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Using Case Studies as an Approach for Conducting Agribusiness Research

ABSTRACT: Case study research is increasingly important in agricultural economics as a means of collecting data, and building and testing theory. Case study research has a prescribed set of objectives, epistemology, methodology, and methods that have been developed and tested in a wide range of scholarly and problem-solving situations. This article reviews these fundamentals and then demonstrates the case study approach within the context of an agribusiness research project. This application exemplifies how case study research is capable of generating a robust, comprehensive array of "knowledge" about complex, highly interdependent and dynamic economic and social phenomena.

"This is the era of methodological pluralism in applied social science..."¹

INTRODUCTION

As agricultural economists extend their research agenda into the realm of agribusiness management, they are finding that traditional research strategies that focus primarily on surveys and analysis of archival data are, at times, limited in their applicability and scope. For example, as market concentration in the agricultural sector increases, opportunities to take random samples from large target populations within many agricultural sub-sectors decrease simply because large target populations no longer exist. Further, many agribusiness research questions are directly concerned with the managerial decision making of firms, i.e., how things function "inside the black box." Documenting the motivations and strategies

underlying decisions that are, in practice, far more complex than a simple decision rule like “maximize profits” or “minimize costs” requires alternative research approaches.

Case study research, as a general research strategy for collecting data and building and testing theory, can provide agribusiness researchers some relief to this dilemma. A review of the literature suggests that case study research has a prescribed set of objectives, epistemology, methodology and methods that have been developed and tested in a wide range of scholarly and problem-solving situations. By specifying these fundamentals, researchers and practitioners have established parameters for interpreting case study results and characterized the degree to which conclusions drawn from case studies can be generalized. This article reviews these fundamentals and then demonstrates the use of the case study approach within the context of an agribusiness research project.

OBJECTIVES OF CASE STUDY RESEARCH

Three objectives of research are (1) to conduct applied, problem-solving research, (2) to develop new theory, and (3) to test existing theory. Case study research can be used selectively to meet these three objectives.

When the purpose of research is to address a specific problem confronting a decision maker and/or a firm, case study methods may be the most appropriate approach for addressing the research question. A researcher can either make a case study of the problem itself, or make a case study of a similar firm that faced a similar problem, but has already taken action to solve the problem. The first approach targets the specific problem as the central research question. The second approach examines *how* another decision maker addressed a similar problem, and/or *why* a firm facing a similar problem chose the course of action that it did.

When the purpose of the research is to build new theory, a researcher can consider two types of case studies. One alternative is to choose one or two “archetypical” firms that appear to represent a particular type of firm or decision set. The other option can be case studies made of “outlier” firms that are unique in their standard operating procedures, the business choices they are making, or some other distinguishing characteristics of the decision maker and/or firm. Because such cases are archetypical or because of their uniqueness, insights into case firms’ decisions and the consequences of their decisions may provide opportunities to broaden the theory base on which to build an understanding of firms and their decision making processes.

When the purpose of research is to test and clarify existing theory, the researcher can select a set of case studies to purposefully challenge *a priori* assumptions and theoretical assertions. As Yin notes in his text, this approach is analogous to a laboratory scientist conducting a series of experiments. In this way

the case studies are used to determine whether “the theory holds up” under the specific conditions and parameters of a given case.

Implicit in these objectives are the means by which case study research results can be generalized. This is evident in the works of two authors, Mary Kennedy and Robert Yin, who have attempted to specify, albeit somewhat differently, how case study findings can be generalized beyond the specifics of an individual case.²

Though Kennedy’s perspective is narrowly focused on the application of case study research to the field of program evaluation (and related methodologies), her comments are pertinent to a wider discussion of case study research. She contends that the validity of non-statistical inferences (i.e., generalizations) can be enhanced when three criteria are met: (1) there is a wide range of attributes across the sample cases, (2) there are many common attributes between the sample case(s) and the general population of interest, and (3) there are few unique attributes within the sample case(s).

The first criterion implies that even a small number of cases can represent a wide range of attributes as long as the cases are selected with this intent. The second criterion requires that the researcher have some sense of the general attributes of the population of interest prior to selecting specific cases. The third criterion recognizes that the degree of unique attributes in a sample case and the validity of generalizations are inversely related. Kennedy adds a caveat to the application of these criteria—attributes that are identified must be relevant to an existing theory base or proposed causal relationship. In other words, identified attributes should reflect the hypothesized relationships between dependent and independent variables and/or between treatments and expected consequences.

Yin suggests a very different understanding of how case study results can be generalized. He abandons any attempt to justify case studies in terms of a sample being “representative” of a general population. He contends that “case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a “sample,” and the investigator’s goal is to expand and generalize theories (i.e., analytic generalization) and not to enumerate frequencies (i.e., statistical generalization)” (p. 10). Yin’s “analytic generalization” implies that the primary role of a case study is to enhance understanding through the development and refinement of theory, not by providing representative profiles of a particular population. Thus, theory, not statistical analysis, is the means by which case study research can be generalized.

Yin, like Kennedy, suggests ways of generalizing case study findings outside of the more traditional statistical sampling methods. As Kennedy notes, a set of generalizations that reach beyond a representative sample drawn from a known population “cannot be built on statistics, but is not necessarily less valid, even though the rules for drawing such inferences are not as clearly articulated” (p. 665). Both

authors have attempted to articulate these rules, and in the process, have provided guidelines for how to focus and conduct case study research.

THE EPISTEMOLOGY AND METHODOLOGY OF CASE STUDY RESEARCH

The following elaborates upon the underlying epistemology (i.e., philosophies), and methodology (i.e., logic and theory) of case study research. By documenting the philosophical foundations of case study research, the ability to validate the research approach and any subsequent research findings generated by the approach can be substantiated.

Case study research is pluralistic in its epistemology—positivistic, normative, and prescriptive types of knowledge all contribute to the overall approach.³ Further, many other social sciences have contributed extensively to the development of case study research, in part by applying the epistemology of phenomenological knowledge to the approach. Given this philosophical pluralism, case study methodology is also quite eclectic. The following provides an overview of how the various philosophies of science and their respective methodologies are related to the use of case studies as a research method.

Positivism

Case study research can be positivistic in that it can produce “value-free knowledge” (i.e., knowledge of situations, conditions or things in the observable world other than their goodness/badness or rightness/wrongness). All positive knowledge can be accepted or rejected based on logic and experiences known through the five senses. Examples of this type of knowledge that might result from case study research in agribusiness include descriptive profiles of “successful” firms (however “successful” may be defined). These profiles may include a listing of the firm’s physical, financial and human capital. Alternatively, the profiles may report sets of beliefs, perceptions and values held by the individuals within the firm (i.e., who values what).

The methodology of positivism emphasizes knowledge gained through the five senses, and often takes the form of empirically testable contingent statements. Positivism’s greatest strengths arise from the rigorous methods that have been developed to test these contingent statements—tests based largely on the principles of coherence, correspondence and clarity. Yin clearly works from these same principles when he asserts that researchers can make “analytic generalizations” from case studies. When Yin states, “analytic generalization, in which a previously developed theory is used as a template with which to compare the empirical results of the case study,” he is establishing for case research a methodological test for empirical data gathered during a case study. To assert that one should use a “previously developed theory” as a template implies that this theory has already passed

the tests of logical coherence and clarity.⁴ Yin also suggests that the basis of analytic generalization relies on a comparison of *a priori* theory to empirical results, implying that the case study must also pass a test of correspondence.⁵

Normativism

The case study approach can also be normative because it can produce “knowledge about values” (i.e., knowledge about the experiential goodness and badness of conditions, situations and characteristics in the observable world). Examples of this type of knowledge that might result from case study research in agribusiness include observations about the inherent goodness or badness encompassed in such current topics as human resource management, strategic planning, environmental standards, globalization, market concentration or vertical coordination—where observations about experiential goodness and badness are expressed in either monetary or non-monetary terms.

The methodology of normativism does not necessarily attempt to define goodness or badness, but instead relies on an assertion that there exists a shared commonality of experiences from which an undefined but known sense of goodness and badness is understood (Johnson). From this common understanding, the values (monetary and/or non-monetary) of situations, conditions and characteristics of the observed world are researchable.⁶ These values represent research derived normative knowledge. This type of knowledge can be seen in case study research when, for example, researchers are able to identify either “archetypical” or “outlier” firms, decision makers or resolutions of problems. These “archetypes” and “outliers” are considered particularly good fodder for case study work, and normative methodologies facilitate their identification.

Pragmatism

Also relevant is the philosophy of pragmatism and its contribution of “prescriptive knowledge,” which is knowledge of what ought or ought not be done based on the consequences of such decisions. An example of this type of knowledge that might result from case study research in agribusiness would be prescriptions about whether a firm’s chosen strategic plan of action is right or wrong for that firm. Alternatively, these prescriptive statements can be assessments of who should benefit, who should pay certain costs, and the appropriateness of power interactions among stakeholders in the enactment or repeal of market regulations, trade agreements, or government subsidies. Statements about the importance of antitrust legislation, the prevention of collusion, and the benefits of vertical alliances are further examples of the philosophy of pragmatism in practice.

The methodology of pragmatism is grounded in the concept of “workability.” The usefulness of propositions (i.e., prescriptions about what ought or ought not be done) is determined by the proposition’s ability to solve practical problems. The degree of usefulness is determined by the degree to which the consequences of

implemented propositions match the desired outcomes. Quoting Johnson, "Pragmatically, truth is dependent on consequences. It makes a difference who is benefited or hurt, when, where, and how" (p. 109). Historically, much of case study research has involved prescriptions, with researchers documenting the reasons why a particular proposition is "right or wrong" by using the methodologies of pragmatism to outline the expected consequences of a given prescription.

Phenomenological Knowledge

The case study approach also has part of its foundation in phenomenological epistemology. Case studies often are framed in an understanding of knowledge such that the phenomena of interest cannot be separated from their context (i.e., knowledge is learned through reflection upon human action and how this action emerges from the personal reflections of individual actors). Examples of this type of knowledge that might result from agribusiness case studies would be new or revised theories about the causal relationships between market forces, actors and outcomes.

Peterson, referencing Bonoma, notes that the methodology of phenomenological knowledge requires that the researcher work through a "theory/data/theory revision cycle" (p. 7).⁷ The methodology of phenomenological knowledge is very common to case study research in fields other than agricultural economics. In these studies, the context in which the case study firm and/or decision maker is emersed is as much the focus of the research as is the actual firm, decision maker and/or event that initiated the study of the case.

Summary

The preceding review documents how case study research draws from a pluralistic epistemology and an eclectic methodology. Given this broad intellectual base, the case study approach applies a wide range of philosophical perspectives to research questions, and consequently, is capable of generating a robust, comprehensive array of "knowledge" about complex, highly interdependent and dynamic economic phenomena.

CASE STUDY METHODS

A clearly specified research question (or set of questions) is central to implementing case study research, and it must be the first issue addressed by a researcher. As Yin notes, "selection of the appropriate unit of analysis results from your [sic] accurately specifying the primary research questions," and "the definition of the unit of analysis (and therefore of the case) is related to the way the initial research questions have been defined," (pp. 22–23). Similarly, Sjoberg, et al., note that "specifying what is a 'case'...varies with the researcher's presuppositions of the proper unit of analysis as well as other

		Number of Cases	
		Single	Multiple
Unit of Analysis	Single	agribusiness firm _i	$\sum_{i=1}^n \text{agribusiness firm}_i$
	Multiple	agribusiness firm _i - owner/CEO - export division - organizational structure	$\sum_{i,j=1}^{n,3} \text{agribusiness firm}_{i,j}$ And for j, 1=owner/CEO 2=export division 3=organizational structure

Source: Adapted from Yin, p. 39.

Figure 1. A Matrix of Potential Case Study Research Designs

related domain assumptions” (pp. 36–37). These comments suggest that for case study research, the research questions of interest determine the unit of analysis.

The researcher can draw from existing theories about causal relationships, anecdotal evidence observed in the field, and *a priori* hypotheses about the relationships under study to help specify the research question. As Yin observed, cases are not representative samples, but rather experimental tests. Research questions and units of analysis (e.g., firms, individuals) should be chosen purposefully to represent and test the frontiers of current understandings of the research topic.

Given a clearly specified research question, the next step in implementing case study research is to determine the appropriate case study design. According to Yin, there are four basic designs for case study research (Figure 1). The horizontal axis of Figure 1 represents the number of individual cases that are to be considered—either a study is based on a single case or researches multiple cases. The vertical axis is the number of units of analysis within a specific case study where there is either one unit or multiple units of analysis (i.e., a primary unit of analysis with additional units of analysis embedded within it). There also are examples of hypothetical units of analysis listed in each of the four cells of Figure 1.

As already suggested, Yin proposed a pragmatic definition of the unit of analysis for case study research. In his view, the socio-economic phenomenon that, when analyzed, provides the greatest insight into the issues and questions of interest to the researcher is the appropriate unit(s) of analysis. Thus, a case study’s primary unit of analysis may or may not entail embedded, secondary units that become part of the overall study. For example, if the case study is an

Category:	SIC - 2013 ^a	SIC - 2037
Non-exporter	Firm 1 & Firm 2	Firm 5 & Firm 6
Exporter	Firm 3 & Firm 4	Firm 7 & Firm 8

Notes: ^aStandard Industry Code (SIC) 2013 is the "frozen fruits, juices and vegetables" industry; SIC 2037 is the "sausage and other prepared meat products" industry.

Figure 2. Hypothetical Case Study Research Matrix with Multiple Case Studies

agribusiness firm and the research question focuses on the firm's exporting practices, a holistic approach has only one unit of analysis (i.e., the firm) and focuses only on the general marketing, management and exporting activities of the firm. This would be the single case, single unit of analysis located in the upper-left cell of the matrix in Figure 1.

However, the same case could include multiple embedded units of analysis, leading the researcher to look beyond the general, global activities of the exporting firm. Additional "sub-units" within the firm could be investigated in parallel with the overall case. Examples of these embedded units of analysis include making a case study of the owner or chief executive officer (e.g., documenting his or her education, life experiences, risk preferences), the international marketing division within the company (e.g., documenting the group dynamics of this marketing team), or the organizational structure of the firm (e.g., documenting the corporate culture and division of responsibilities within the firm). An example of this case study research design is shown in the lower-left cell of the matrix in Figure 1.

Concerning single- or multiple-case designs (i.e., the horizontal axis in Figure 1), Yin notes that "the single-case design is eminently justifiable under certain conditions—where the case represents a critical test of existing theory, where the case is a rare or unique event, or where the case serves a revelatory purpose" (p. 44). The alternative, the multi-case design, is particularly useful in testing theory, where each case is comparable to an experiment in the laboratory. With multi-case design, the researcher can choose each case so that, according to Yin:

[I]t either (a) predicts similar results [across cases] (a *literal replication*) or (b) produces contrasting results [across cases] but for predictable reasons (a *theoretical replication*). The ability to conduct six or ten case studies, arranged effectively within a multiple-case design, is analogous to the ability to conduct six to ten experiments on related topics; a few cases (two or three) would be literal replications, whereas a few other cases (four to six) might be designed to pursue two different patterns of theoretical replications (p. 46).

Hypothetically, Yin's multi-case, single unit of analysis design could be readily applied to an extension of the exporting agribusiness firm example cited above. Instead of making a case study of a single firm, a researcher could iden-

tify two agribusiness industries, delineated by a 4- or 6-digit standard industrial code number (SIC).⁸ For example, anecdotal evidence might suggest that there are exporting firms in the “frozen fruits, juices and vegetables” industry (SIC 2037) and the sausage and other prepared meat products industry (SIC 2013). Within these two industries, a researcher could identify two categories of firms, perhaps non-exporters and exporters. With two industries and two categories, there is a 2×2 research matrix (Figure 2). Assuming that the researcher identifies two firms for research cases within each cell of this matrix, a total of eight firms will be examined.

This research design permits a robust set of comparisons despite the small number of total firms involved in the study. As designed, comparisons can be made between industries (2 sets of 4 firms each; comparing between columns in Figure 2), between categories (2 sets of 4 firms each; comparing between rows in Figure 2), and between the eight individual firms. Additional comparisons can be made within industries (4 firms per industry; comparing within each column in Figure 2), within categories (4 firms per category; comparing within each row in Figure 2), and within each individual industry-category cell (2 firms per cell for all 4 cells in Figure 2). With the first three sets of comparisons, the researcher is seeking, in Yin’s terms, “theoretical replication,” i.e., evidence to confirm or refute the proposed theory that led to the original identification of the two categories as being pertinent to the research question at hand. With the latter three sets of comparisons, the researcher is looking for Yin’s “literal replication.” Such replication provides evidence to confirm or refute the *a priori* grouping of “similar” firms within each of the two categories, the implied assumption of homogeneity of firms within SIC industries, and the implied assumption of homogeneity of firms within each cell.

Another consideration in the design and implementation of case study research concerns the intended output of the research. The Harvard Business School has built much of its reputation on the writing of business case studies. These studies are almost always designed as single cases with one or perhaps a limited number of units of analysis within the case. A primary output of this type of approach is the classic “Harvard” teaching case. However, case study research has a much broader potential set of outputs than this well known format. As already mentioned, multi-case designs are particularly well suited for building and testing theory. Case studies can also be used to do preliminary appraisals of economic phenomena. These “stage setting” exercises can provide valuable background information which can help guide and substantiate further data collecting exercises (e.g., mail questionnaires, market studies). In all of these examples, the intended output influences the design, level of detail that is pursued in field work inquiries, and the overall nature of the case study itself.

RELEVANCE OF THE CASE STUDY APPROACH TO AGRIBUSINESS RESEARCH

Yin proposes that the appropriateness of a given research strategy depends upon three parameters: (1) the research question being asked, (2) the need for control over contextual variables, and (3) the time-frame encompassing relevant events. He asserts that case studies are the most appropriate research strategy when the research question focuses on addressing “how” and/or “why” questions, when controlling the contextual variables is not an option, and when the relevant time-frame is the present.

Given these parameters, is the case study approach appropriate for the objectives of agribusiness research? Certainly agribusiness researchers often are concerned with “how” and/or “why” research questions. Examples readily come to mind: *How* are decisions made within the firm? *How* do agribusiness firms manage risk and uncertainty? *Why* did a firm choose to diversify? Begin exporting? Vertically integrate? Similarly, agribusiness research, like nearly all social science research, has very little control over the contextual variables of the research setting. *Ceteris paribus* may be assumed for purposes of theoretic model building, but applied agribusiness researchers know that it is never possible to have “all other things held constant.” In other words, an experimental design of many replications and trials where the values of all but one of the variables are held constant is the very antithesis of the conditions common to agribusiness research. And finally, although the present is not the sole time-frame relevant to agribusiness research, a static snap-shot of the current status of a firm or industry is at least one of the relevant time-frames. These comments suggest that, at least in terms of Yin’s parameters, the case study approach to research is particularly well matched with the realities and objectives of agribusiness research.

Schnelle also discusses the use of case studies in conducting research. He suggests that “problem solving” is a natural, logical extension of the case study method, and asserts that case study research is a useful approach for solving current, complex problems within firms. In order to address these problems, the researcher “usually concerns himself with events in the life of a single person or of a single firm. More often, in case study, the researcher investigates the details of a single event or a closely related group of events in the life of a single person or firm” (Schnelle, p. 149). He concludes that an approach based on case study methods is, by design, problem solving research.

Schnelle’s terminology is very similar to that used by Johnson in his text on research methodology for economists.⁹ Johnson highlights three kinds of research that are important to the economics profession: disciplinary, subject-matter, and problem-solving. Johnson describes problem solving research as having “immediate, practical usefulness,” and as research that “prescribes a

solution to a specific problem of a specific decision maker running the practical affairs of the world (p. 20, 178).”

As with Yin, these comments by Schnelle and Johnson suggest that the objectives of problem-solving case study research and the objectives of agribusiness research have much in common.¹⁰

AN EMPIRICAL EXAMPLE FROM AGRIBUSINESS MANAGEMENT RESEARCH

Background

An empirical study was designed to investigate the driving forces affecting the internationalization process within smaller agribusiness and food industry firms.¹¹ At the outset of this research, the *a priori* set of relevant theory, prior studies and available data was very limited in scope. Confounding this constraint was a limited amount of somewhat conflicting anecdotal evidence about who, how, why and how many smaller firms were, in fact, internationalizing their business activities. To gain a greater understanding of these issues, a series of case studies targeting the principal decision makers of agribusiness and food industry firms was designed.

Using Yin’s text as a guide, the case study proceeded through five initial steps:

1. Specifying the research question in terms of “how” and “why.”
2. Composing a set of *a priori* propositions about the causes driving the internationalization process.
3. Selecting the unit of analysis, and appropriate case study design.
4. Establishing an *a priori* set of “links” between the propositions generated in step #2 and the anticipated data to be collected, resulting in a set of four categories of firms: firms strictly focused on domestic markets, new entrants in foreign markets, experienced practitioners in foreign markets, and former participants in foreign markets.
5. Establishing criteria for interpreting case study findings in advance of any data collection.

Given its ambiguity both in how it is listed here and in Yin’s original text, the fifth step merits further elaboration. Yin provides little help for specifying the criteria needed to interpret case study findings. He simply observes that it is useful to know in advance of data collection what is to be done with the data, that interpretations are often a matter of degree, and that the current state of the art of case study research does not provide adequate guidelines for establishing criteria.

The dilemma of specifying criteria for interpreting findings from this article’s empirical example of case study research can be specified as follows: if differences

in perceptions about the driving forces affecting the internationalization process can be documented across the four categories of firms (in the form of interview responses), at what point do these differences become “significant” (in a strictly figurative, qualitative sense)? A first step that can be taken is to simply report any differences in decision makers’ perceptions across the four categories (just as the first step of statistical reporting is to list the confidence interval). But then what? Is there more to this research approach than leaving the interpretation of the relative significance of these differences to the reader?

Significance, even in a statistical sense, is still a relative term that must be interpreted by the reader before findings can be interpreted or hypotheses can be rejected. Manderscheid emphasizes that researchers need to clarify the relation between statistically testing hypotheses and the actions that follow these tests. He notes that there are costs associated with both Type I and Type II errors, and the choice of a confidence interval affects the probability of each. Hence, with statistical tests of significance there is a need to “balance” the probability of the two types of error with economic and/or decision-theory criteria, possibly using a loss-function approach.

McCloskey states explicitly what Manderscheid implies. First, the decision to reject or fail to reject a hypothesis “cannot be decided on merely statistical grounds” (p. 203). Instead, McCloskey highlights the importance of distinguishing between “statistical” and “substantive” significance. With statistical significance, “the elementary but neglected point is that statistical tests of significance are merely about one sort of unbiased error in *sampling*” (p. 202, emphasis in original). Substantive significance, on the other hand, determines “whether a fitted coefficient is large or small in an economically significant sense” (p. 201). The former does not imply the latter. It is the responsibility of the economist to go beyond statistical tests to determine substantive differences. McCloskey (p. 204) also cautions economists to avoid the “fallacy of equivocation.” In his words, this happens when “the result on page 10 [of a research article] that is statistically significant turns up as economically significant on p. 20 [sic]”.¹²

Just as there are ways for determining a loss function or documenting “substantive” significance in interpreting the statistical testing of hypotheses, case study research does provide some guidance for interpreting any reported differences across cases. For example, when differences exist in some systematic and consistent manner across categories, these should be noted. Similarly, attempts should be made to report the degree of differences, possibly using techniques that mimic survey techniques that are designed to capture relative degrees of differences in respondent opinions and attitudes.¹³ With these suggestions in mind, the following approach was proposed for reporting and interpreting case study findings for the empirical example cited in this article: (1) document differences across cases, (2) document any systematic or consistent patterns in these differences, and (3) document, if possible, the degree of these differences.

	SIC - 2033 ^a	SIC - 3556
Never Exported	Firm 1	
New Exporters ^b		Firm 2
Experienced Exporters		Firms 3 through 6
Former Exporters	Firms 7 & 8	

Notes: ^aStandard Industry Code (SIC) 2033 is the "canned fruits and vegetables" industry; SIC 3556 is the "food processing equipment" industry.
^bNew exporters were firms that had begun exporting within the past three years. Experienced exporters were firms that had been exporting for more than three years. Former exporters were firms that had exported at least once but were no longer doing so.

Figure 3. Example of Case Study
Fieldwork—Eight Cases by SIC and Category

Selecting Cases

The protocol for selecting firms for the research was based on a purposeful targeting of specific industries and types of firms. The objective of the protocol was (a) to target industries in the agri-food sector that demonstrated, in a relatively even distribution, the full range of categories of firms as listed above (i.e., industries with domestically oriented firms, new entrants to export markets, experienced practitioners in export markets, and former participants in export markets), and (b) to screen firms within these industries based on specific size and category criteria.¹⁴ In this way, the protocol controlled for two of the commonly cited explanatory variables in the internationalization literature: firm size and "industry effect." With these two variables held relatively constant, firms from the same industry and of similar size could be compared and their varied responses to essentially the same market stimuli could be studied.

Based on a review of existing secondary data, two industries (SIC 2033 and SIC 3556, processors of canned fruits and vegetables, and manufacturers of food processing equipment, respectively) provided a relatively even distribution across the four categories of firms. Drawing from existing data bases, 66 firms within these two industries were initially identified, and 16 were selected in a final screening exercise. These firms were characterized as having gross annual sales and total number of employees near the mean values of all the firms within the respective SIC classifications. An additional characteristic of this set of "finalists" was that two firms in each SIC classification were identified in each category (i.e., 2 domestic, 2 new entrants, etc.), yielding a 4 x 4 matrix of 16 firms (i.e., 2 firms per SIC for two different SICs for a total of 4 firms per category for 4 categories).

Case Study Fieldwork

These sixteen firms were contacted by mail and telephone to solicit their participation in the study. Ten of the sixteen permitted on-site interviews, eight of which led to in-depth interviews with principal decision makers. As with all forms of data collection, the reality of fieldwork almost always falls short of the ideal. Some firms refused to participate. With others, it was discovered "on-site" that the firms fell outside the specified parameters of the study. And one, despite genuine interest

in participating in the study, was never interviewed because no interview time could be arranged due to scheduling conflicts. Figure 3 documents the category and SIC for each of the eight firms that were interviewed.

The actual interviews were modeled after a format proposed by Patton for what he calls "depth interviewing using an interview guide." As Patton notes, "depth interviewing probes beneath the surface, soliciting detail and providing a holistic understanding of the interviewee's point of view" (p. 108). For the eight case study interviews, the sought-after "holistic understanding" was the interviewee's personal attitudes and opinions about the determining factors concerning international marketing and sales, specifically in terms of their firm's products.

Interview guides, which were outlines of general topic areas and open-ended questions to be discussed during the interview, were used to provide basic but limited structure to the interview process. Separate, but similar, interview guides were developed for the four categories of firms (i.e., domestic, new, experienced, former). Differences in the guides were primarily grammatical tenses (*would be, is, was*) and extensions of subjects in which some, but not all of the firms, had experiences (e.g., asking only former exporters about why they exited international markets).

Summaries of the interviews and observations made during the site visits were written as soon as possible after leaving the interview sites, often at the first available road-side rest-stop. These hand-written summaries and the tape recordings of the interviews (when available) were then used as the basis for the formal synthesis of the case study findings.

Case Study Analysis

The analysis focused on a series of comparisons very similar to the ones suggested in the hypothetical example cited earlier in this paper. These included comparisons within SICs, within categories, across SICs, across categories, and across individual cases. Due to the loss of eight of the original target 16 firms, "within cell" comparisons were only possible in two cells.

The analysis concluded with assessments of how well the cases supported or refuted both (1) the underlying theory that guided the case study design, and (2) a set of hypothesized causal relationships about the internationalization process. Thus, the cases supported the development of theory. The case studies also provided insights that proved useful for the next two stages of the research project—refining and testing of a conceptual model of the internationalization process, and drafting a comprehensive questionnaire that was subsequently mailed to over 240 firms to collect additional data for further testing of the conceptual model.

SUMMARY

The term "case study" is used widely in the social sciences, with each discipline and sub-discipline defining the term somewhat differently. This article examined a

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Figure 4. A Quick Guide to References on Case Study Research Methods

very specific conceptualization of case studies—using case studies as a general strategy for conducting socio-economic research. The article also presented evidence to suggest that this strategy offers considerable potential for academic scholars wishing specifically to conduct agribusiness research.

The case study approach is particularly apropos when the objectives of the research agenda are (1) to conduct applied, problem-solving research, (2) to build new theory, and/or (3) to test existing theory. Clear guidelines for conducting this type of research are well grounded in a pluralistic epistemology and an eclectic methodology. Further, these guidelines, i.e., case study methods, provide specific implementation steps towards initiating case study research, selecting a case (or cases), conducting fieldwork, and analyzing/synthesizing research findings.

In this way, case study research is capable of generating a robust, comprehensive array of "knowledge" about complex, highly inter-dependent and dynamic economic and social phenomena. Consequently, in the specific context of agribusiness research, case studies are a viable alternative research strategy for agricultural economists seeking to address an array of topics for which their more traditional approaches to research (e.g., surveys, analysis of archival data) are inadequate and limited in their applicability and scope.

POSTSCRIPTS

The implementation steps for conducting case study research are reviewed in this document. Other authors have provided much more detailed outlines of this process. Figure 4 provides a "quick guide" to some of these references.

NOTES

1. Quoting Jennifer Greene and Valerie J. Caracelli.
2. The need for agribusiness management researchers to understand the conditions under which case studies can provide generalizable results is demonstrated by the traditional view of case

- study research: "Case studies are anecdotal evidence with unknown generality. An intellectual scoundrel can find a case study to support almost any position (p. 9, Ghebremedhin and Tweeten)."
3. Johnson presents an extensive development of these three kinds of "knowledge."
 4. Johnson suggests that "coherence" is attained when a theory does not contain any logical contradictions, and "clarity" is attained when a theory is not vague or ambiguous.
 5. Johnson suggests that a given statement can be disconfirmed if the observations on which it is based do not "correspond" with an established, previously recorded set of observation-based statements about reality.
 6. Johnson asserted that positive and normative knowledge are similar in that both are "knowable" only through the five senses, and that neither positive nor normative knowledge are known with certainty.
 7. Peterson notes that to work through this cycle, researchers must (1) observe the actual situation and actions taken, (2) attach meaning to these observations through classification and comparison, (3) form tentative hypotheses about the action, its causes, and its results, (4) test the hypotheses against other situations, and (5) determine whether the hypotheses should or should not be rejected, modified or abandoned.
 8. Standard industrial code number classifications are published by the U.S. Office of Management and Budget, Executive Office of the President, Washington, D.C.
 9. Johnson's diagram of the "problem solving steps related to kinds of knowledge used (Figure 2, p. 15)" and Schnelle's "problem solving model (p. 38)" outline very similar conceptualizations of the problem solving process.
 10. This is not intended to imply that agribusiness research is only problem solving in nature, and without subject matter or disciplinary research questions. Nor is it intended to suggest that the case study approach is only applicable to problem solving research. The assertion that agribusiness research and the case study approach are particularly well matched within the context of problem solving research is not, repeat not, suggesting that this is the only manner in which the two can be applied collectively in a research setting.
 11. Sterns, and Sterns, Peterson and Schweikhardt (1996, 1997) provide more detailed and comprehensive coverage of this research.
 12. For example, a price elasticity of demand may be estimated to be significantly different from 1.0 if the Beta is estimated to be 0.99 and the standard error to be 0.001. Such statistical significance, however, has little substantive meaning to a decision maker basing a decision on whether the elasticity is unitary.
 13. Examples from survey work include Likert scales ranging from strongly agree to strongly disagree, verbal frequency scales ranging from always to never, and ordinal scales ranking the importance of a set of variables.
 14. Mandates from the funding agency provided additional constraints on the selection of industries and firms. This research was part of a project which assessed the status and potential of Michigan's agricultural sector. To this end, only industries within the agri-food sector and only firms based in Michigan were considered for selection.

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