, this study identifies under-examined AIS research topics and methods and publication opportunities for authors of AIS dissertations.

## ENDNOTES

1. The other dominant AIS academic research journal is *The Review of Business Information Systems* (formerly *The Review of Accounting Information Systems*) which began publication in Winter 1997. This AIS journal was not included in the present study due to the limited number of years of existence (four years of data) for comparisons.
2. A listing of AIS dissertations identified and used in this study is available from the authors.
3. *ProQuest Digital Dissertations* database contains over 1.6 million dissertation abstracts from all disciplines. To test the *ProQuest* database for completeness, the authors performed individual searches for all 91 schools offering doctorates or concentrations in accounting as identified by J. R. Hasselback (2002) in the *Accounting Faculty Directory*. Dissertations from all 91 schools were identified.
4. W. Thomas Lin compiled the dissertation abstracts in *JIS* from 1986 through 1988, and Ralph E. Viator compiled them from 1997 through 2001.

5. S&S (2002) identifies eight different AIS research topics and eight different research methods. This allows for 64 different combinations by research topic and method.
6. The authors utilized the *Accounting Faculty Directory* (2002) by J. R. Hasselback to ascertain whether an author of a dissertation was in the accounting discipline or not.
7. For comparison with another area of accounting research, Hutchison and White (2003) note that accounting faculty represent 89 percent of the authors of main articles in *The Journal of the American Taxation Association* from 1979 through 2000, and Hutchison and White (2004) find that 83.3 percent of the authors in their tax article database from 1980 through 2000 are accounting faculty.
8. Since *ProQuest Digital Dissertations* does not delineate degrees by department awarded, the study is limited to only generalizations about degrees and recipients.
9. Some dissertations may not have been identified for some schools due to failure by the author to submit their dissertation abstract to *JIS* or *ProQuest Digital Dissertations* for publication.
10. Interestingly, only three schools: Virginia Polytechnic Institute and State University, The University of Texas at Arlington, and the University of Kansas out of the 27 schools listed in Table 2 are identified in the Calderon et al. (2002) study as universities that offered full-fledged AIS programs (undergraduate and/or graduate) among 148 universities with accounting accredited programs by The Association to Advance Collegiate Schools of Business (AACSB).
11. The authors created article databases for *JIS* and *AiAIS/IJAIS*. Each author of an article represents one record in the database. The databases are restricted to only main articles and excluded editorials, book reviews, discussant comments, reports, dissertation summaries, and educational software reviews.
12. Abdolmohammadi et al. (1985) reports that 31 percent of the respondents in their study publish articles directly from their dissertations in an academic journal. Further, academic publications from accounting dissertations have decreased over time: 43 percent for those completed in the 1950s, 41 percent for those completed in the 1960s, 27 percent for those completed in the 1970s, and 28 percent for those completed in the 1980s.
13. The authors examination includes three specific trend types: “Mirroring“ which implies similar results between two data sources in the same time interval, “Leading” which suggests that the impact of the data source of interest influences a similar reaction in the next time interval by another data source, and “Lagging,” the opposite of leading, which indicates that the data source of interest has a similar reaction in the next time interval due to the influence of another data source. “Mirroring” can occur in one time interval with “Leading” or “Lagging” effects present between the same time interval and the next or previous period.
14. Unfortunately, the AIS dissertations could only be identified by year and represent 1986 through 2000. The S&S (2002) study is based on 15 years of *JIS* editions (Fall 1986 through Spring 2001.) The *AiAIS/IJAIS* editions represent 1992 through 2000, with no volumes of this journal in 1994 or 1999. Therefore, five-year comparisons are matched based on their respective time periods.
15. The *JIS* research study by S&S (2002) only includes articles from the Academic, Practice, and Education categories. They also omit the 2000 Supplement, six commissioned articles, and discussant’s comments. Therefore, the authors omit discussant’s comments in *IJAIS* to allow more meaningful comparisons.
16. Mirroring between AIS dissertations and journal articles may suggest that AIS researchers immediately influence doctoral candidates in their selection of research topics or methods. Further, AIS dissertation leading possibly shows new doctoral graduates bring their research topics and methods to the literature at a later time or publish in the literature studies related to their dissertations. At the same time, lagging may represent that AIS researchers identify and contribute to the literature new research topics and methods, and then doctoral students upon reviewing the literature further pursue these topics and methods. Finally, mirroring effects can be independent or compounded by the involvement of lead/lag effects as well.

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