

What are Agricultural Economics Ph.D. Students Learning about Agribusiness Research Methods and Subject Areas¹



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Abstract

Despite widespread demand for agribusiness Ph.D. graduates, and numerous departments offering specializations in agribusiness, the agricultural economics profession still lacks a widely accepted specification of “agribusiness” as an academic sub-field. This ambiguity not only limits any assessment of agribusiness Ph.D.-level training, but also undermines the academic endeavors of those interested in pursuing agribusiness-focused research and graduate instruction. Yet, most agricultural economics Ph.D. students, particularly those who self-identify as having a specialization in agribusiness, have had some exposure to many, but certainly not all, of the core subject areas and research methods germane to the sub-field. For example, numerous Departments of Agricultural Economics are offering courses that cover strategic management, finance, and supply chain management subject areas (57% of students responded they had at least one class within the department on these subjects). What appears to be widely missing is coursework in human resource management (7% of students indicated they had a class in this subject) and certain analytic techniques, particularly conjoint, cluster and factor analyses (22% of students indicated these subjects were covered in classes in the department). Also of note, case study methods are not being used by agribusiness students in their graduate research.

Introduction

Recent developments in the agricultural economics profession suggest a growing emphasis on “agribusiness” topics in graduate programs. First, many

universities have begun offering Masters degree programs in Agribusiness that differ significantly from traditional Master of Science programs in agricultural economics (Boland et al., 1999), while a growing number of agricultural economics graduate programs are offering Ph.D. fields in agribusiness (Table 1). Second, a large number of recent job offerings at agricultural economics departments have

Table 1. Ph.D. Programs in Agricultural Economics that offer a Field in Agribusiness*

Program	Written Field Exam in Agribusiness?	Estimated Percent of Total Ph.D. Students taking field	Average Number of Courses Taken in College of Business
Univ of California, Berkeley	-	New Fall 2002	-
Colorado State Univ.	Yes	30	“not usually done”
Univ. of Florida	Yes	10 to 15	1
Univ. of Georgia	No	20	4
Univ. of Illinois	No	10 to 30	Min. of 2, normally 3
Kansas State Univ.	No	20	1 to 2
Michigan State Univ.	Yes	10 to 20	1 to 2
Univ. of Missouri	Yes	60	3 to 4
Univ. of Nebraska	No	10	4 to 5
Ohio State Univ.	Yes	10	4 to 6
Purdue Univ.	No	33	3
Texas A&M Univ.	Yes	40 to 50	3

*These data were compiled from personal correspondences (email and telephone) with graduate program coordinators and other faculty at each of the named institutions.

specified agribusiness as an important component of the position descriptions (Table 2). Boland and Oleen (2001) report similar results for the agricultural economics profession, noting, “at least 39 academic positions and 17 government positions have been advertised in the area of marketing and management since 1997.” Finally, there has been increasing interest in research methods closely associated with agribusiness research --methods that differ from the traditional econometric and math programming approaches pursued in most agricultural economics research programs. For example, several pre- and post-conference workshops at recent annual meetings of the American Agricultural Economics Association (AAEA) have featured these methods.

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Table 2. Area of Focus for Tenure-Track Positions Advertised in the 2001 Issues of the AAEA Exchange *

Area of Focus	Approximate Number of Positions
Agribusiness Management and Finance	19
Environmental/Resource Economics	11
Trade and Agricultural (commodity) marketing	9
Production/Farm Management	4
Policy	3

*These data were compiled from the six 2001 issues of the American Agricultural Economics Association's newsletter, *The Exchange*. Some job listings listed multiple categories and were counted twice.

With these developments as a backdrop, the objective of this paper is to investigate what research methods and subject areas today's Ph.D. students in agricultural economics, specifically those interested in "agribusiness," are learning.

Methods

This study utilizes the results from a series of telephone interviews of graduate program coordinators, and a web-based survey (available upon request) of current Ph.D. students and recent graduates of Ph.D. programs in agricultural economics. Requests to complete the survey were sent via e-mail to all members of the American Agricultural Economics Association Graduate Student Section (AAEA-GSS). We also solicited the aid of graduate program coordinators and all members of the USDA-supported Western Coordinating Committee on Agribusiness (WCC-72), asking these colleagues to forward our

requests to all appropriate graduate students or recent graduates. The letter of request specifically asked students and recent graduates to complete the survey if they felt they either had an "agribusiness" specialization, might consider applying for a faculty position announced as an agribusiness position, or might seek employment in industry. A brief summary of the respondents is presented in Table 3.

Results are not intended to be representative of certain schools, as many schools only had one respondent. In fact, in the sections that follow, no claim of "representativeness" or generalizations of findings are made about these data. This survey was preliminary and exploratory in nature, and we only attempted to get an initial snapshot of agribusiness students and to generate discussions among our colleagues as to what skills Ph.D. students are learning to analyze agribusiness issues.

Results

There were 53 respondents, with 30 reporting an "agribusiness specialization." These data give some insight into the topics Ph.D. students in agricultural economics are learning. Presented with a list of 24 topics, respondents were asked whether they had

learned about various methods of analyses and subject areas, and if so, in what context (i.e., in classes taught in their home department, in classes taught outside their department, through research with their professors, and/or in seminars). Respondents also could choose an "other" category, but this is not reported in the results for brevity, as there were only two cases where the respondent indicated that the sole source of learning about the given topic was from some other setting. Also, four topics originally listed in the survey are not reported in the results that follow as it appears there might have been some misunderstanding of the meaning of the topic, or because few data were gathered. These topics were accounting, structural equations modeling, consumer behavior theory, and marketing management.

Figures 1-5 show the percent of students who reported learning

Table 3. Respondent Profile, Web Survey of Current and Recently Graduated Agricultural Economics Ph.D. Students, Conducted in May, 2002.

University Attended	Number of Students with Specializations (according to student) in the following areas:										
	# of Responses	# currently enrolled	Agribusiness	Econometrics	Theory	Environmental	International	I/O	Marketing	Resource	Other
Auburn Univ.	1	1	1	0	0	1	1	0	1	1	0
Colorado State Univ.	2	1	2	0	0	0	0	0	2	0	0
Cornell Univ.	1	0	0	1	0	0	0	0	1	0	0
Kansas State Univ.	3	1	2	0	1	0	0	0	2	1	1
Louisiana State Univ.	1	1	0	1	0	1	1	1	1	1	0
Michigan State Univ.	1	0	0	1	0	0	1	0	0	0	0
Mississippi State Univ.	1	0	0	0	0	0	0	0	0	0	0
Oklahoma State Univ.	1	0	1	0	0	0	0	0	0	0	1
Oregon State Univ.	1	1	0	0	0	1	0	0	0	1	0
Purdue Univ.	7	5	7	1	0	1	2	2	2	1	4
Texas A&M Univ.	6	4	2	3	1	0	2	2	1	2	2
Texas Tech Univ.	2	1	0	1	0	0	0	0	0	0	0
Ohio State Univ.	2	2	2	1	0	1	1	0	2	1	1
Univ. of California, Berkeley	1	1	0	0	0	1	0	0	0	0	0
Univ. of California, Davis	1	1	1	0	0	0	0	0	0	1	0
Univ. of Florida	10	10	0	5	2	3	5	5	6	3	0
Univ. of Illinois	5	0	5	1	0	1	1	2	1	1	5
Univ. of Kentucky	1	0	1	0	0	1	1	0	1	1	1
Univ. of Missouri	5	1	5	1	1	0	0	3	2	3	2
Univ. of Nebraska	1	0	1	0	0	0	0	1	1	0	1
TOTAL	53	30	30	16	5	11	14	16	24	17	18

about each of the 20 topics. Data are presented to indicate where students had learned this material (i.e., in agricultural economics classes, classes outside agricultural economics, research, and/or seminars). The survey allowed multiple responses to this question, and many respondents indicated that they had learned about the topics in more than one setting. In these figures, respondents are separated into two categories: those who reported that they had a specialization in agribusiness and those who did not.

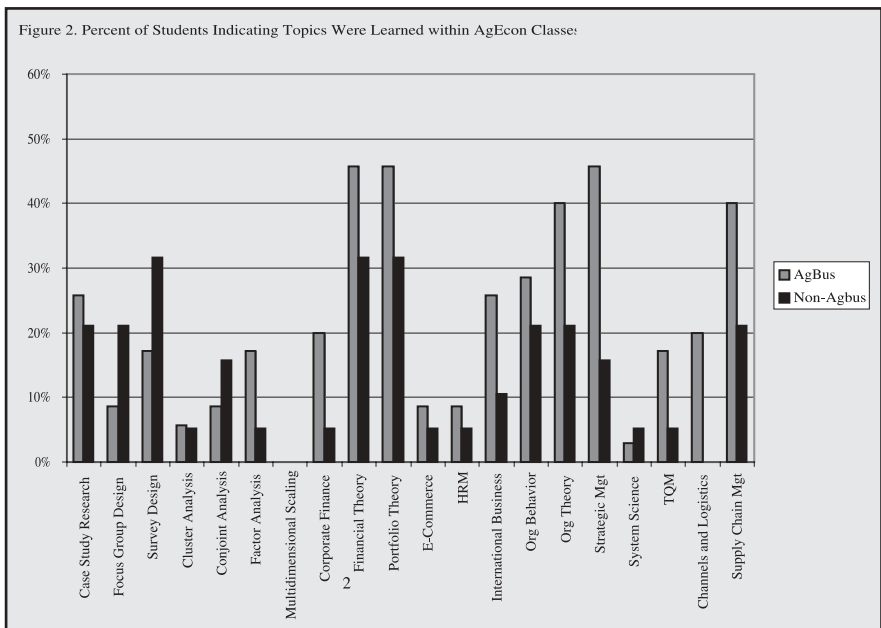
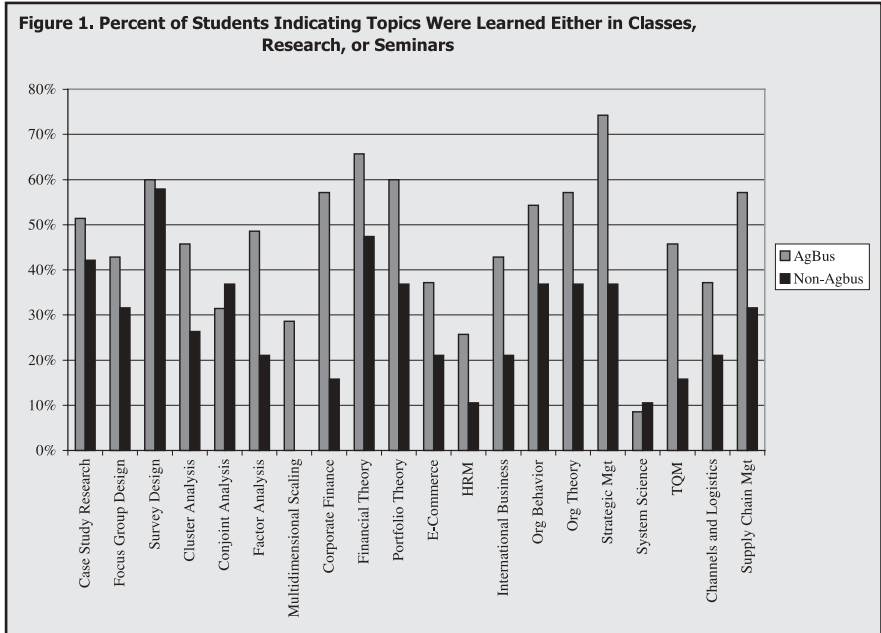
Overall, students who identified as having an agribusiness specialization were more likely to be exposed to the methods and subjects we considered to be representative of agribusiness research. Strategic management was the most covered subject, with over 70% of agribusiness students and approximately 37% of other students indicating exposure to the subject (Figure 1).

Nearly 60% of both types of students were exposed to survey design, whereas over 40% of agribusiness and 30% of other students were exposed to focus group design. In general, finance and management subject areas were more often covered than analytic techniques such as conjoint analysis, cluster analysis and factor analysis.

Figures 2 and 3 begin to show where students are learning agribusiness topics by comparing the percent of students who learned about a given topic in agricultural economics classes versus the percent who learned in classes in other departments. Financial and management subject areas were more often covered in agricultural economics classes for the students with agribusiness specializations, although additional finance courses appear to be taken outside a home department. Management is covered less outside a department, most likely because the students feel they are getting adequately exposed to management subjects within their departments. These results collaborate the findings from another question on the survey, in which respondents were asked to indicate the number of courses other than economics that they had taken from the College of Business. Students with a specialization in agribusiness took, on average, 2.4 courses,

while other students took, on average, 1.1 courses. For all students, the number of courses taken from the College of Business ranged from zero to six.

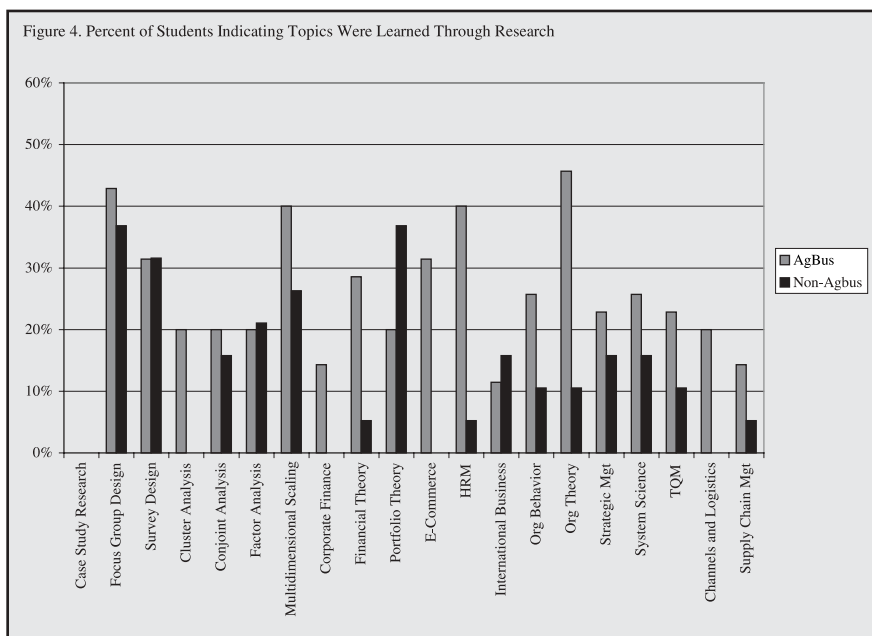
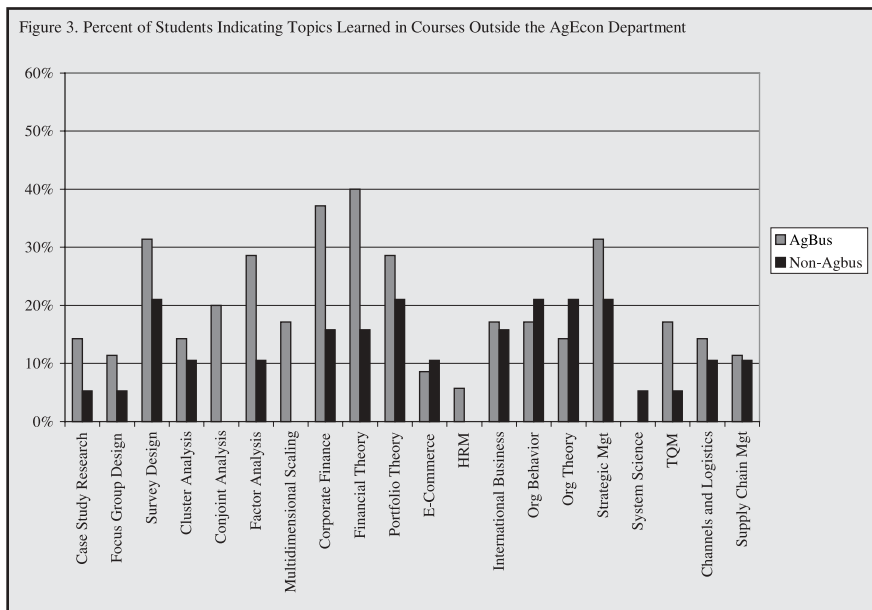
Since subjects learned in classes do not always correlate directly to research, Figure 4 is presented to show what topics students were using in research with their professors. Interestingly, no students indicated they were exposed to case study research through research with their professors. This



suggests although some students are exposed to case studies in class (Figure 2), they may not be learning how case studies can be used in research. Also, students who identified as having an agribusiness specialization were using a wider array of analytic techniques (20% using cluster analysis, conjoint

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analysis, and factor analysis, 40% using multi-dimensional scaling) than other students (0% cluster analysis, 15% conjoint, 21% factor, and 25% multi-dimensional scaling). Excluding portfolio theory, the same was true of finance subjects.



In management subjects, human resource management, which is a topic less than 10% of all students indicated was covered in any of their classes, was used by 40% of the agribusiness students in their research. Organizational theory, taught mainly in agricultural economics classes, was used by nearly 50% of agribusiness students in their research. Only the agribusiness students used channels and logistics, e-commerce, and corporate finance in research.

Finally, respondents were asked what topics they were exposed to in seminars (Figure 5). Approximately 30% of agribusiness students indi-

cated they were learning through seminars about case study research, topics in finance, organizational behavior, strategic management and supply chain management. Other students were less likely to report this type of exposure to the listed agribusiness topics. Reasons for this would need to be confirmed with further research but possible explanations could include that these students were less interested in attending seminars on agribusiness topics, or that they were at locations where these topics are not offered (perhaps because their graduate programs do not offer agribusiness specializations).

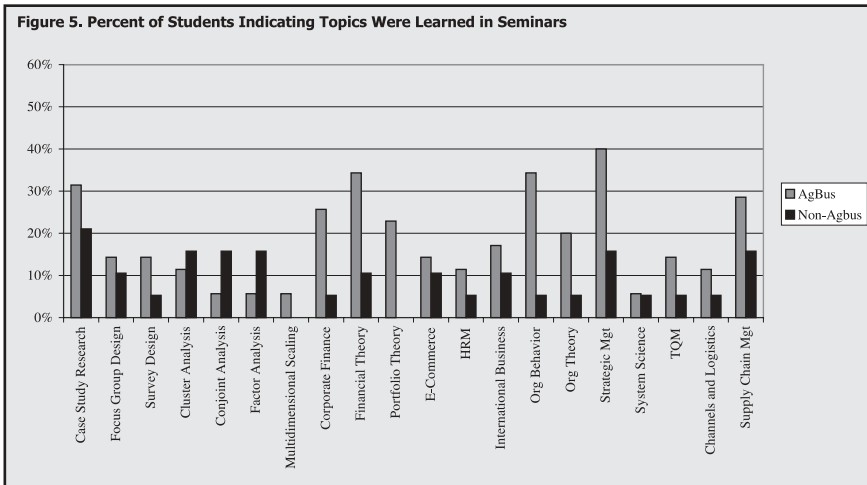
Discussion

Much like agribusiness research itself, data collection for this paper presented numerous challenges. The term “agribusiness” is a catch-all term with as many definitions as there are individuals attempting to define it. This ambiguity had several implications for this study. First, it is difficult to identify a target population of recent graduates and current students who are trained in “agribusiness” since that very term lacks a consensus definition. Second, since “agribusiness” as a field is still quite new to the agricultural economics profession, there are small-number limitations that undermine survey-based data collection targeting students and alumni with this specialization. For the 12 graduate programs that do offer a Ph.D. field in agribusiness, most have had the field in place for less than five years, and few, if any, programs have graduated more than 10 “agribusiness” Ph.D. students. And third, the list of 24 topics related to agribusiness

research used in this survey needs further elaboration. As noted earlier, four of the original topics were sufficiently vague and confusing to be excluded from the analysis. Also, other research methods and subject areas pertinent to the field of agribusiness should be included in any future research on this topic.

Should further research be pursued on this topic, several steps could be taken to address these limitations. First, in-depth interviewing and focus groups of current and recently graduated “agribusiness”

Figure 5. Percent of Students Indicating Topics Were Learned in Seminars



work and research constituting a specialization in agribusiness varies widely from program to program. Survey responses from current and recently graduated students concurred with the thoughts of the faculty. Their responses clearly indicate that the specific subject areas and research techniques important to a field in agribusiness are not consistently defined within the profession. With time this issue can be resolved, and the authors call upon those who have the most incentives to seek this resolution to step forward and take an active role.

Ph.D. students would offer alternatives that could overcome the limitations of the small target population. Second, refining the list of relevant subject areas and research methods may become possible as Ph.D. programs develop written field exams for agribusiness. A compilation of these exams would offer insights into what might be included in a consensus specification of the field. Round table discussions at public forums like the WCC-72 meetings and the Agribusiness Economics and Management (AEM) section of the AAEA also could be used to generate ideas.

This includes the 12 departments offering a field in agribusiness, the 30 respondents and any others who self-identify as having a specialization in agribusiness, the 19 departments who are in the process of hiring or who recently have hired agribusiness faculty, the WCC-72, and the AEM section of the AAEA.

On a more positive note, many graduate students reported learning about research methods and subject areas germane to agribusiness research. Even recognizing the limitations of the data, Departments of Agricultural Economics are offering courses that cover strategic management, finance, and supply chain management subject areas. What appears to be widely missing is course-work in human resource management and certain analytic techniques, particularly conjoint, cluster and factor analyses. Also of note, no respondent reported using case study methods in their research. Since the data set from the survey cannot be documented as being representative of the target population, these observations must be tempered with caution. Yet, the authors believe in the validity of the overall message: Most Ph.D. students in agricultural economics, especially those specializing in agribusiness, are learning about many of the subject areas and research techniques important to agribusiness research. However, as with most academic endeavors, there appears to be ample room for improvement.

Literature Cited

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 Boland, M., A. Featherstone, and S. J. Chapman. 1999. Characteristics of master's programs in agribusiness management. *International Food and Agribusiness Management Rev.* 2:63-82.

Implications

The findings from this study suggest that "agribusiness" as a sub-field in agricultural economics remains in its infancy, even if it is emerging as a workhorse in terms of employment opportunities for recently graduated Ph.D. students. Comments by graduate program coordinators and other faculty at over 25 departments clearly indicated that the course