AIS Dissertations:
Are They Helping To Define
The Research Domain?

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Abstract

The initial research experience of most accounting information systems (AIS) academics is the dissertation. It often forms the basis for much of the academic's continuing research and interests. This paper explores the emphasis of AIS dissertations in an effort to determine if they contribute to the research domain. The results show that, in fact, the dissertations employ a variety of research methodologies, and contribute significantly to the needs of users, auditors, and designers. However, with the exception of the field of auditing there is a noticeable lack of interdisciplinary research and a growing tendency to be seduced by technology. Such a pattern does not bode well for the AIS research domain and may contribute to a "field devoid of theory and general principles" (Weber, 1987).

Introduction

*R*esearch in accounting information systems (AIS) has taken different forms and gone in different directions since its inception. In an effort to help the AIS field focus on the research domain Weber (1987) has gone so far as to state that research in the general field of information systems (IS) (of which AIS is generally regarded as a subset) has not been forthcoming. He notes, for example, that past research has not been "well-anchored" and, in fact, "the most frequently referenced article is a *critique* of the IS field (Ackoff, 1964)" (emphasis in original, p. 5).

Weber contends that three factors have inhibited research in the systems area. Those three inhibiting factors are (1) a concern with developing frameworks; (2) the seduction of

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technology; and (3) the lure and design of construction. He states that research in IS will progress only with a strong paradigm. The paradigm may either be developed within the field of AIS or "borrowed" from another discipline.

McCarthy (1987) has expressed the concern that AIS researchers engage in too much research that is shallow or "soft." He asserts that "as a general rule, we can only expect the research traditions (and hence, respectability) of our discipline to grow to the extent that researchers...begin to make "hard" research choices." More recently, Sutton (1992) lamented that "the ... AIS discipline has long suffered from an absence of identity."

Sutton has proposed that there are ways in which the AIS discipline can quickly improve its research. He suggests "(1) an increased use of theory in developing testable hypotheses, and

(2) rigorous testing of the conjectures that have been put forth by prior research" (1992, p. 10).

In an effort to understand the research domain of AIS, it would be instructive to review the beginnings of researchers within the AIS discipline. This paper reviews the dissertation focus of accounting faculty in the accounting information systems area. Because the dissertation experience forms the initial research base for most academics it may be a useful indicator of possible research interests and the direction of future research. Further, because dissertations are generally supervised by faculty members with research interests in the specified area, the dissertation topic and focus are often strongly influenced by established researchers. Other published research in this area tends only to be a summary of AIS dissertations rather than an analysis of their contributions to the field (Viator, 1997).

Methods of Categorization

Because the current research is an effort to understand the dissertation focus of academics it is necessary to be able to categorize the dissertations for analysis and discussion. The natural question and concern at this point is how to most effectively and efficiently categorize the dissertations in question in order to evaluate them.

Research Methodology

In the past, several methods of categorizations have been developed in both the area of AIS and the broader field of management information systems (MIS). Cushing states that frameworks "have an important role to play in the development of a body of scientific research literature on MIS" (1990, p.40). In the area of MIS, various research frameworks have been developed and found to be useful tools. Ives et al. (1980) synthesized five of the most prominent previous studies in MIS [Mason and Mitroff, (1973); Chervany et al., (1971); Lucas, (1973);

Mock, (1973); Gorry and Scott Morton, (1971)] in developing a fairly comprehensive and useful framework. These five studies represent a general cross section of research models and includes a broad spectrum of interests and views.[1] Further they relied on the research strategies from Van Horn (1973) in developing appropriate categorizations. The categorizations from their research are: (1) case studies; (2) field studies and field tests; (3) laboratory studies; (4) non-data research strategies; and (5) unknown research strategies. The categorizations of Ives et al. are very useful in gaining an understanding of the research strategies which have been employed by AIS academics. Additionally, Cushing (1990) asserts that the framework of Ives et al. in particular has had a significant impact on the area of MIS.

Role of the IS

Beyond the area of research strategy of dissertations there are other categorizations that can also reveal much about the current state of academic researchers in AIS. Specifically, the American Accounting Association (AAA) Committee on Contemporary Approaches to Teaching Accounting Information Systems (Mock, 1987) issued a report specifying four general roles or activities which are impacted by AIS.

The roles were identified because they are typical of the experiences that future professionals in accounting will encounter during their careers and interaction with information systems. The four general roles identified by the committee are: "(1) *users* of information systems and systems output, (2) *auditors* of accounting information systems and their outputs, (3) *designers* of information systems for use by others, and (4) *evaluators* of the effectiveness and efficiency of information systems" (emphasis in original, p. 130.) Even though the committee's report was directed at the content of what is taught in AIS courses, the report is likely to have a potentially important impact on future research in the field (Bell et al., 1993; Bailey, 1994).

Interdisciplinary Approach

In a broader vein, research in any area is often not easily confined to a narrow set of parameters. Much research is interdisciplinary and may readily draw from a multitude of academic disciplines or value sets (Bahm, 1977; Dogan and Pahre, 1990; Klein, 1990.)

Klein (1990, p. 85-94) says that researchers involved in interdisciplinary research may engage in "borrowing" from other disciplines. Kinneavy (1980, p. 144) says that such borrowing or knowledge transfer may occur for several reasons: (1) to help structure a relatively unstructured domain; (2) to simplify a domain; (3) to complete a domain; (4) to explain a domain; (5) to enable a domain to get a complete picture of its own framework; and (6) to allow for experimentation where the domain does not permit it.

All of these reasons apply to the current concern for understanding the AIS research domain. Therefore, research in the area of AIS could draw from other accounting areas such as auditing, tax, financial, governmental and managerial accounting as well as outside disciplines such as psychology, economics, computer science (technology), cognitive science, and behavioral science.

In summary, this paper will review doctoral dissertations of AIS faculty and categorize each dissertation. Knowing the initial research focus of AIS faculty may help to understand the current domain of AIS researchers. The dissertations will all be categorized according to the three methods already discussed. That is, (1) according to the research method employed, as described by Ives et al., slightly modified to include the category of Archival Research, (2) according to the four general roles of AIS as outlined by the AAA, and (3) from an interdisciplinary view.

The Ives model has been chosen because it helps to determine the research strategies that have dominated AIS dissertations since 1982. Further, the research conducted by Ives et al. (1980) has validated the model and established its usefulness for the current project.

The categorizations established by the AAA have been chosen because they will help to more clearly determine the intended focus of dissertations. That is, are AIS dissertations primarily concerned with the impact of AIS on users, or how the AIS involves the auditors, and so forth.

Finally, this research has chosen to review the interdisciplinary approach of AIS dissertations to determine if new researchers are making an effort to "borrow" from other disciplines. Such "borrowing" helps to anchor a new discipline and would help provide structure and understanding of the domain of AIS for the reasons stated above as explained by Kinneavy. The lack of solid anchoring and firm structuring is a major concern of current critics and a potential source of future substantive research. In fact, "we all continue to pay for the general lack of rigor" in the past (Sutton, 1992). The following section describes the process by which the data were gathered and organized.

Data Gathering

A listing of accounting faculty members who have been identified as systems faculty was derived from the Hasselback (1997) Accounting Faculty Directory. From that list those faculty members who had completed a doctoral dissertation since 1982 were included for this study.

Once the population was identified, the Comprehensive Dissertation Index (1982-1997) was consulted to obtain a description of the dissertation of each faculty member. Each of the dissertations was then classified and categorized based on the descriptions listed in the index.

There were 334 faculty members listed in the AIS area who completed their dissertations since 1982. Of those, 11 descriptions could not be located in the dissertation index.

Each description was reviewed and categorized by the three methods selected for this research, that is: (1) research methodology, (2) role of the IS, and (3) by interdisciplinary approach. In those cases where the dissertation employed more than one research methodology, or role, etc. the dominant categorization was chosen.

This review determined that of the 323 dissertations studied, approximately two-thirds were not systems related. Specifically, of the 323 faculty listed in Hasselback as having AIS interests only 109 of the dissertations were related to the field of AIS. More than ten years ago Campbell (1987) noted the low proportion of AIS faculty who actually have training in the field of AIS. That trend has apparently contin-

time, specifically the three five-year time periods 1982-1986, 1987-1991 and 1992-1996. As can be seen, AIS researchers employed all methodologies during the dissertation phase. Beginning in 1987 the percentage of dissertations employing Case Studies dropped by nearly one-third while the percentages of dissertations employing other methods all increased. That trend reversed itself again during the period beginning in 1992.

The one exception to that trend was the fairly steady percentage of dissertations that utilized the Non-Data Research methodology. This methodology sustained a relatively modest yet stable ten percentage of all AIS dissertations after 1986. This may be a pleasant sign for the field of AIS since those dissertations in the Non-Data arena were often efforts at modeling and theory development. It is also interesting to note that the number of AIS dissertations jumped seventy-eight percent from the first five-year period to the second yet suffered a setback of nearly thirty percent in the final period.

Table 1
Dissertation By Research Methodology

Methodology	1988-1992	%	1982-1987	%	Total	%
Case Studies	16	22.9	14	29.2	30	25.4
Field Studies/Tests	21	30.0	10	20.8	31	26.3
Lab Studies	17	24.3	12	25.0	29	24.6
Non-Data Research	13	18.6	3	6.3	16	13.6
Archival Research	3	4.3	2	4.2	5	4.2
Not Known	0	0.0	7	14.6	7	5.9
Total	70	100.0	48	100.0	109	100.0

ued unabated to the present. The following discussion concerns the results of the categorizations of the 109 AIS dissertations as well as a brief review of those that are non-systems.

Results

Following the framework of Ives et al. the categorization of the research methodology is detailed in Table 1. The Table details a breakdown not only by methodology but also over

The categorization of the dissertations by roles as defined by the AAA is shown in Table 2. Some interesting changes occurred with the categories of Users, Auditors and Designers. There was a dramatic increase in the percentage of dissertations that focus on the role of the AIS with regard to the Designers at the same time that the percentage of dissertations focusing on Auditors suffered a decline. This is consistent with the changes that are noted in Table 3 that will be discussed shortly. Another noteworthy

difference seen in Table 2 is the spike in the middle five-year period of dissertations dealing with Users. This is consistent with the increase in the use of outside disciplines such as cognitive and behavioral science, which are noted in Table 3. During the period 1987-1991 there appears to have been an increase in the focus on the User from a psychological perspective for those involved in AIS dissertations. The final category of Evaluators appears to be a relatively small yet stable area of interest for AIS researchers by attracting approximately one-tenth of the dissertations.

researchers borrowed heavily from auditing, the trend is declining. This is noted by the drop from nearly sixty percent to less than forty percent of the total dissertations. As noted above, a very interesting rend occurred during the years 1987-1991. During this time the interest in borrowing form the field of psychology tripled from the previous period. This occurred at the same time as an increase in the focus on Users shown in Table 2. However, in both Tables the trends were reversed in the final period.

Table 2
Dissertation Categorized By Roles

Roles*	1988-1992	%	1982-1987	%	Total	%
Users	33	47.1	19	39.6	52	44.1
Auditors	19	27.1	17	35.4	36	30.5
Designers	13	18.6	8	16.7	21	17.8
Evaluators	5	7.1	3	6.3	8	6.8
Unknown	0	0.0	1	2.1	1	0.8
Total	70	100.0	48	100.0	109	100.0

* As defined by the AAA Committee on Contemporary Approaches to Teaching Accounting Information Systems

The categorization by interdisciplinary approach listed in Table 3 shows that the most frequent discipline from which AIS researchers borrow is another accounting discipline, that being auditing. However, despite the fact that

The second most frequent approach shown in Table 3 is that of computer science. The trend to utilize computer science has been steadily increasing until it now encompasses over forty percent of all AIS dissertations. The in-

Table 3
Dissertation Categorized By Interdisciplinary Approach

Discipline	1988-1992	%	1982-1987	%	Total	%
Systems	19	27.1	11	22.9	30	25.4
Auditing	22	31.4	22	45.8	44	37.3
Financial	1	1.4	2	4.2	3	2.5
Managerial	3	4.3	1	2.1	4	3.4
Economics	1	1.4	0	0.0	1	0.8
Computer Science	8	11.4	0	0.0	8	6.8
Cognitive Science	9	12.9	8	16.7	17	14.4
Behavioral Science	6	8.6	0	0.0	6	5.1
Other	1	1.4	4	8.3	5	4.2
Total	70	100.0	48	100.0	109	100.0

crease in computer science related dissertations should not be surprising, however, given the recent history of research dealing with issues of technology. For example, in 1992 Sutton noted that the "area of Expert Systems (ES) has been the new fad, swallowing up most of the recent efforts of AIS researchers." (Sutton, 1992; p.8) This appears to bear out the concerns expressed by Weber that AIS researchers are "seduced by technology" which could be troubling for the future of the AIS research domain. This increasing interest in computer science and technology is also consistent with the growing percentage of dissertations focusing on Designers in Table 2, which was discussed earlier.

The beginning of this section pointed out that a large percentage of all professors listed as having an interest in AIS do not have a dissertation related to the field of AIS. Table 4 shows the specific numbers and Table 5 has a listing of the disciplines in which those professors initially began their research careers. While the raw numbers of professors involved in AIS dissertations has increased over time, the percentage of professors teaching AIS without an AIS related dissertation continues to be nearly two-thirds. Table 5 shows that the field from which the AIS field has drawn its largest number of professors has traditionally been the financial accounting area. This should not be surprising since financial accounting has a rich and deep history in the field of accounting in general. It is interesting to note, however, that in the most recent five-year period the percentage of professors drawn to AIS from financial accounting fell by slightly more than one-half.

What has been traditionally the second largest area to migrate to AIS has been the field of auditing. This seems very reasonable since there is a natural relationship between the two fields. In fact, beginning in 1992 auditing passed financial accounting as the largest non-AIS field to contribute professors to AIS. However, despite the increase in professors from the field of auditing the area of financial accounting continues to be a major contributor of AIS professors. It is not known if those professors from financial accounting who identify themselves as AIS teachers currently conduct their research in the field of AIS or in their "home base" of financial accounting.

Discussion of the Results

Judging from the results, Weber's concerns are probably still generally valid. In the most recent time period there has been an increase in the "seduction of technology" shown by an increase in the dissertations related to the field of computer science. The increase feeds Weber's last two factors which inhibit the field of IS. This may not be surprising given the published research extolling the opportunities available in areas involving recent technological advances (Gal and Steinbart, 1987; Reuber, 1988). On the other hand, the increase in Non-Data research shown in Table 1 is generally an attempt at modeling which may possibly help to establish research paradigms. If these efforts are successful then they may offset what has been a continued interest in a technology-based research that may not yield long-term paradigms for the AIS field of research.

Table 4
Dissertation Focus of Professors Listed as AIS Professors

Dissertation Focus	1982 -1986	%	1987 -1991	%	1992 -1996	%	Total	%
Systems	27	28.7	48	36.4	34	35.1	109	33.7
Non-Systems	67	71.3	84	63.6	63	64.9	214	66.3
Total	94	100.0	132	100.0	97	100.0	323	100.0

Table 5
Dissertation Categorized by Interdisciplinary Approach
For Those Systems Professors With Non-Systems Dissertation

Discipline	1988-1992	%	1982-1987	%	Total	%
Auditing	9	13.6	16	19.8	25	17.0
Financial Actg	37	56.1	40	49.4	77	52.4
Managerial Actg	2	3.0	6	7.4	8	5.4
Tax Accounting	5	7.6	2	2.5	7	4.8
Governmental	2	3.0	2	2.5	4	2.7
Economics	0	0.0	2	2.5	2	1.4
Computer Science	0	0.0	2	2.5	2	1.4
Cognitive Science	4	6.1	3	3.7	7	4.8
Behavioral Science	1	1.5	4	4.9	5	3.4
Psychology	1	1.5	1	1.2	2	1.4
Other	5	7.6	3	3.7	8	5.4
Total	66	100.0	81	100.0	147	100.0

Further, Kinneavy's hopeful suggestions that a research domain may be more clearly structured, explained, and understood by borrowing from other disciplines is not so hopeful unless we are indeed borrowing from the field of auditing. Unfortunately, as Table 3 shows, the trend is toward a *decrease* of borrowing from the field of auditing. At the same time, with the exception of psychology, other disciplines do not show an appreciable increase of borrowing during the dissertation phase of an academic's research. This is unfortunate since as Sutton (1992) suggested "we must immerse ourselves in relevant literature in psychology, management, economics, and so forth to integrate theories that will help explain the IS issues explored in our research."

Finally, a question remains as to the fact that over half of AIS academics did not engage in a systems related dissertation. This could be a possible result of the fact that many academics teach in a multitude of areas in which they do not research. This may be understandable since a concern was raised by McCarthy (1987) when he stated that those "faculty members who choose to move into teaching [AIS] face what appears to be a dilemma. They can teach in AIS and continue to research and service

the mainstream, or they can choose to move wholly into what many of their colleagues consider to be an underdeveloped field with somewhat limited publication opportunities." The "somewhat limited publication opportunities" have been recently been established by Doney. (1998). He showed that in the top accounting journals only 7 of more than six hundred published journal articles dealt with AIS.

Summary and Limitations

The dissertation emphasis of AIS faculty since 1982 were reviewed and categorized. Categorizing dissertations based solely on the descriptions provided in the dissertation abstract is a challenging experience. Because the description is necessarily a summary of the much larger dissertation experience a great deal of information is excluded that could conceivably be useful to the present research project. As a result, the validity of the categorizations is limited to the extent that the summaries are appropriately descriptive. Despite such a limitation, the present research provides a useful review of the dominant focus of recent dissertations and a starting point to discuss the contribution of AIS dissertations to the AIS research domain.

AIS faculty have employed a wide variety of research methodologies with some recent increase in Non-Data type research since 1988. If this has the net effect of leading to strong paradigms or theoretical developments then the field of AIS will be greatly enhanced.

Categorizations of dissertations by the roles defined by the AAA show most of the research focused on Users, Auditors, and Designers with only a small emphasis on Evaluators. There does not appear to be a significant amount of interdisciplinary research occurring at the dissertation level except for research involving the fields of auditing and computer science. Additionally, the amount of research borrowing from the field of auditing has been declining. In contrast, the increase of borrowing from the field of computer science may indicate an increase in the "seduction of technology."

The results do not support the hope that a clear understanding of the research domain of AIS is being strengthened or defined as a result of the dissertations of emerging faculty. This suggests that perhaps we may be continuing in an infancy stage (Reneau and Grabski, 1987). If that is the case then Weber's (1987) concern is very unsettling when he said that "only fickle disciplines are driven by the events of the day. The end result is a field devoid of theory and general principles." (1987, p. 7)

Suggestions For Future Research

Of interest to future researchers in this area is the question of whether those whose dissertation training began outside of the field of AIS are teaching in AIS while researching in other fields or if they both teach and research in the field of AIS. This could be accomplished by a search of published research of those who are listed as AIS professors.

It would also be of interest if future research could discover if the rewards offered to those who teach and research in the field of AIS

are similar to those offered to professors in other areas. This may be especially interesting in light of Doney's research referred to earlier. 📖

Endnote

1. For a more involved discussion of these five research models refer to Ives et al. since a detailed discussion is not appropriate in the present article.

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