THE VALUE OF CASE STUDY RESEARCH

ON RURAL ENTREPRENEURSHIP: USEFUL METHOD?*

David L. Barkley
Professor and Co-Director
Regional Economic Development Research Laboratory
E.D.A. University Center for Economic Development
Department of Applied Economics and Statistics
Clemson University
Clemson, South Carolina
dbrkly@clemson.edu

I. Introduction

Insights into entrepreneurship and small business development are provided through an extensive research base consisting of the analysis of secondary data, surveys of samples of the populations of interest, and case studies of select individuals, enterprises, or programs. A common perception of these alternative research strategies is that case studies focus on the exploratory and descriptive phases of the research while surveys and the analysis of secondary data are more appropriate for program evaluation and explanatory purposes. Yin (2003) notes, however, that case study methods may be involved in all three roles. (exploratory/descriptive, evaluation, and hypothesis testing). For example, a common use of the case study research methodology is the "evaluation" of businesses and government programs with the goal of identifying potential explanations for their successes or failures. Exploratory and descriptive case studies, on the other hand, examine the development and characteristics of phenomena often with the goal of developing hypotheses of cause – effect relationships. Finally, the use of case study research for hypothesis testing involves tests for causal relationships by comparing generalizations from case studies' findings with the underlying theory.

* Presented at the joint ERS-RUPRI conference, Exploring Rural Entrepreneurship: Imperatives and Opportunities for Research, Washington, DC, October 26-27, 2006.

The purpose of this paper is to review the value of case studies as a useful research methodology for understanding entrepreneurship and small business development in rural areas. First, case studies are defined and the principal types of case studies designs are summarized. Second, examples are provided of the applications of case study methods in exploratory analysis, hypothesis testing, and program evaluation. These examples are drawn primarily from research on entrepreneurial development and public and private programs to enhance entrepreneurial activity. Finally, potential shortcomings or limitations to case study research are summarized. The reader should note that this paper will not address the appropriate protocol for the design, application, and reporting of case study research. These aspects are well documented in the literature (see, for example, Stake 1995, Yin 2003, and Feagin, Orum, and Sjoberg 1991). Instead, the focus of this paper is how "good" case study research can serve as a substitute for or a complement to the analysis of secondary and survey data.

II. Case Studies Defined and Designed.

Yin, in *Case Study Research Design and Methods* (2003, p. 13), defines case study research as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." Yin further proposes that the phenomena (e.g., new business start-ups) and its context (e.g., the local business and community environment) may not be readily distinguishable, thus he suggests that the case study definition include characteristics stipulating data collection and analysis requirements. Specifically, Yin (2003, pp. 13-14) states that "the case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points; …relies on multiple sources of evidence, with data needing to converge in a triangulating fashion; and …benefits from the prior development of theoretical propositions

to guide data collection and analysis." In summary, case study research is a comprehensive research strategy that includes the development of a theoretical model, research model design, data collection, and data analysis.

Case study research designs may be divided into four principal types (Table 1) based on the number of cases in the research design (single-case vs. multiple-case) and the number of units of analysis within each case (holistic vs. embedded). The number of units of analysis in a case may be interpreted as the number of program offerings in a government agency or the number of product lines in a business. For example, the case study of Kansas Venture Capital, Inc., a quasi-public venture capital firm, would be considered holistic because KVCI offered only the one program of venture capital financing (Barkley, DiFurio, and Leatherman 2004). Alternatively, the case study of Kentucky Highlands Investment Corporation (Markley and Barkley 2003), an entrepreneurial support organization, would be described as embedded since it involved the analysis of multiple programs within the organization (venture capital fund, small business incubator, real estate development, grant writing and administration).

The reader should note that the number of programs or services within a case (holistic vs. embedded) does not refer to the number of individuals or organizations interviewed or analyzed in the process of conducting the case study. The Kansas Venture Capital Inc., (KVCI) case study involved only one firm with one program; however, interviews were conducted with state employees responsible for the original KVCI legislation, KVCI employees, and KVCI portfolio companies. In addition, case study research is not limited to interviews with individuals associated with the case. Case information often includes a review of literature pertaining to the operation and historical development of the case (e.g., annual reports, marketing information, industry or government reports, and popular and academic press articles that provide information

on the case). Additionally, descriptive analysis of secondary data on the local economy, case study industry, and regional industry cluster may provide insights into the role of external factors in the evaluation of the case.

The choice between single-case and multiple-case designs for case study research is a function of the principal goal of the research, the availability of relevant cases, and the research budget. Multiple case studies generally are preferred if the research goal is program evaluation or the examination of causal relationships (hypothesis testing). The multiple-case design permits the researcher to make generalizations based on the observations of patterns or replications among the cases (Table 2). The single-case research design is useful if the case is an extreme, unique, or revelatory case; a representative or typical case; or a longitudinal case (Yin 2003). Flyvbjerg (2006) also proposes that the single-case design can be used for hypothesis testing through the process of "falsification." In this situation, if just one observation does not fit the proposition, then the proposition is considered not valid.

III. Benefits of the Case Study Methodology for Research on Entrepreneurship

Potential benefits from the case study research methodology will be demonstrated using case studies of (1) programs designed to foster entrepreneurship and small business development (e.g., venture capital funds, cooperatives, information technologies, business incubators, and entrepreneurial support organizations), and (2) the role of industry clusters in business creation and growth. The discussion will focus on the application of case studies for exploratory analysis, program evaluation, and hypothesis testing.

Exploratory/Descriptive Analysis. Organizations or programs often are so new that little information exists (outside the organization) regarding the workings and impacts of the organization. Case studies are a popular research methodology for these situations. For

example, Alexander, Pearson, and Crosby (2003) use a single case study of a rural-based travel agency to demonstrate how a small business transitions from the traditional business model to an e-commerce model. Henderson (2001) uses multiple case studies to determine if e-commerce was being used to support business networks among rural businesses. Henderson provides five examples of rural businesses that adopted electronic networks to increase sales, reduce costs associated with billing and inventory management, generate purchasing economies through pooled contracts, and speed the flow of market information.

Case studies also are popular for exploring "innovative" policies and programs designed to facilitate entrepreneurship. The National Governors Association (NGA) Center for Best Practices (2003) provides case studies of three state programs (Kansas Enterprise Facilitation, Minnesota Virtual Entrepreneurial Network and Biz Pathways, and Nebraska EDGE) to highlight state initiatives to develop community capacity to support entrepreneurial business development. The initial analysis of Certified Capital Companies (CAPCO), a state-assisted venture capital program, is an exploratory case study of CAPCO programs in Louisiana, Missouri, and New York (Barkley, Markley, and Rubin 2001). Personal interviews were conducted with public officials and CAPCO managers in the three states to develop an understanding of the role of state tax credits to capitalize the venture funds and the CAPCOs' use of venture capital funds to promote business development in the state.

Exploratory/descriptive case studies are not a good research methodology for assessing the prevalence of a phenomenon because the underlying population is generally unknown. However, these types of case studies often provide incentives to other firms or agencies to try something "different." The exploratory/descriptive case study serves as an example of the potential benefits of change. In the case of the National Governors Association's (NGA) "best

practices," they may help make the case for adopting a new approach to economic development or encourage policy makers to think more innovatively about economic development policy. Exploratory case studies also may observe interesting behavioral patterns or correlated phenomena, and these observations may be useful in developing or refining hypotheses. The testing of hypotheses or causal relationships will require that the number of case studies is expanded from the exploratory cases to sufficient case numbers to permit generalizations from the findings.

Hypothesis Testing. A goal of much economic research is to test for linkages or causal relationships between phenomena. For example, which characteristics of the local business environment or which government programs are related to increases in regional entrepreneurial activity? Ideally, these questions would be addressed with a well-specified econometric or quasi-experimental model supported by an extensive set of secondary or survey data. Unfortunately, there are numerous situations, particularly in research on rural entrepreneurship development, where event characteristics or data limitations reduce the effectiveness of econometric analysis and quasi-experimental design methods to detect causal relationships. Specifically,

- The characteristic or event of interest (e.g. availability of an entrepreneurial support center in the county) may have an impact on local economic activity (e.g. number of business establishments in the county, jobs, income), yet the impact is too small to detect from the "white noise" in the model estimation.
- An insufficient number of observations of the phenomena may exist to perform statistical analysis. Similarly, the researcher may have more explanatory variables than observations.

- The phenomena may exist in an environment in which there are numerous correlated explanatory variables, thus, it may be difficult to identify the more critical causal relationships.
- The event or program may be a recent phenomenon for which little or no secondary data are available.

Examples of the use of case studies in hypothesis testing are provided in the extensive research on industry clusters. Industry clusters may provide advantages to member firms in terms of labor pooling, targeted public services and infrastructure, greater availability of specialized input suppliers and business services, and an enhanced likelihood of networking to exploit new markets and technologies (Barkley and Henry 1997). These characteristics of industry clusters are hypothesized to result in an environment that is conducive for entrepreneurial activity and small firm development. Yet, of interest to policy makers are which particular cluster characteristics are most related to entrepreneurial development in which type of cluster? Case study research proved to be helpful in distinguishing among the multiple related cluster characteristics. For example, The Northeast Ohio Cluster Project (Austrian 2000) used case studies to identify the cluster's structural characteristics and better understand the cluster components and external factors that affected the cluster's evolution and competitiveness. Christopherson and Redfield (1993), Rosenfeld et al. (2000), and Gordon and McCann (2005) used case studies to show that networking among cluster firms was not a common occurrence in some clusters. Indeed, Rosenfeld et al. (2002) noted a hostile environment in the Kentucky houseboat cluster. Lackey also found that the Kentucky houseboat cluster provided a poor entrepreneurial environment (limited seedbed effect) because of a low percentage of managerial occupations, high barriers to entry, and high importance of contacts with retail outlets.

The application of the case study research methodology for causal studies or hypothesis testing requires some qualifications. First, it is recommended that the study include numerous cases and multiple sources so that generalizations may result from the triangulation of data, interviews, histories, and theories. The number of cases needed will be a function of the complexity of the situation and variety of external conditions. Second, generalizations from the findings are made to "theory" and not to population. The researcher should stipulate "rival" or alternative hypotheses and the case study's findings should support the theory but not the rival hypotheses. In summary, given a rigorous theoretical framework, the goals of the multiple case design are to (1) find similar results under similar circumstances or (2) find dissimilar results for predictable reasons (i.e., dissimilar circumstances matter as predicted by theory). Ideally, the case study research design will incorporate "feedback loops" such that the theoretical model and later case studies may be revised based on prior findings.

Evaluation Research. Bartik (2002) suggests five alternative research methodologies for estimating the impacts of local economic development programs: controlled experiments, experiments with randomization, quasi-experimental research design, statistical analysis of secondary data, and statistical analysis of survey data. Bartik does not mention the case study approach, yet a frequent use of the case study methodology is the evaluation of economic and entrepreneurship development programs that are too new, too small, or too geographically limited to significantly impact readily available metrics such as jobs and income. Case study program evaluations also are recommended when (1) the causal links between the program and outcome are too complex for identification by surveys or experimental methods, (2) path dependence or historical legacy are important to program efficacy, and (3) the role of program

management or administration is critical to program success but the critical characteristics are not captured in a survey (Yin, 2003).

In one application, the case study research design was used to evaluate the financial success and small business development impacts of publicly assisted venture capital funds (Barkley and Markley 2001). The study included 21 cases, with information collected from public officials, fund managers, and portfolio companies. The case study's findings were consistent across the diverse publicly assisted programs with respect to characteristics associated with successful venture capital programs. Successful, high impact programs had experienced venture capitalists as fund managers, considered return on investment (and not economic development impacts) as the principal investment criterion, and were not restricted to making investments in narrowly defined industries or regions.

The single-case study design was used to evaluate Kentucky Highlands Investment Company (KHIC), a highly successful entrepreneur and small business support organization located in rural London, Kentucky (Markley and Barkley 2003). The goal of this research was to identify the KHIC programs, characteristics, and linkages with other area organizations that were associated with KHIC's long history of nurturing new business start-ups and facilitating existing business growth. The identified "keys to success" could then be used by other entrepreneurial support organizations to enhance their rates of success. The case study attributed KHIC's success to tireless, dedicated leadership with an unusual ability to acquire grant funding from varied sources, to design innovative programs, and to deliver programs to a wide variety of small businesses. The case study concluded that KHIC was unique and replication of the program elsewhere was unlikely.

IV. Potential Problems with Case Studies

Research Design. Case studies may have shortcomings that limit their usefulness in understanding a situation or evaluating a program. The researcher may not identify all reasonable rival hypotheses and/or give appropriate consideration to the role of external factors (e.g. the political and economic environment) in the situation of interest. This potential shortcoming often results from an inadequate review of the relevant literature and/or inattention to the appropriate theoretical model. The more "complicated" the research issue, the greater the amount of time and resources required for research design, case study selection, and survey pre-testing. In addition, "complicated" situations generally require a multiple case study research design with multiple sources of information per case. A large number of cases, and collecting information from a large and diverse set of sources, is critical to avoid sample selectivity bias in terms of those chosen for study. This situation increases both the cost of the study and the skill set of the research team. Thus, an appropriately designed case study may be a relatively expensive and time consuming research methodology.

Biased Responses. Information collected for a case study, especially through personal interviews, may not accurately reflect the situation. A biased response may result from cognitive dissonance and/or a retrospective view of the case on the part of the individual interviewed. For example, individuals interviewed a number of years after the establishment and operation of a business incubator may not accurately reflect the challenges faced in gaining local acceptance of this idea from economic developers in the community. It may also be difficult to obtain an accurate appraisal of the value of entrepreneurial support services from entrepreneurs who feel that the existence of their service provider may be threatened by any critical input from clients. In addition, the individuals conducting the case study may be biased in their interpretations of the interviews and other collected information. North (2005) argues that individuals filter

information through a belief structure shaped from experiences, and "biased" interpretations may result from researchers' pre-conceived ideas of environments and relationships. As before, the likelihood of biased survey responses and biased interpretations can be reduced by increasing the number of perspectives on each case and increasing the number of individuals analyzing the case study data.

Misuse of Case Studies. Public policy makers often use case study research to justify their support or opposition for a program, regardless of the appropriations of the case study to their particular situation. "Best practice" case studies are used as justification for adopting a particular entrepreneurship development program, e.g., a business incubator, without consideration of the assets in a region and the relevance of the program to the needs of the entrepreneurs. In addition, communities across the nation plan to develop their version of a Research Triangle Park despite the critical absence of a core of leading research universities (i.e., Duke, North Carolina State, and the University of North Carolina – Chapel Hill) in the region. An alternative misuse of case studies occurs when case study research does not find a causal relationship or favorable program evaluation, yet the case study research is ignored because the community considers themselves to be the "special case." For example, states continue to pass, or give serious attention to, legislation enabling Certified Capital Companies (CAPCOs) despite prior case studies indicating that these programs help a small number of companies and provide few jobs at a very high cost.

These types of misuses may be reduced if the case study research is sufficiently thorough to allow generalization or the researchers take great care to identify when the findings can and cannot be generalized to other firms, communities, or organizations. In the situation where the community believes that they are the "special case," researchers need to be able to demonstrate

that all relevant contingencies were considered, and the "special case" community is not unusually distinct from cases included in the study (or, the community's unique characteristics have no influence on the case study's findings).

In summary, many shortcomings associated with case study research can be mitigated by increasing the number of cases in the study. Flyvbjerg (2006) warns, however, that an increase in case numbers may be only a partial remedy. He emphasizes that the researcher should be sensitive to the diversity of the cases, and that cases selected for a large number case study design should represent both common and atypical situations. Flyvbjerg (2006, p. 229) adds that "atypical or extreme cases often reveal more information because they activate more actors and more basic mechanisms in the situation studied."

V. Conclusion

Flyvbjerg (2006, p.242), in his defense of case study research, concludes that "good social science research is problem driven and not methodology driven." This research will select the methods based on the specific research issue, and those research designs often include qualitative as well as quantitative methods. The qualitative case study method is especially helpful in the analysis of entrepreneurs and small business development because the phenomena may be too new or too limited to be detectable in secondary data sources. In situations where secondary or survey data are available, case studies still may be beneficial because the approach may add depth to the analysis. The complexities, contradictions, and causal relationships in a situation may be more readily revealed in case studies than alternative research methodologies. In summary, case studies may complement statistical analysis by helping to refine hypotheses, select explanatory variables, and provide insights into how variable "x" affects variable "y." Thus, in many research situations, the relevant question is not "do we use case studies or

statistical data analysis?" but instead, "how can we incorporate case studies and statistical analysis into a holistic research design?"

The increasing popularity of case studies in public policy promotion and program evaluation is demonstrated by the prominence of "best practices" publications in the public policy literature. The goal of these "best practices" generally is to encourage similar program development on the part of other states or communities. Public policy makers should be aware, however, that these "best practices" usually are not well designed case studies of a program area. Missing from these studies are the failures and atypical cases and the insights these cases provide in terms of external factors and causal relationships. An enhanced appreciation of the entrepreneurial environment and small business development programs and policies will be provided by in-depth case study research that includes the good, the bad, and the ugly in terms of case selections. Such a case study research design increases the likelihood that the research results provide both the depth and richness necessary for enlightened public policy.

References

Alexander, C., J.M. Pearson, L. Crosby. 2003. *"The Transition to E-Commerce: A Case Study of a Rural-Based Travel Agency."* Journal of Internet Commerce 2(1): 49-63.

Austrian, Ziona. 2000. "*Cluster Case Studies: The Marriage of Quantitative and Qualitative Information for Action*." Economic Development Quarterly 14 (1): 97-110.

Barkley, David L., Ferdinand DiFurio, and John Leatherman. "*The Role of a Public Venture Capital Program in State Economic Development: The Case of Kansas Venture Capital, Inc."* Journal of Regional Analysis and Policy 34 (2): 83-106.

Barkley, David L. and Deborah M. Markley. 2001. *"Nontraditional Sources of Venture Capital for Rural America*." Rural America 16(1): 19-26.

Barkley, David L., Deborah M. Markley, and Julia Sass Rubin. 2001. "*Certified Capital Companies: Strengths and Shortcomings of the Latest Wave of State-Assisted Venture Capital Programs*." Economic Development Quarterly 15(4): 350-366.

Bartik, T. 2002. *"Evaluating the Impacts of Local Economic Development Policies on Local Economic Outcomes*." Upjohn Institute Staff Working Paper No. 03-89, November.

Christopherson, S. and B. Redfield, 1993. *"The False Promise of Industrial Districts for Rural Economic Development."* in Rural America and the Changing Structure of Manufacturing: Spatial Implications of New Technology and Organization. G.A. Bernat, Jr., and M. Frederick (editors), Paper 9319, Economic Research Service, U.S. Department of Agriculture, Washington, D.C.

Flyvbjerg, Brent. 2006. *"Five Misunderstandings About Case-Study Research."* Qualitative Inquiry 12(2): 219-245.

Gordon, I.R. and P. McCann, 2005. *"Innovation, Agglomeration, and Regional Development*." Journal of Economic Geography 5 (May): 523-543.

Henderson, J.R., 2001. *"Networking with E-commerce in Rural America*." The Main Street Economist, Federal Reserve Bank of Kansas City, Center for the Study of Rural America, September.

Lackey, S.B., 1998. *"Examining the Seedbed Potential Characteristics of Certain Manufacturing Industries: A Case Study of Houseboat Manufacturing Firms in the Lake Cumberland Region of Kentucky*." Staff paper 98-7, Department of Agricultural Economics, University of Kentucky, Lexington.

Markley, Deborah M., David L. Barkley, Julia S. Rubin, David Freshwater, and Ron Shaffer. 2001. "*Case Studies of Nontraditional Venture Capital Institutions*." Columbia, Missouri, Rural Policy Research Institute, P2001-11D, July, 98 pages.

Markley, Deborah M.and David L. Barkley. 2003. "*Development of an Entrepreneurial Support Organization: The Case of the Kentucky Highlands Investment Corporation*," Research Case Studies Series Number 1, Center for Rural Entrepreneurship, www.ruraleship.org.

National Governors Association Center for Best Practices. 2003. *"Innovative State Policy Options to Promote Rural Economic Development."* NGA Issue Brief, February. <www.nga.org/Files/pdf/0203RURALDEV.pdf>

North, Douglas. 2005. Understanding the Process of Economic Change. Princeton, NJ: Princeton University Press.

Rosenfeld, S.A., C.A. Liston, M.E. Kinglsow, and E.R. Forman. 2000. "*Clusters in Rural Areas: Auto Supply Chains in Tennessee and Houseboat Manufacturers in Kentucky*." Contractor Paper 00-11, Department of Agricultural Economics, University of Kentucky, Lexington.

Stake, R.E. 1995. The Art of Case Study Research. Thousand Oaks, CA: Sage.

Yin, R.K. 2003. Case Study Research Design and Methods. Thousand Oaks, California: Sage Publications.

Zeuli, Kimberly, David Freshwater, Deborah M. Markley, and David L. Barkley. 2004. "*Cooperatives in Rural Community Development: A New Framework for Analysis*." Journal of the Community Development Society 35 (2): 17-35.

Table 1. Basic Types of Designs for Case Study Research[a]

Number of Units of Analysis in Each Case	Number of Cases In Research Design	
	Single-Case	Multiple Case
Holistic (single-unit of analysis)	Kansas Venture Capital Inc.	Kentucky Houseboat Industry
Embedded (multiple units of analysis)	Kentucky Highlands Investment Corporation	Northeast Ohio Cluster Project

[a] Typology of research designs are provided by Yin (2003). Examples of case study types are provided by the author.

Table 2: Strategies for the Selection of Samples and Cases

Type of Selection	Purpose
A. Random Selection	To avoid systematic biases in the sample. The sample's size is decisive for generalization
1. Random sample	To achieve a representative sample that allows for generalization for the entire population.
2. Stratified sample	To generalize for specially selected subgroups within the population.
B. Information - Oriented Selection	To maximize the utility of information from small samples and single cases. Cases are selected on the basis of expectations about their information content.
1. Extreme/deviant cases	To obtain information on unusual cases, which can be especially problematic or especially good in a more closely defined sense.
2. Maximum variation cases	To obtain information about the significance of various circumstances for case process and outcome (e.g., three to four cases that are very different on one dimension: size, form of organization, location, budget).
3. Critical cases	To achieve information that permits logical deductions of the type "If this is (not) valid for this case, then it applies to all (no)cases."
4. Paradigmatic cases	To develop a metaphor or establish a school for the domain that the case concerns.

Source: Flyvberg (2006).