
APPENDIX A LITERATURE REVIEW

A review of literature was completed for works involving evaluation of entrepreneurship initiatives in five areas – access to capital, entrepreneurial networks, entrepreneurship education, technical assistance (including incubator projects), and technology transfer. These five program areas correspond to the original five areas identified by ARC as requiring investment in order to create a more entrepreneurial region. The literature review included primarily works that reported on more comprehensive evaluations of entrepreneurship efforts. Not all of the publications cited in this report were considered as candidates for the literature review. A citation and brief summary are provided for each publication reviewed and the metrics used or suggested are highlighted. Works appear alphabetically within each program section.

Access to Capital

Colgan, Charles D. and Bruce H. Andrews. Evaluation of Maine Technology Institute Programs. Maine Institute for Technology and the University of Southern Maine Center for Business and Economic Research. 2004.

Summary

This presentation evaluates the states investments in technology by looking at the impacts for institutional grant recipients, the economic impact, effects on company finances, intellectual property development, relationships cultivated, and quality of assistance programs.

The evaluation finds that assistance recipients have had significant success in developing new products leading to intellectual property protection and that they are likely to have an economic impact on the state. Grant assistance has served as a much needed catalyst for external financing, and relationships have been cultivated to enhance the economic cluster networks in the state.

Metrics Suggested

- Employment growth at assisted companies
- Matching funds received (federal grants, external debt, external equity and grantee match)
- Number of firms indicating new product for sale
- Sources of firm revenue
- Distribution of company sales by geography and technology sector
- Expected raw materials purchased within the state
- Sources and amount of debt and equity capital
- Patent activity
- Other intellectual protection activity
- Number of company respondents that received assistance from the identified program (compared to other assistance programs).

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- Mean rating of organizations consulted and percent of respondents who claimed relationship was critical to success
 - Client assessments of interactions with program in relation to percent satisfaction to all state R&D assistance

Community Development Financial Institutions Data Project. Providing Capital, Building Communities, Creating Impact. Fourth Edition. Washington, D.C. 2004. 10 November 2006
<http://www.cdfi.org/downloads/CDP_fy2004_complete.pdf>.

Summary

Data from 517 Community Development Financial Institutions was analyzed to demonstrate the impact of CDFIs on emerging domestic markets throughout the U.S. Some of the results include that almost 7,000 businesses received assistance from CDFIs resulting in 28,330 jobs. The financial assistance served niche domestic markets that are underserved by traditional lending institutions and the transactions were prudent and effective. CDFIs were also shown to be flexible and timely enough to grow and change with the dynamics of the market and respond effectively to large-scale disasters such as hurricane Katrina.

Metrics Suggested

- Number of CDFIs
- Total Assets
- Average Assets
- Total FTEs
- Total Direct Financing Outstanding
- Average Direct Financing Outstanding
- Percent of Direct Financing Outstanding to specific sectors
- Net Charge-Off Ratio
- Delinquency Rate > 90 days
- Delinquency Rate > 2 months
- Average Capital
- Percent of Debt from different types of institutions
- Markets served: rural vs. urban and regional markets
- Types of community betterment programs assisted, such as childcare, affordable housing, service organizations, educational slots, payday loan alternatives

Felsenstein, Daniel and Aliza Fleischer. “Small-Scale Entrepreneurship and Access to Capital in Peripheral Locations: An Empirical Analysis.” Growth and Change 33 (2002):196-215.

Summary

This paper analyses public assistance programs for small-scale entrepreneurship programs in rural areas. The authors use data from Israel to establish that lending institutions perceive a high risk when lending to areas where there is little

information. The study has three findings: 1. Location matters in determining risk profile, 2. Location-oriented programs can improve information asymmetries that can be a risk factor and 3. These programs can create positive welfare effects. The study also asserts that there is speculation about the ability of information technology to increase visibility of small rural firms and enhancing information flow.

Metrics Suggested

An estimation framework using

- Net employment
- Total employment
- Monthly wage for an individual income groups
- Revenue
- Loan value
- Guarantee Value

Greene, F.J. and D.J. Storey. "An Assessment of Venture Capital Creation Programme: The Case of Shell LiveWIRE." Entrepreneurship and Regional Development 16.2 (March 2004):145-159.

Summary

This paper suggests there are two areas when considering the problems inherent to assessing venture capital creation programmes: assessment is contingent upon the evaluation context and an input-output analysis is inadequate. The researchers create a new instrument to assess the value of these programs. They find that "soft" forms of support were of little value and that the more likely an individual was to engage in entrepreneurial activity the less likely they would be to seek the venture capital program's services.

Points to Consider for appropriate metrics

- What is the purpose of the evaluation? Evaluate the efficacy of the program or the internal efficiencies?
- Be cognizant of the operational issues involved with a program.

Manigart, Sophie et al. "Determinants of Required Return in Venture Capital Investments: A Five Country Study." Journal of Business Venturing 16.6 (July 2002):291-312.

Summary

The authors use two theoretical perspectives (resource theory and financial theory) to develop hypotheses about the determinants of the return required by venture capitalists. They test them on over 200 companies in 5 countries. They find that acquisition and buyout specialists require a significantly lower return than other venture capital companies (VCCs). Also, highly stage-diversified VCCs, independent VCCs, and VCCs providing more intensity of involvement all expect higher return rates.

Metrics Suggested for Average Rate of Return for Venture Capital Companies

- 36%-45% for early stage investments
- 26%-30% for expansion investments, acquisitions, buy-outs and other later stage categories
- 42% for early stage, stage specific rates
- 33% for later stage, stage specific

National Association of Seed and Venture Funds. Seed and Venture Capital: State Experiences and Options. May 2006. 10 November 2006
<[http://www.nasvf.org/nasvf/web.nsf/fbaad5956b2928b086256efa005c5f78/1412e8744c1c500c862572ad00019ab5/\\$FILE/Seed%20and%20Venture%20Capital%20Report%20-%20Final.pdf](http://www.nasvf.org/nasvf/web.nsf/fbaad5956b2928b086256efa005c5f78/1412e8744c1c500c862572ad00019ab5/$FILE/Seed%20and%20Venture%20Capital%20Report%20-%20Final.pdf)>.

Summary

The report includes a survey of the 50 states and their status in seed and venture capital. The report concludes there are 10 lessons learned. One of these lessons is that each state should develop a "System of Evaluation." It claims that the best programs establish outcome measures from the beginning, keep track of the program results and evolve according to changing conditions.

The report mentions that state funds can have different objectives. It notes that if funds have a more economic or social development target than on should not expect the same rate of return as private funds.

The report establishes a starting point for more in-depth evaluation and design prospects for state venture capital funds.

Metrics Suggested

- Number of jobs created or retained
- Geographic reach
- Industry reach

Sandler, Daniel. "The Effective Use of Tax Credits in State Venture Capital Programs." Tax Paper 108, Canadian Tax Foundation. 2004.

Summary

In his paper, Sandler states how the Venture Capital Industry in the U.S. is highly localized and for many states to encourage the geographic dispersal of venture funds, they are using tax credits. He offers several suggestions on how to evaluate these tax programs.

Metrics Suggested

- Economic growth in the state generated by the SMEs that are funded.
- The amount of capital raised through the tax credits

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- All other capital the business raised
 - Number of new employees
 - Wage rates
 - Capital expenditures

Entrepreneurial Networks

Elfring, Tom and Willem Hulsink. "Networks in Entrepreneurship: The Case of High-technology Firms." Small Business Economics 21.4 (2003):409-422.

Summary

The value of networks as an integral part of the explanation of entrepreneurial success is widely acknowledged. However, the network perspective does not specify the role of networks in the emergence and early growth of a venture. We have distinguished three entrepreneurial processes in new venture development, i.e. discovery of opportunities, securing resources, and obtaining legitimacy, which are of importance for survival and performance. This paper examines how these processes are influenced by strong and/or weak ties and whether the degree of innovation (incremental versus radical) acts as a contingency factor in the way network ties support entrepreneurial processes. In this explorative study three cases on high technology firms in The Netherlands provide empirical material enabling us to develop a number of propositions on the network effect, in particular the mix of strong and weak ties, on the three entrepreneurial processes.

Metrics Suggested

- Network effects
- Types of network ties
- Motives for getting involved in networks

Kingsley, Gordon and Edward J. Malecki. "Networking for Competitiveness." Small Business Economics 23 (2004):71-84.

Summary

A policy innovation that has achieved widespread diffusion across national and sub national governments in industrialized countries is the promotion of networks among small manufacturers as a means of promoting competitiveness. However, research and evaluations of formal networks formed in response to policy initiatives tend not account for the informal networks that small manufacturers routinely use in gathering information and business resources.

This study examines the use of informal networks by 50 small manufacturing firms in rural and urban regions of northern Florida. The analysis is inductive and designed to provide a point of comparison to the growing literature on formal small manufacturing networks. Unlike formal networks, the links that comprise informal networks tend to be geographically and socially mixed. Small firms use informal networks to gather information on a mix of issues. Urban and rural firms have similar patterns of network use on issues affecting product development and competitiveness. But they have different patterns of network usage for issues associated with exporting and labor problems.

Informal networks draw upon local and non-local information resources that do not require significant amounts of interpersonal contact across actors. Proximity is not a factor in the effective use of informal networks for information purposes. Rather the emphasis is upon locating “tried-and-true” solutions that solve the business needs. There is little evidence suggesting that the informal networks that these small manufacturers use are gravitating towards or seeking the development of formal networks. Thus, policy prescriptions identifying barriers to networking among small manufacturers are borne out in this study.

Metrics Suggested

- Business relationships between participating firms
- Needs of firms that prompted them to seek out networks (were those needs met?)
Information sources used (did network participation change these?)

Pages, Erik and Shari Garmise. “The Power of Entrepreneurial Networking.” Economic Development Journal 2.3 (Summer 2003):20-30.

Summary

In 2000 the National Commission of Entrepreneurship helped convene a national series of focus groups to find out what makes a community entrepreneurial. They found that strong universities, access to venture capital, and good physical infrastructure matter, but so do soft, people-based assets. The opportunity to network with other entrepreneurs was an important factor in the success of entrepreneurs in regions.

This article was designed to offer strategies for creating and nurturing networks.

Metrics Suggested

- Learning between individuals (rather than exclusively inter-firm)
- Linkages created between entrepreneurs (brokering)
- Creation of common perspectives.
- Cultural change
- Creation of civic leaders
- Branding of a region
- Enhancing regional competitiveness
- Networks spun off from parent network

Regional Technology Strategies, Inc. Evaluation of the Early Stages of the Appalachian Regional Commission’s Entrepreneurship Initiative. A Report to the Appalachian Regional Commission. December 2001.

Summary

This is the evaluation of the Appalachian Regional Commission’s \$17.6 million effort, begun in 1997, to bolster the entrepreneurial infrastructure of Appalachia.

ARC awarded Regional Technology Strategies, Inc. (RTS) the contract to undertake the assessment and analysis based on a sample of 23 - 25 projects.

To collect the necessary data, the research team (1) conducted a careful review of information and documentation supplied to the ARC by grant recipients, (2) conducted a survey of the sample of projects supplemented by selected telephone interviews with project staff, (3) conducted telephone interviews with randomly selected clients and partner organizations from among names submitted by projects, and (4) visited two project sites for a more in-depth perspective.

The evaluation uses a variety of measures to assess outcomes and impacts on individuals and the local economy. The first set of measures assesses relative degrees of satisfaction of clients with the intervention. The second important set evaluates the economic results of the intervention on the client such as new enterprises started, new markets, or new products lines. The third captures the more general impacts on the economy in terms of jobs created by the new enterprises, growth potential of the enterprises, and potential sustainability of the program.

Clients of the programs generally expressed high levels of satisfaction with the support they received. Three-quarters of projects reported businesses developed new products, 55 percent indicated that firms upgraded technologies or management methods, and half reported starting new businesses.

About 52 percent of the sample projects reported creating jobs in existing firms and 39 percent reported saving jobs that would have otherwise been lost. Adults created 214 new firms—33 new firms with 1 and 181 without employees. Based on those projects that were able to report hard numbers in the survey, 356 new jobs were created—54 in new firms, 121 in existing firms, and 181 jobs through self-employment. Another 85 jobs were saved from extinction in existing firms. In addition, surveyed projects reported 46 new businesses created by youth or students as class projects, some of which could become self-sustaining businesses after graduation.

Metrics Suggested

- Client levels of satisfaction
- New product development in existing businesses
- Technology or management method improvement in existing businesses
- New businesses created
- Jobs created
- Jobs retained that would have been lost without the project
- Businesses started by youths
- Income of businesses created

Rosenfeld, Stuart. "Networks and Clusters: The Yin and Yang of Rural Development." Proceedings of Federal Reserve Bank of Kansas City Conference on Exploring Policy Options for a New Rural America. (September 2001):103-120.

Summary

Beginning in the mid-1980s, policymakers, particularly in rural areas, realized that they could no longer rely only on attracting large branch plants to sustain their economies. Increasing competition from newly developed and less developed low-wage nations was erasing their cost advantages. The more creative development agencies began to rechannel efforts towards stimulating entrepreneurial activity and strengthening indigenous businesses. Among the many policies discovered and promulgated by various experts and advocates in the late 1980s was interfirm collaboration, i.e., the widespread formation of formal and informal alliances, or networks, among groups of companies for mutual competitive advantage.

The policy levers to convert networks from a practice considered by many to be uniquely linked to northern Italy's social and business culture into a more universal practice were first formulated in Denmark in 1989. This approach to interfirm cooperation, designed in Denmark with advice from American consultant Richard Hatch, became the U.S. and international standard. With an allocation of \$25 million from the Ministry of Trade and Industry, the scheme consisted mainly of training people, called brokers, to create networks and then offering groups of three or more companies sequentially phased grants for conceptualization, planning, and implementation. Eligible network activities included joint marketing, production, problem solving, research and development, and purchasing.

The first and only, national effort to move the numbers of networks in the U.S. to a scale that could have impact began in 1993 under a grant from the National Institute for Standards and Technology to Regional Technology Strategies, Inc. The project, called USNet, was based on the documented value of networks to industrial modernization and technology adoption in Europe and involved 15 state partners working together to build statewide network programs for SMEs. It relied heavily on the Danish model of training brokers and multipliers and on a process for informing companies and development organizations. But it depended on the individual partner states to provide the financial incentives. While not a rural development initiative per se, many of the early adopting areas were rural.

Metrics Suggested

- Improved quality of products
- New customers
- New suppliers outside network
- Increased sales
- Increased profitability

-
- Improved existing process
 - Improved relationships with customers
 - Adopted new technologies
 - Improved supplier quality
 - Savings by group purchasing or shared resources
 - Developed new product
 - Increased exports
 - Established new company

**Also suggests that learning is a sufficient outcome for businesses to network.

Shapira, Philip. The Evaluation of USNet: Overview of Methods, Results and Implications. Final Report to USNet Partners. August 1998.

Summary

This report summarizes the aims, methods, and principal findings from the evaluation of USNet. The USNet project was a pilot initiative to build the capacity of its partners to promote inter-firm collaboration, with the ultimate aim of enhancing the competitiveness of small and mid-sized manufacturing enterprises.

The evaluation discusses the findings of the major USNet evaluation studies undertaken by members of the evaluation team. The principal findings of the evaluation are:

- Firms who collaborate in inter-firm networks report positive net benefits, while greatest private impacts are associated with strong industry leadership of networks
- USNet's original network promotion goals were too ambitious, given the resources available; judged against more realistic expectations, USNet has performed well
- USNet's training programs have generated widespread awareness about inter-firm collaboration
- USNet special projects demonstrate the value of explicit follow-on initiatives to promote inter-firm collaboration
- USNet policy and organizational impacts at the state level were modest
- Federal support can strengthen efforts to promote inter-firm collaboration at the state level and aid shared learning

Metrics Suggested

- Impacts of networks on states-number of firms involved in networks, attitudes of organizations toward inter-firm collaboration, learning new information, making new contacts, learned about other states' practices, getting ideas to resolve problems, becoming aware of tools.
- Net economic benefits accruing to participating firms
- Generating awareness of inter-firm collaboration

Welch, Doug, et al. "Net benefits: An Assessment of a Set of Manufacturing Business Networks and their Impacts on Member Companies." USNet Evaluation Working Paper 9701. 1997.

Summary

During the 1990s, a growing number of US companies became involved in collaborative interfirm partnerships, flexible business networks and other organized collaborative efforts to aid business performance. Drawing on survey data from industrial companies and network brokers in five US states, this study identifies and measures a range of hard and soft impacts on firms resulting from their participation in interfirm networks. The measures include effects on firms' activities, business strategy, relationships, trust, confidence, technology use, know-how, employment and economic benefits and costs.

USNet, a federal-state initiative to strengthen interfirm collaboration, sponsored this study. In order to assess the impacts of network participation on member companies, two types of surveys were administered at the beginning of 1997, the "1997 National Benchmark Survey of Industrial Network Companies" and the "Survey of Network Presidents/Coordinators." This study presents findings from descriptive and comparative analyses of data from these surveys.

A total of ninety-nine members of 13 separate business networks responded to the survey. Principal findings from this dual survey effort include the following:

- Most of the thirteen surveyed networks are young, urban organizations with limited staff resources.
- With a few exceptions, the network members responding to the survey were small manufacturers.
- The networks' most common primary objective is information sharing.
- Companies of different sizes report different network activities.
- Overall, most respondents are satisfied with the networks. Thirty-one
- Most companies report positive effects to date and expect even larger future effects.
- The average total net benefits per firm of network participation are positive.
- On average, companies experienced a net increase in their employment levels as a result of network participation.
- A few more 'intensive' network activities are associated with stronger overall impacts.
- Companies that share sales leads report higher net benefits of network participation.
- Companies that have been in networks longer are more likely to report sharing technical capabilities with other network members.

Metrics Suggested

- Network objectives
- Differential network activities depending on client characteristics

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- Satisfaction levels
 - Client experiences of positive effects on strength of positive effects
 - Total net benefit per firm (\$)
 - Change in employment levels of participating companies
 - Intensity of network activities
 - Improvement in employee and management skills due to network participation
 - Knowledge sharing with other companies

Entrepreneurship Education

Charney, Alberta and Gary Libecap. The Impact of Entrepreneurship Education: An Evaluation of the Berger Entrepreneurship Program at the University of Arizona, 1985-1999. Final Report to Kauffman Center for Entrepreneurial Leadership. May 2000.

Summary

The report details the results of a series of surveys on the effect that the Berger Entrepreneurship Program at the University of Arizona has had on its graduates, the university's technology transfer program, financial contributions to the college of business, and the degree to which entrepreneurship has been incorporated into curriculums in other departments. The Berger Program was a good candidate for such an analysis because it had been in existence for sixteen years at the time of the report. A sample of program alumni and other university graduates were surveyed to assess the program's effect on students. According to the results, program graduates were three times more likely to start a new business than non-entrepreneurship graduates. Additionally, program graduates' average annual income was found to be twenty-seven percent higher than the average annual income of general university graduates. However, there was little evidence that program participation led to higher levels of job satisfaction. With regard to technology transfer, the report concludes that entrepreneurship education promotes technology transfer as graduates were more likely to be involved with firms that use licensed technologies or with firms that license technologies to others. A separate survey of University of Arizona administrators revealed that entrepreneurship education had reportedly led to increased financial contributions to the university and respondents felt that other curriculums had been enriched due to pedagogical innovations in the entrepreneurship program.

Metrics Suggested

- Number of business ventures started
- Number of workers employed in venture
- Amount of sales/revenue
- Graduate job satisfaction
- Type of venture started
- Whether or not venture is "high-tech"

Fayolle, Alain. "Evaluation of Entrepreneurship Education: Behavior Performing or Intention Increasing?" International Journal of Entrepreneurship and Small Business 2.1 (2005):89-98.

Summary

Fayolle says there is a growing interest around the question of how to evaluate entrepreneurship education programs. He then suggests that the standard metrics such as direct and indirect job creation are insufficient measuring sticks.

Fayolle points out that there are significant timing issues associated with using job creation as the primary criteria, i.e. he says the entrepreneurial process is a nonlinear one and there is no definitive way to know at what point employment opportunities may be created. Accordingly, he advocates for the inclusion of some more intangible metrics. Fayolle believes that entrepreneurship programs should also be evaluated on the attitudes, mindsets, and intentions of students. He also discusses how different teaching strategies can influence student behavior. Fayolle notes that entrepreneurship training may enable students to start their own enterprise, but it can at the same time dent their desire to do so – consequently, teaching style matters. In essence, Fayolle says that because entrepreneurship is so connected to personal desire and motivation that it is very important to evaluate the student psyche throughout the educational process. Bottom line being that evaluating programs on job creation alone is difficult and incomplete; therefore, that analysis should be supplemented with some assessment of how the program nurtures the entrepreneurial spirit.

Metrics Suggested

- Teaching strategies
- Student attitudes and intentions throughout the process
- An evaluation of overall program goal compared to student goals
- Knowledge acquisition

Nakkula, Michael. “Expanded Explorations into the Psychology of Entrepreneurship: Findings from the 2001-2002 Study of the NFTE in two Boston Public High Schools.” Working Paper, Harvard University Graduate School of Education. 2003.

Summary

This reports details the results of a National Foundation for Teaching Entrepreneurship (NFTE) program that was taught in two Boston public schools during the 2001-2002 school year. In the Boston public school system every student is required to take a school to career “pathway” class that forces them to think about their plans after graduation. In concert with that, a study was set up where some students were enrolled in a special “pathway” class sponsored by NFTE. Students were assessed at the beginning of their “pathway” classes and then again upon completion regarding questions like desire to go to college. Students taking NFTE’s entrepreneurship “pathway” course were found to have experienced considerably higher increases in college interest and occupational aspirations over the duration of the class than students enrolled in non-NFTE “pathway” courses.

Metrics Suggested

- Level of college interest, pre and posttest
- Occupational interest, pre and posttest
- Overall school engagement
- Amount of independent reading

Schlough, Charles and Deborah Streeter. "Cornell University's Entrepreneurship Education and Outreach Program: An Evaluation and Proposal." Working Paper, Department of Agricultural, Resource, and Managerial Economics, Cornell University. 1999.

Summary

The first part of the report evaluates Cornell's Entrepreneurship Education and Outreach (EEO) program. The authors discuss the challenges that the program has encountered during its first two years including a lack of widespread cooperative support from state and local-level stakeholders. Consequently, the second part of the report is a proposal to develop a statewide network of supportive partnerships in order to improve Cornell's entrepreneurship education mission. Included in that plan is a set of "criteria for success" and a corresponding list of metrics. The authors suggest evaluating the proposed program by measuring the number of small businesses started by graduates, the number of jobs created within those ventures, the number of decisions by graduates to not proceed with a business concept, and annual sustained enrollment levels in program courses.

Metrics Suggested

- Number of businesses started
- Number of people employed within those businesses
- Number of decisions by graduates to not pursue a business concept
- Annual sustained enrollment in program courses

Soloman, G.T., et al. "The State of Entrepreneurship Education in the United States: A Nationwide Survey and Analysis." International Journal of Entrepreneurship Education 1.1 (2002):65-86.

Summary

This paper offers an assessment of entrepreneurship education both domestically and abroad as of 2000. Included in the article is a brief literature review on entrepreneurship education. The following is a summary of two articles discussed in that literature review for which full-text versions were not readily available. Citations for both works are listed below.

Block and Stumpf (1992) and McMullan and Long (1987) both assert that traditional measures of program effectiveness such as number of graduates are insufficient indicators of success. Instead they agree that programs should be evaluated according to their socioeconomic impacts. Accordingly, Block and Stumpf (1992) suggest using number of jobs created by graduates and overall job satisfaction as relevant measures. Similarly, McMullan and Long (1987) advocate assessing the number, type, and growth of companies created by entrepreneurship graduates as a better gauge of success.

Metrics Suggested

- Number of jobs created
- Level of job satisfaction
- Number of businesses created
- Types of companies created
- Growth of companies created

Sources

Block, Z. and S. A. Stumpf. "Entrepreneurship Education Research: Experience and Challenge." The State of the Art of Entrepreneurship. Eds. D. L. Sexton and J. D. Kasarda. Boston: PWS-Kent Publishing S.A., 1999. 17-45.

McMullan, W. E. and W.A. Long. "Entrepreneurship Education in the Nineties." Journal of Business Venturing 2 (1987):261-275.

Vesper, Karl and William Gartner. "Measuring Progress in Entrepreneurship Education." Journal of Business Venturing 12 (September 1997): 403-421.

Summary

In this article, Vesper and Gartner report on the results of a 1994 survey which attempted to rank university-level entrepreneurship education programs. The survey was mailed to 941 business school deans both domestically and abroad. Respondents were asked to rank the top programs and to list the most important criteria considered when doing so. Among the possible 18 criterion listed, courses offered was ranked number one followed by faculty publications, impact on community, exploits of alumni, and innovations. Faculty start-ups and location were listed as the bottom two. However, Vesper and Gartner quickly caution the reader about the results of the survey and similar rankings in general. The authors state that the survey did not tie the program rank to specific criteria nor did it evaluate respondent knowledge of the other programs in question. With respect to other popular rankings, for example, program ratings published by *Business Week*, Vesper and Gartner argue that traditional metrics used in those rankings – GMAT scores, computers per capita, etc. – may not be appropriate predictors of entrepreneurial success. Instead, they suggest employing the set of criteria used in awarding the Malcolm Baldrige National Quality Award (MBNQA), a well-established quality improvement program. Using the MBNQA framework, Vesper and Gartner stress the importance of evaluating entrepreneurship programs based on the following seven factors: leadership, information and analysis, strategic and operational planning, human resource development and management, educational and business process management, school performance results, and student focus and student and stakeholder satisfaction.

Metrics Suggested

- Student performance (in specific classes or as demonstrated through a portfolio)

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- Student improvement throughout program
 - Student satisfaction
 - Impact on the community (number of start-ups, students employed in new firms, students working in positions assisting new firms)

Technical Assistance

Aernoudt, Rudy. “Incubators: Tool for Entrepreneurship?” Small Business Economics 23.2 (2004):127-135.

Summary

This paper examines U.S. and European experiences with business incubators and stresses the need for accurate evaluations of their impact relative to their different types. The author finds that lack of entrepreneurship and the underdevelopment of seed financing and business angel networks are some of the biggest barriers to success. He asserts that seed financing, links with business angels and business angel networks as well as involvement in second round financing and IPO assistance should be integrated into the business incubation concept.

Metrics Suggested

- Survival rate
- Tenants by incubator
- Employment by tenants
- Employment created by graduates
- Graduates remaining in the community

Brown, J. David, John S. Earle and Dana Lup. “What Makes Small Firms Grow? Finance, Human Capital, Technical Assistance, and the Business Environment in Romania.” Economic Development and Cultural Change 54 (October 2005):33-70.

Summary

This paper sought to explore new ground by looking at the policy-relevant factors that may stimulate or hinder small start-up companies, and fill the need for quantitative studies using panel data to analyze statistical relationships between firm growth and objective measures of factors related to policies. They found that availability of loans is a factor while internal finance and trade credit tend to be unimportant. They also found that high school education raises growth but university education and worker training are not necessarily a factor. Technical assistance was also considered a weak factor for small business growth success.

Metrics Suggested

- Retained earnings,
- conventional bank lending,
- informal credit markets,
- tax credits offered by the state
- Membership in business association
- Membership in consultancy programs

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- Rate of usefulness of assistance programs

Community Development Financial Institutions Data Project. Providing Capital, Building Communities, Creating Impact. Fourth Edition. Washington, D.C. 2004. 10 November 2006
<http://www.cdfi.org/downloads/CDP_fy2004_complete.pdf>.

Summary

Data from 517 Community Development Financial Institutions was analyzed to demonstrate the impact of CDFIs on emerging domestic markets throughout the U.S. Some of the results include that almost 7,000 businesses received assistance from CDFIs resulting in 28,330 jobs. The financial assistance served niche domestic markets that are underserved by traditional lending institutions and the transactions were prudent and effective. CDFIs were also shown to be flexible and timely enough to grow and change with the dynamics of the market and respond effectively to large-scale disasters such as hurricane Katrina.

Metrics Suggested

- Number of people receiving group-based training
- Number of people receiving one on one technical assistance
- Number of organizations receiving training
- Number of jobs created overall from the project
- Number of business receiving training

Enterprise Corporation for the Delta. Enterprise Corporation for the Delta Program Monitoring Report—Business Technical Assistance. 2003. 10 November 2006
<<http://www.ecd.org/Documents/Evaluation/2003TAMonitoringReport.pdf>>.

Summary

This report provides baseline information about the Enterprise Corporation for the Delta's technical Assistance activities associated with their Community Development Financial Institution. This baseline is established to measure the progress of their efforts to address the non-financial needs of potential and existing customers and lay the groundwork for more in-depth analysis in the future.

The ECD has three technical assistance activities: FastTrac entrepreneurial training, brokered TA and Business LINC mentor/protégé program. ECD learned that very few graduates from FastTrac attained loan financing, but many graduates demonstrated more sound decision making. The Brokered TA mostly focused on establishing the foundation for future analysis. The mentoring program of the ECD found that creating a mentoring environment for small start-ups works, but the conditions for its success is very different than many urban programs mostly because there are not large established companies to become a cadre of mentors. They also found that protégés were more successful if they

had several years of experience and if they were in close proximity to their mentor.

Metrics Suggested

- Number of mentor relationships established
- Finance seeking intentions of graduates, before and after course completion
- Number of technical assistance engagements
- Types of TA services requested
- Loan ratings of TA graduates and loan ratings of control group
- Satisfaction level with mentor programs or other TA initiatives.

Greenburg, Elizabeth and Richard Reeder. “Who Benefits from Business Assistance Programs? Results of the ERS Rural Manufacturing Survey.” Agriculture Information Bulletin Number 736-04. United States Department of Agriculture. 1998.

Summary

The authors sought to find out how much government programs helped rural manufacturers and who exactly is benefiting from these programs. They discovered that over 60 percent of manufacturing establishments benefited from the programs and 28 percent of these firms found these programs to be very important to their operations over the last three years. They discovered that manufacturers using advanced technologies benefited more than other manufacturers. Also, large businesses were more likely to benefit than small ones, although small firms seemed to have more problems and benefit the most once assistance was administered.

Business assistance programs were identified as: tax incentives, loans (direct, indirect/guaranteed, and revolving), industrial parks and enterprise zones, and training and technical assistance.

Manufacturing establishments were characterized by the following: metro/non metro, geographic region in the U.S., employment size, type (branch plant and high tech), and distressed (high poverty rates, high unemployment rates and population loss).

The study further analyzed which types of firms benefited from the specific types of assistance programs. State and local tax breaks benefited the largest proportion of nonmetro establishments (46 percent), training and technical assistance (29 percent), industrial parks/enterprise zones (21 percent), direct loans (15 percent), guaranteed loans (13 percent), revolving loan funds (9 percent).

Metrics Suggested

-
- Survey of how important each assistance program was to their business. This metric can be cross-analyzed by
 - Geographic location
 - Size
 - Type of business
 - Type of distressed area
 - Rural/Urban

Lambrecht, Johan and Fabrice Pinray. “An Evaluation of Public Support Measures for Private External Consultancies to SMEs in the Walloon Region of Belgium.” Entrepreneurship and Regional Development. 17.2 (March 2005):89-108.

Summary

This paper evaluated public support measures for private consultancies to SMEs in the Walloon region of Belgium. It presents an analysis of the supply and demand, an evaluation of the efficiency and the effectiveness of policy measures, and real policy recommendations. The paper recommends that the real needs of the entrepreneur and of the SME determine the publicly financed advisory process. It also recommends a “one stop shop” for private external consultants that help SMEs.

Metrics Suggested

- Profit
- Sales
- Market Share
- Employment

Microenterprise Fund for Innovation, Effectiveness, Learning and Dissemination (FIELD). Improving Microenterprise Training and Technical Assistance: Findings for Program Managers. 2002. 10 November 2006 <<http://www.fieldus.org/Publications/improvingmicro.pdf>>.

One of the first tasks FIELD set for itself and for the organizations who received awards from their RFPs was to answer “What makes for effective training and technical assistance?” In support of this question they also asked “What are the appropriate indicators, which intermediate measures are better indicators of financial impact on clients, and what practical approaches can programs use to document and track outcomes?”

They found that many entrepreneurs sustained and grew their businesses, while some other businesses floundered. This was mostly due to family or personal reasons. The analysis found that effective training programs acknowledge the importance of client readiness for business and offer a range of services to help clients meet these needs. It also found that adult learning theory is an effective method for designing and delivering training. Training must include soft skills

and basic competencies as well as key financial and marketing skills. Finally, FIELD learned TA should be offered within a structure that keeps clients connected to a larger program, but places the initiative on the client to receive services.

Metrics Suggested

- Completion of Training
- Development of Business Plan
- Progress in Seeking Business Financing
- Business Starts
- Business Expansions
- Business Stabilizations
- Is there an improvement in income reporting
- Increase in business assets
- Increase in personal assets, such as cars, savings, homeownership.

Microenterprise Fund for Innovation, effectiveness, Learning and Dissemination. “Assessing the Effectiveness of Training and Technical Assistance.” FIELD Forum Issue 1. 1999. 10 November 2006
<http://www.fieldus.org/Publications/Field_Forum1.pdf>.

Summary

FIELD recognizes that training and technical assistance to small businesses has a significant impact on their success, but there is little data to substantiate this to policymakers and funders. Therefore they sought to identify models and other metrics to show what makes for effective training and how that equates to lower costs. FIELD asked practitioners to propose strategies and identify indicators that could establish a link between service and outcomes. Some intermediate and final outcomes were suggested.

Suggested Metrics

- Course completion and graduation
- Pre and post knowledge testing
- Business plan completion
- Satisfaction
- Hours of Training and TA
- Sequence of Training and TA
- Business Skills acquired
- Personal effectiveness skills
- Established networks/relationships
- Business start-ups/survivals
- Sales and profit/loss
- Number of employees
- Employee wages and benefits
- Household income assets and net worth
- Change in public assistance

Oldsman, Eric. "Evaluation as an Effective Management Tool." Nexus Associates, Inc. 2003. 10 November 2006 <<http://www.nexus-associates.com/hanoi.pdf>>.

Summary

This paper critiques the Performance Measurement Framework established by the Committee of Donor Agencies for Small Enterprise Development to learn more about the performance of business development services. The paper suggests that the PMF framework can be useful as a tool for managers to improve their performance but considerable caution should be taken when using common performance standards for such diverse programs. The author recommends that evaluations be grounded in explicit theories of the particular initiatives.

Things to consider when developing metrics

- Characterize conditions within markets to learn more about their structure and performance
- Determine specific needs within a target population of firms in order to design new programs
- Establish whether existing programs are being implemented as intended
- Find out whether existing programs are achieving their objectives
- Compare existing programs to judge the relative merits of different approaches to addressing specific needs.
- Examine operations in great detail (aggregate data can mask a lot).

Oldsman, Eric. "Do Manufacturing Extension Programs Matter?" Research Policy 25.2 (March 1996):215-232.

Summary

Based on his evaluation of the New York based Industrial Technology Extension Service Program, Oldsman finds that manufacturing extension programs can have a favorable impact on participating companies. Because of the expertise of field agents, firms have been able to reduce costs, particularly with respect to direct and indirect labor, and in some instances increase revenue.

He found that MEP programs should be designed to focus on adding value rather than cutting costs; pay attention to direct, long-term assistance; and foster cooperation to compensate for the lack of internal economies of scale.

Metrics Suggested

- Refining layout of operations
- Purchased or developed new software
- Ask entrepreneurs if they had not received assistance would they have stayed in operation and in the state?
- Cost savings

-
- Direct labor productivity
 - Reduction in inventory
 - Reductions in manufacturing lead time
 - Reductions in direct labor costs per unit
 - Reductions in material costs per unit
 - Reductions in energy costs per unit
 - Reductions in indirect labor costs per unit
 - Reductions in other overhead costs

Technology Transfer

Association of University Technology Managers. AUTM U.S. Licensing Survey: FY 2004 Survey Summary. 2004. 10 November 2006
<http://www.autm.net/events/File/Surveys/03_Abridged_Survey.pdf>.

Summary

This year's Licensing Survey shows a continued steady growth in the 6 percent range for most of the performance measures that are considered meaningful indicators within the profession:

- Products available to the public
- Invention disclosures received
- Licenses and options executed
- Licenses and options active
- Licenses and options generating income
- Licenses and options generating running royalties
- Net income

One or two important performance measures, specifically U.S. patents issued, though down from fiscal year 2003, appeared to be consistent with long-term growth trends. However, the most dramatic results were the clear evidence of a recovery from the very difficult market conditions for new company startups reported in the fiscal years 2002 and 2003 Licensing Surveys. Institutions launched 23.5 percent more new startups in fiscal year 2004 than in fiscal year 2003, and the number of existing startup companies that went out of business declined more than 30 percent.

The new startup company activity reflects the changed circumstances in capital markets. The second half of 2003 will be remembered as the end of the venture industry's hemorrhaging that followed the nearly simultaneous collapse of the e-commerce, telecommunications and biotechnology markets.

The second half of 2003 also saw the first revitalization of the initial public offering market since 2000. The number of venture-backed IPOs began increasing in the second half of 2003, with 20 of the 22 venture backed IPOs for 2003 occurring in the third and fourth quarters of the year. The first two quarters of 2004 saw 34 venture-backed IPOs, and the year ended with 67 venture-backed IPOs raising \$4.98 billion vs. the \$1.4 billion raised in 2003.

Metrics Suggested

- Products available to the public
- Invention disclosures received
- Licenses and options executed
- Licenses and options active
- Licenses and options generating income
- Licenses and options generating running royalties

-
- Net income
 - New Startups
 - Number of startups going out of business
 - University equity interests in their startups
 - IPOs

Audretsch, David B., Taylor Aldridge, and Alexander Oettl. The Knowledge Filter and Economic Growth: The Role of Scientist Entrepreneurship. Ewing Marion Kauffman Foundation. 2006. 10 November 2006
<http://www.kauffman.org/pdf/scientist_entrepreneurs_audretsch.pdf>.

Summary

This study examines the prevalence and determinants of the commercialization of research by the top twenty percent of university scientists funded by grants from the National Cancer Institute (NCI). Because the two publicly available modes of scientist commercialization – patents and Small Business Innovation Research (SBIR) grants – do not cover the full spectrum of commercializing activities undertaken by university scientists, the study also includes two additional measures obtained from detailed scientist interviews: licensing of intellectual property and starting a new firm. These measures are used to assess both the prevalence and determinants of scientist commercialization of research. In particular, two distinct routes for commercializing scientist research are identified, the Technology Transfer Office (TTO) route and the entrepreneurial route, which does not involve assigning a patent to the university. This study in no way provides an assessment or judgment about the efficacy of the TTO. Rather, this study highlights the extent to which additional commercialization of research takes place, suggesting that the contribution of universities to U.S. innovation and ultimately economic growth may be greater than had previously been believed. Relevant findings include:

- Two paths for commercialization of scientist research are identified - the *TTO route* and the *entrepreneurial route*. Scientists who select the *TTO route* by commercializing their research through assigning all patents to their university TTO account for 70 percent of NCI patenting scientists. Scientists who choose the *entrepreneurial route* to commercialize their research, in that they do not assign patents to their university TTO, comprise 30 percent of patenting NCI scientists.
- Social capital enhances the propensity for scientists to commercialize their research. The impact of social capital is particularly high for the commercialization mode of scientist entrepreneurship.
- Scientists choosing the entrepreneurial route to commercialize their research, by not assigning patents to their university to commercialize research, tend to rely on the commercialization mode of entrepreneurship. By contrast, scientists who select the *TTO route* by assigning their patents to the university tend to rely on the commercialization mode of licensing.

Metrics suggested

-
- Research grants to university researchers (i.e., SBIR)
 - Patents
 - Licenses of intellectual property
 - University researchers starting new firms
 - Route by which commercialization happens- entrepreneurial or through tech transfer office

Chukumba, Celestine and Richard Jensen. “University Invention, Entrepreneurship, and Start-Ups.” National Bureau of Economic Research Working Paper No. 11475. July 2005.

Summary

This study examines the commercialization of university inventions in licensing to both start-up firms and established firms, and seek to determine when licensing to start-ups is more likely. They construct a theoretical model that predicts start-ups are more likely if their opportunity cost of development and commercialization is lower or if the technology transfer officer’s (TTO) opportunity cost of searching for a partner among established firms is higher. Using data from the Association of University Technology Managers, the National Venture Capital Association Yearbook, and the National Research Council, the study finds that inventor quality and measures of past TTO success (age, the number of disclosures, gross royalties) are all positively and significantly related to the number of licenses to both start-ups and established firms. However, it also finds that start-up activity is positively and significantly related to the S&P 500, but negatively and significantly related to the interest rate and rate of return to venture capital.

Metrics suggested

- Licensing to start-ups and existing firms
- Start-ups created
- Partnering with outside entities by tech transfer offices
- Venture capital secured by start-ups

Markman, Gideon, et al. “Entrepreneurship and University-based Technology Transfer.” Journal of Business Venturing 20.2 (2005):241-263.

Summary

The success of business incubators and technology parks in university settings is often determined by how well technology is transferred from the labs to their startup firms. University technology transfer offices (UTTOs) function as “technology intermediaries” in fulfilling this role. This article builds a framework to address two questions: (a) Which UTTOs’ structures and licensing strategies are most conducive to new venture formation; and (b) how are the various UTTOs’ structures and licensing strategies correlated with each other. The findings reveal a complex set of relationships between UTTO structure and strategies, new venture formation, and business incubation.

Based on interviews with 128 UTTO directors, findings show that whereas for-profit UTTO structures are positively related to new venture formation, traditional university and nonprofit UTTO structures are more likely to correlate with the presence of university-based business incubators. Licensing-for equity strategy is positively related to new venture formation while sponsored research licensing strategy is negatively related. The licensing-for-cash strategy, the most prevalent transfer strategy, is least correlated to new venture formation. A content analysis of UTTO mission statements also revealed an overemphasis on royalty income and an under emphasis on entrepreneurship.

Metrics Suggested

- Structure of tech transfer office (for- or non-profit)
- Incubators
- Technology parks
- Startup firms
- Business incubation
- Licensing
- University equity shares in startups
- Applied v. basic research at university where tech transfer office is located

Oklahoma Center for the Advancement of Science and Technology. Impact Report 2006. Oklahoma City, Oklahoma. January 2006. 10 November 2006 <<http://www.ocast.state.ok.us/Portals/0/docs/brochures/2006-ImpactReport.pdf>>.

Summary

The report summarized OCAST's program impacts in terms of award amounts and leveraged private and federal funds. It also gives some detail about each program, including the Oklahoma Technology Commercialization Center, whose progress is measured in terms of facilitation of capital acquisition, jobs created, and companies served.

Metrics suggested

- Amount of capital acquisition facilitated
- Jobs created
- Number of technology companies served

Palmintera, Diane. Accelerating Economic Development Through University Technology Transfer. Reston, VA: Innovation Associates Inc., February 2005.

Summary

This report highlights models of university tech transfer and commercialization, related efforts like entrepreneurship programs, and the infrastructure and environment needed to support commercialization efforts. It includes case

studies of university-based tech transfer and related economic development initiatives that lay the groundwork for state, university, and corporate actions to leverage university resources.

Practices in tech transfer at 10 universities were examined, along with related entrepreneurship programs and other programs. These case studies were analyzed to extract best practices and recommendations.

Suggested Metrics

- Corporate sponsored research
- Levels of government funding
- Seed capital and source (i.e., university-created funds or private funds)
- Innovation centers
- Number of start-ups created
- Number of start-ups assisted
- Incubators
- Research Parks
- Employment

Phan, Phillip and Donald Siegel. “The Effectiveness of University Technology Transfer: Lessons Learned from Quantitative and Qualitative Research in the U.S. and the U.K.” Rensselaer Working Papers in Economics Number 0609. Rensselaer Polytechnic Institute. April 2006.

Summary

In recent years, there have been numerous studies of the effectiveness of university technology transfer. Such technology transfer mechanisms include licensing agreements between the university and private firms, science parks, incubators, and university-based startups. This study reviews and synthesizes these papers and presents some recommendations on how to enhance effectiveness. Implementation of these recommendations will depend on the mechanisms that universities choose to stress, based on their technology transfer “strategy.” For example, institutions that emphasize the entrepreneurial dimension of technology transfer must address skill deficiencies in technology transfer offices, reward systems that are inconsistent with enhanced entrepreneurial activity and the lack of training for faculty members, post-docs, and graduate students in starting new ventures or interacting with entrepreneurs.

Metrics Suggested

- Licensing
- Science parks
- Incubators
- University-based startups
- Training provided to employees in working with entrepreneurs/start ups

APPENDIX B NON-PROJECT* STAKEHOLDER INTERVIEWS

REGIONAL STAKEHOLDERS	REGIONAL STAKEHOLDER ORGANIZATIONS
Dinah Adkins	President, National Business Incubation Association (OH)
Cathy Ashmore	Executive Director, Consortium for Entrepreneurship Education
Bill Campbell	Director, Alabama Small Business Development Centers
Caroline Carpenter	Program Director, W.K. Kellogg Foundation
Dale Carroll	President, Advantage West (NC)
Pam Curry	Executive Director, Center for Economic Options
Eleanor Herndon	Executive Director, North Carolina REAL
June Holley	Consultant, Network Weaving (OH)
Mary Hunt-Lieving	Program Officer, Benedum Foundation
Lisa Ison	President, New Century Venture Center (VA)
Kris Kimmel	President, Kentucky Science and Technology Corporation
Bill Loope	New River Community and Technical College (WV)
Justin Maxson	President, MACED
Ray Moncrief	Vice President, Kentucky Highlands Investment Corporation
Welthy Soni Myers	Managing Director for Special Initiatives, Association for Enterprise Opportunity (VT)
Becky Naugle	Director, Kentucky Small Business Development Centers
Kim Pate	Vice President, CFED
Stuart Rosenfeld	Principal, Regional Technology Strategies (NC)
Greg Rutherford	President, York Technical College (SC)
Jeff Spencer	Executive Director, Ohio Valley Regional Development Commission
Kerwin Tesdell	President, Community Development Venture Capital Alliance (NY)
Jesse White	Director, Office of Economic and Business Development, University of North Carolina
PROGRAM LEADER	STATE
Denise Ambrose	Program Manager, Virginia Department of Housing and Community Development
Bonnie Ammons	Senior Program Manager, Office of Community Grant Programs (SC)
Todd Christiansen	Associate Director, Virginia Department of Housing and Community Development
Olivia Collier	ARC Program Manager, North Carolina
Bonnie Durham	ARC Program Manager, Alabama
Al Feldstein	ARC Program Manager, Maryland
Neil Fowler	ARC Program Manager, Pennsylvania
Ralph Goolsby	ARC Program Manager, West Virginia
Elisabeth Kovacs	ARC Program Manager, South Carolina
Rick Meredith	Assistant Commissioner, Tennessee Department of Economic and Community Development
Peggy Satterly	ARC Program Manager, Kentucky
Sara Stuckey	Retired ARC Program Manager, North Carolina
James Thompson	ARC Program Manager, Georgia
Kyle Wilbur	ARC Program Manager, New York

*Some stakeholders were from organizations that received ARC funding for entrepreneurship projects but were included because they (1) had broad and unique knowledge of some program area and/or entrepreneurship, (2) the organization's project was not included in the sample, and/or (3) the individual was not interviewed as follow up with grantees included in the sample.

Appendix C PROTOCOL FOR PROJECT LEADERS

Enter the following data from the project folder:

Project Number: _____ Project Status (circle one): I
C1 C2

Project Title: _____ Project Type (circle one): C N I
E TA

Grantee: _____

Year Project Initiated: _____ Number of Years of ARC Funding:

Name of Person Interviewed: _____ Phone/Email:

Organization of Person Interviewed: _____

ARC Funds Invested: _____ Leveraged

Funds: _____

Project Summary:

Stated goals of the project:

Number of Businesses Served:
Number of jobs created
Jobs retained:
Amount of leveraged private investment:

For all calls:

1. Were you involved with this project and/or are you knowledgeable about it? (If no, get referral.) If yes, in what capacity did you work with the project?
2. What is your background? (Try to understand the importance of their leadership.) Alternative: Tell me a little about your background and experience with projects like this in the past. How did you get involved in this project? How long have you been involved with the relevant community? If not long → have you had similar experiences in your previous communities?

-
3. What was the problem that you were trying to address with this project?
How were you trying to address this problem?
 4. Did you think the project was a success? Why or why not? What were the elements of success/failure?
 5. What specific results or outcomes were achieved through this project during the period of ARC investment?
 - a. Are there specific results that you believe were particularly important? If so, why?
 - b. Are there specific results that were unintended or unexpected?
 - c. Do you feel you achieved the objectives set forth for this project?
 6. Has the project continued after ARC funding ended?
 - a. If yes, how was the project funded after ARC?
 - b. What outcomes have you experienced post-ARC?
 7. What value did this project create in your service area/community?
 - a. Are there specific quantifiable changes that you have seen in the community because of this project?
 - b. Are there specific qualitative changes that you have seen in the community because of this project?
 8. Is there anything you learned from this project that would be useful to others who are attempting to do something similar in their communities?
 9. Is there anything else you would like to add about the project and its implementation in your service area/community?
 10. Is there anyone else who is familiar with this project and its broad impacts on the community and/or the region who might provide us with useful insights? (If yes, collect contact information.)

GO TO SPECIFIC QUESTIONS FOR EACH TYPE OF PROJECT

Capital

	At ARC Project End	After ARC Funding
Total number of loans		
Number of years operated		
Total \$ amount of loans		
Number of funds created		
Size of Fund(s)		
Distribution of loans by sector		
\$ funds leveraged		
Jobs created		
Jobs retained		
Percent of portfolio companies still in business		
*Wages, income per job or total		

Comments:

Sectors

	At ARC Project End	After ARC Funding
Number of participants		
Number of members		
Jobs created		
Jobs retained		
*Increase in interfirm collaboration		
*Change in total sector sales		
*Number of business start-ups in targeted sector		
*Number of participants retained in service area		
*Number of participants still in business		

Comments:

Incubators

	At ARC Project End	After ARC Funding
Number of current clients		
Number of clients served		
Number of graduated firms		
Number of clients still in business		
Amount \$ leveraged by incubator		
*Number of graduates retained in service area		
Jobs created while in incubator		
Jobs created after graduation		
Jobs retained while in incubator		
Jobs retained post-graduation		
\$ capital raised by tenants		

Comments:

Education

	At ARC Project End	After ARC Funding
Number of participants enrolled		
Number of participants completing program		
Number of schools offering entrepreneurship education pre and post		
Number of schools in service area, pre and post		
Change in student performance pre and post		
Number of student businesses started		
Number of students that stay within the service area		
*Increase in awareness of business concepts		
*Increase in number considering business creation as a career option		
* Change in community attitudes toward entrepreneurship		

Comments:

Technical Assistance

	At ARC Project End	After ARC Funding
Number of business starts		
Number of business expansions		
Number of clients		
*Number of discouraged clients		
Number of clients still in business		
Number of jobs created		
Number of jobs retained		
*Firm performance (\$ capital raised)		
*Number of clients retained in service area		
*Number of clients still in business		

Comments:

APPENDIX D PROTOCOL FOR NON-PROJECT STAKEHOLDERS

1. Background information on the stakeholder
Name:
Title:
Organization:
2. In what ways are you (or have you been) involved with entrepreneurship and/or economic development in the Appalachian Region?
3. Were you directly involved in any specific projects funded by the ARC Entrepreneurship Initiative? If yes, please identify the project(s):
4. [For State Alternates Only] What was your state's strategy for engaging with ARC's Entrepreneurship Initiative? (Was this initiative a priority in your state? Was there a single statewide project approach or did individual communities/organizations propose projects?)
5. [For State Alternative Only] Did your state's participation in ARC's Entrepreneurship Initiative lead to any change in the policy environment for supporting entrepreneurship? If so, please explain.
6. What do you think are the most significant region-wide impacts associated with ARC Entrepreneurship Initiative projects generally? Were there specific community or project impacts that you can identify?
7. How have these broader impacts been measured?
8. Would you provide some concrete examples of these broader impacts?
9. In your view, what has limited the broader impacts associated with the ARC projects?
10. In your view, what has contributed to the broader impacts associated with the ARC projects?
11. Do you think the ARC Entrepreneurship Initiative projects have had an impact on creating a more supportive climate for entrepreneurs in the region? Why or why not?

12. Considering the broad impacts associated with the ARC Entrepreneurship Initiative you have identified above, what do you think are some of the most valuable or effective performance metrics for capturing these impacts?