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THEME ISSUE OVERVIEW: PUBLIC SECTOR OPTIONS FOR CREATING JOBS

Stephan J. Goetz

JEL Classifications: H53, J08

Keywords: Community Business Matching, Employment, Entrepreneurship, Gaps and Disconnects, Jobs Policy, Skills Distribution

In a recent Boston Globe op ed article, “Is the ‘Governor Effect’ Real?,” Harvard University economist Edward Glaeser (2011) asks whether elected state officials have the power to influence the trajectory of job growth within their states. Glaeser questions one governor’s claim that he is responsible for the substantial job growth in his state. Using a comparative statistical analysis, he estimates the “Governor effect” on employment growth to be less than one-tenth of 1%. This means that the governor in question merely kept the economy on its natural employment growth path, and that his performance was more or less on par with what would have been expected for the state’s economy based on its inherent historical growth momentum.

Expectations are also high that presidents have the power to lower persistently high unemployment rates through carefully crafted national policy. Yet presidents usually inherit economic conditions that are beyond their control and just as the current President has limited influence over prices at the gas pump, his options for creating new jobs are limited. Furthermore, although there are rare exceptions, public sector leaders generally have difficulty “picking winners” when they engage in industrial recruitment or targeting activities. As a result, most economists favor general policies that benefit all consumers and firms in a community—such as efficient public services, supportive business environments and encouraging innovation and entrepreneurship—over preferential taxes or financial subsidies for specific industries (Weinstein and Partridge 2011).

Recognizing these caveats and limitations, faculty and educators within the Land Grant University system have identified specific economic development strategies that not only can be implemented by the public sector—they are feasible—but that also promise to deliver tangible results. This *Choices* theme issue outlines ideas for communities struggling with on-going lackluster jobs recovery. The authors present concrete strategies available to policymakers with the potential to enhance job growth in American communities in a sustainable manner.

In particular, the articles by Loveridge et al. and Marshall focus on entrepreneurship within communities, describing both specific approaches and why the uptake of promising approaches sometimes lags behind. Deller examines how analysis of so-called gaps and disconnects within a community can be used to identify strategic opportunities for local entrepreneurs to supply goods and services that are currently imported.

Harris and co-authors describe a process in which community desires and preferences are matched with strategic location features sought by firms, producing an index of desirability *and* compatibility. Providing an important reality check, Gabe et al. outline the limits to economic activity that are imposed by lagging workforce skills in remote and sparsely-populated rural areas. Finally, Hutcheson and Morrison describe a novel community-level approach that goes one step beyond strategic planning, and they provide concrete results related to job creation from a project in Indiana.

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RESIDENTS SUPPORT ENTREPRENEURSHIP BUT POLICY LAGS

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Keywords: Community, Growth Entrepreneurship

With recent unemployment rates at above-normal levels, attention has naturally turned to methods for creating jobs at a faster rate. In elections, politicians promise tax breaks, energy programs, or other policies to create jobs. While short-term policy responses to address immediate needs have their place, sustained economic development may be enhanced through longer-term policies to encourage more entrepreneurship. Americans are, in general, "pro-entrepreneurship" (BBC World Service, 2011), with business leaders such as Henry Ford and Steve Jobs generally viewed as national heroes. As a nation, we are proud of our entrepreneurs but there is room for improvement in how we support them.

America is Well-Positioned for Business-Led Growth

We have highly developed transportation networks, most of us are native speakers of the world's preferred business language, and our immigrants provide the potential for entrepreneurs to link to export markets. Among our assets are the universities—training and innovation both support entrepreneurial businesses. Much of America's perceived decline in reality simply reflects rapid growth in countries that, after decades of failed policies, have begun to emulate the United States by unleashing the power of entrepreneurs. The world economy is shifting and reallocating opportunities, markets are booming in industrializing countries, so there are places for new business ventures in the economy. Increasing the number and performance of entrepreneurs can help maintain our position as the world leader in many arenas (Schramm, 2004).

Measuring Regional Differences in Entrepreneurial Attitudes

We can improve national prosperity by enhancing the performance of lagging regions. Positive attitudes should help encourage entrepreneurs within a region, but measuring entrepreneurial attitudes is not as straightforward as one might wish (Goetz et al., 2010). Focusing on start-ups as a measure is problematic because people may start a business only as a stop-gap measure under conditions of long-term unemployment (Koellinger and Thurik, 2011). One could also examine growth in jobs, income, or firms, but here again the relationship to attitudes is not straightforward: Growth is conditioned by the industrial mix and business cycles. Is North Dakota currently booming because the residents have entrepreneurial attitudes or is it because the state has fossil fuels now accessible by new extraction methods? One could also look at locations of high tech industries as an indicator of entrepreneurial attitude, but this is also not straightforward, as not all entrepreneurs are what Schulman and Rogoff (2011) define as technology-enabled. What about a person who has a better business model for a low tech business, such as Starbucks in its early years? This person is clearly entrepreneurial but would not be captured in measures of business innovation such as PhDs in the workforce or patents.

Given the complexities of measuring entrepreneurial attitudes indirectly, we surveyed Michigan residents. Respondents indicated their level of agreement with the following five statements:

1. How important is it for Michigan high schools to encourage young people to explore careers that involve starting a business?
2. Locally owned businesses contribute more to the overall welfare of a community than nationally and internationally owned businesses.
3. I would encourage a young person to be self-employed or start their own business instead of working for somebody else.

4. People who work for large employers are less likely to lose their source of income than people who work for small employers or are self-employed.
5. People who own their own business or who are self-employed can make just as good of a living as people who work for someone else.

Each statement was scored on a five point scale. A higher score implies more support for entrepreneurship. The results are shown in Table 1. The first insight that emerges is the very high level of agreement with several of the statements, with means near or above 4. Despite the high levels of agreement, a statistical test for differences in the means showed that attitudes vary across the six regions for items 1 through 4, but not 5.

Table 1

Mean Entrepreneurship Attitude Scores across Michigan Regions

	High Schools Should Encourage	Local Firms Contribute More	I would Encourage Youth	Small Firms are Riskier	Possible to Make a Good Living
Upper Peninsula	4.38	4.48	3.44	2.75	3.94
Northern Lower	4.36	4.3	3.79	2.55	4.07
Central	4.35	4.24	3.49	3.09	4.08
Southwest	4.3	4.18	3.49	2.95	4.06
Southeast	4.31	4.23	3.6	3.01	4.15
City of Detroit	4.75	3.86	4.21	2.89	4.07

Data source: State of the State Survey. Analysis by Loveridge et al., 2012. (n=918).

Detroit accounts for much of the difference across the regions. When we exclude Detroit, only item 4, about risk, is still statistically different across the remaining regions. We also explored the relationship between attitudes and local conditions: The structure of local employment does seem to matter in attitude formation, with respondents from areas with large firms less likely to equate large employers with income security.

From Table 1, we know that attitudes can differ by region. Can a region's entrepreneurial attitudes be changed by public policy? Much of the public dialog on increasing entrepreneurship focuses on reducing taxes. The opposing viewpoint is that reduced taxes entail service cuts that impact the business indirectly through poor schools, roads, etc. The empirical evidence about the effects of taxes on business growth is inconclusive (Markusen, 2007). Understanding that attitudes towards entrepreneurship vary by region may help explain why business response to changes in tax rates is mixed. Greater emphasis on low cost ways to enhance a region's entrepreneurial attitudes could potentially shift outcomes of other policies meant to enhance business growth.

Weak points in a region's entrepreneurial support infrastructure may vary from one place to the next. One place may put too much emphasis on small business start-ups, while another may need more start-ups. Lichtenstein and Lyons (2006) note the importance of considering a region's entrepreneurial pipeline, with entrepreneurs operating at every business size category. They argue that growth requires vibrant businesses of all sizes. Small businesses need large businesses as customers or role models, and larger businesses need small businesses as suppliers. Loveridge and Nizalov (2007) tested this notion in Michigan, finding the state is generally under supplied in firms with 1 to 4 employees relative to larger firms. Michigan has historically relied on large scale manufacturing to produce attractive jobs for high school graduates, and in this environment, incentives to start and grow small businesses are minimal. Thus Michigan may be missing a key link in its entrepreneurial pipeline due to its industrial legacy. Lichtenstein and Lyons (2010) and others note that a person's status as an entrepreneur is defined by his or her goals, not business size. If a business owner or manager wants to grow the operation, he or she is an entrepreneur. Thus efforts aimed strictly at "small business" may be inappropriate if the overall goal is growth of the local economy. While programs to help small or nongrowth oriented businesses may be needed to provide local amenities or critical businesses services, it is important not to conflate "small business" with entrepreneur. Also, not all entrepreneurs operate for-profit firms. For example, a non profit university may exhibit entrepreneurship by attracting stronger students or more funding. Perhaps a new word is needed in the economic development lexicon to distinguish between a small business owner and what Lichtenstein and Lyons consider an entrepreneur: growthineer. A growthineer designs and executes organizational growth in revenue, market share or employment.

Community-Based Models for Business Growth

Given our earlier observations that 1) attitudes may vary by place and 2) one should look across the business size spectrum to find growth oriented businesses, what actions are available to local groups seeking to enhance their

region's performance? A brief survey of models and areas for future development is provided here to help decision-makers begin to select strategies for their region.

Youth-oriented Models

A number of programs target youth of various ages on the theory that early exposure to business development ideas can seed future job creation and help youth explore careers. A partial list of programs includes both club-based and school-based 4-H programs, the national networks supported by the Council for Economic Education, Junior Achievement, and Rural Entrepreneurship through Action Learning. Despite their long histories, uptake of these programs has been modest. School funding has increased (NEA Research, 2009), but current emphasis is on “core” subjects (Stevenson, 2010), so these programs may be seen as add-ons that draw resources away from the focused objectives. Stronger federal incentives to embrace integration of entrepreneurship with core subjects in curriculum design could encourage greater uptake. Another possible reason for low levels of uptake of school-based entrepreneurship programs is that these programs, while modest in cost relative to other local economic development programs, may take up to a decade or more to impact jobs in the community—students must mature, make their way into the workforce, start a successful business and then grow it. All this takes time, and the public is impatient (Loveridge et al., 2010).

A strategy for those wishing to promote this type of program is to more directly tie the hands-on learning exercises in the activities to formal learning objectives established by districts seeking to improve their standardized scores. Mapping business development training to the basic learning objectives may earn school administrator buy-in faster than an add-on approach. For example, the math curriculum could emphasize business examples and activities. Students could create advertising in art and writing classes. History classes could teach how businesses have evolved over the centuries and their role in changing society. Business education need not come at the expense of core subjects.

Business Needs Assessments

Here again, the local decision-maker can select from a number of models. Economic development professionals often employ visitation programs to determine needs of major businesses in their area. The typical program is *ad hoc* in nature. Some university extension systems formalize the visitation process by integrating a broad-based survey with strategic planning sessions around issues raised in the course of visits. Sirolli (2004) proposes an “Enterprise Facilitation” model that breaks the retention and expansion work away from other professional economic developer functions such as marketing, infrastructure grants, and attraction. Sirolli calls for working full-time with growth-oriented local firms to address their management concerns and procure necessary growth resources (Macke, Markley, and Pages, 2005). Compared with “entrepreneurship” and industrial attraction, working with existing businesses likely offers the highest chance of immediate job creation payback for local dollars invested, but the odds work against dramatic immediate effects. More generally, externally-guided programs may lose focus once the nonlocal advisor moves on to the next community. To build a more sustainable system for supporting community-based entrepreneurship, Michigan State University offers the “Creating Entrepreneurial Communities” (CEC) Program. This program builds on notions from the popular “economic gardening” approach that grows businesses by giving them access to better information, stronger networks, and by focusing on local quality of life (Morgan, Lambe, and Freyer, 2009). The CEC program gives communities tools for creating support systems without imposing any predetermined sets of actions upon participants. Participants set priorities based on perceived needs and the passions of the local team, and a “coach” looks for resources to help in implementation. The expectation is that communities will more likely continue activities after the formal engagement with the university ends. The loose goal set also provides insights into which types of activities local leaders choose when they are in the driver’s seat. Results from the first year of the program indicate that participating teams are more interested or able to implement local networking activities than in changing local policies to become more business-friendly. Better policy change tools or ways of identifying local policy barriers may be needed.

Industry Targeting Models

While “industrial recruitment” has been the object of academic criticism, it continues to be a popular policy tool (Hodge, 2011) for various reasons (Loveridge, 1996). Some academics have begun to rethink industrial recruitment. While broad-based tax abatements for any industry are still viewed with skepticism, Goetz, Deller, and Harris (2009) place growth and attraction on the same plane by presenting stronger analytical tools and input-gathering mechanisms to inform targeted regional growth policies. Such policies include tax abatements to attract critical input supply or downstream firms. An example of this was identified by Kilkeny (2011): at Kansas State University (KSU), a recruiter brings firms that are already funding KSU research to town. Other targeting policies focus on seed capital, incubators for start-ups, or workforce training programs in selected sectors. These policies should be considered at a multi-county level as communities compete not with each other, but globally. Functional economic areas are

important for the analysis of rational policies to foster growth. While the Minneapolis-St. Paul area is an example of a region that shares tax bases to develop area-wide initiatives, more often than not regional cooperation encounters resistance due to travel time, age-old rivalries, and concern about fairness. These natural sources of resistance result in slow uptake of regional economic development initiatives. State and national policies to encourage greater coordination, such as United States Department of Agriculture Rural Development's Stronger Economies Together program or Housing and Urban Development's Sustainable Communities may help. While evidence from Canada's municipal consolidations indicates cost of delivering government services may be unaffected by regionalization (Douglas, 2005), a long-term benefit may be a stronger economy due to better coordination of business services for those sectors in which the region enjoys comparative advantage. A mixed model wherein many local services are delivered locally while economic development initiatives take place regionally may provide a more appropriate set of incentives.

Figure 1: Barry County, Michigan's comprehensive entrepreneurship support system. Image courtesy Erin Welker, Karen Health, and Ginger Hentz.



Policy Options

Entrepreneurship, broadly defined, enjoys remarkable support in public opinion polls. Academics who study economic development also view entrepreneurship favorably. However, these favorable perceptions do not match federal, state, and local actions to support businesses whose owners wish to grow, or strong programs to encourage more of those entering the workforce to chart a path towards growing businesses. The Small Business Administration's cut of \$10M from the budget for Small Business Development Centers in 2012 enjoyed bipartisan support. More attention to longer-term strategies to enhance the skills and opportunities of future growthineers could help policymakers willing to make appropriate investments sustain their organizations or gain reelection.

Much that is done on a local level is conditioned by foundations laid at higher levels of government. Higher levels of government can encourage place-based policies in conjunction with other national initiatives, such as funding work to produce, test and refine a model K-12 curriculum that integrates business principles across a wide array of subjects.

States could adopt and modify this curriculum in their pursuit of competency in core subjects while helping students gain intuition about basic business operations.

State and federal policy to encourage shared visions through regional collaboration in economic development initiatives such as targeting, or business information systems can facilitate local business formation. Such initiatives can also help form local attitudes and environments that produce and support more growthineers.

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OUTREACH AND EDUCATION BOOST ENTREPRENEURS IN INDIANA

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Keywords: Entrepreneurship; Education; Human capital; Outreach; Small business

A great deal of emphasis has been placed on the importance of entrepreneurs as a way to stimulate economic growth, as well as on the essential elements of successful new venture creation. Land grant universities and small business development centers throughout the United States routinely hold entrepreneurial workshops in an attempt to further educate entrepreneurs on factors considered to be key components of successful new business ventures.

The entrepreneurship literature recognizes three main factors of capital as essential elements of the entrepreneurial process: human, financial, and social. In an entrepreneurial context, human capital consists of the skills, experience, and education an entrepreneur brings to the venture. Financial capital includes the debt or equity funds an entrepreneur has available for venture startup and operations; and social capital encompasses family members, social and business networks, connections, etc. that may be helpful resources in new business creation.

Since human capital is the most accessible form of capital in terms of assistance strategies, Extension and other service providers who work directly to help startups and small businesses allocate a great deal of time and funds to develop this form of capital through skills training, record keeping, business planning, etc. Many studies have been conducted to determine the impact of human capital factors such as formal education, business planning, and industry and startup experience (for example see Bosma et al., 2004; Reynolds et al., 2004; Montgomery, Johnson and Faisal, 2005). However, earlier studies have not directly tied results to implications they may hold for future small business assistance strategies

We conducted two studies aimed at identifying the relative impact of human, financial and social capital on Indiana entrepreneurs who are approaching firm birth. We used data from a practitioner survey and an entrepreneur survey to identify the barriers to successful business startup. Results from the analyses provided information regarding the types of educational programming that would be most effective for entrepreneurs in the startup process and assisted us in deciding the best allocation of time and funds for entrepreneurial seminars and workshops.

The Entrepreneurial Process

Reynolds et al. (2002) indicate that three stages exist within the entrepreneurial process. The first stage includes the population of all individuals from which entrepreneurs are identified. During this stage, the first transition point occurs, which is named conception. Conception serves as a signal for when an individual decides to start a business. The second stage in this process has been deemed gestation, and has been found to have an average duration of approximately one year—although many entrepreneurs can take more than three years to start their venture. This stage consists of activities associated with the startup effort, many of which have to do with increasing entrepreneurial capital such as writing a business plan, going to educational workshops, networking and getting financing. The transition point of gestation is known as firm birth, which leads to the final stage of the process—infancy. Infancy is known to be the riskiest stage of the entrepreneurial process. For many firms this stage can last for approximately two years. At this stage it is imperative that the firm use the resources gained in the gestation period to its utmost advantage. From the infancy stage, there are three possible outcomes: firm growth, survival, or termination (Reynolds et al, 2002).

Many obstacles are present as firms transition through the entrepreneurial process. Most of the problems facing entrepreneurs originate from a lack of skill and/or information, insufficient financial backing, and inadequate social networks. A great deal of literature has been written that specifically addresses the issue of human capital and the unique challenge that it presents throughout the entrepreneurial process (for an extensive literature review see Peake

and Marshall, 2011). In particular, lack of human capital such as education and experience make finding and receiving financial backing difficult and decrease the amount of exposure to business networks needed to transition successfully to firm birth. Therefore, it appears that Extension and small business practitioners have a particular role to play in the gestation period where a critical amount of information and confidence have to be amassed in order for the entrepreneur to transition to firm birth.

Human Capital

Many studies have been conducted to determine the impact of human capital factors on entrepreneurship. In particular, a major focus has been placed on industry experience and general human capital in determining the success of entrepreneurs in starting a firm. The importance of education as a form of general human capital has been demonstrated in several studies. It has been found that higher education levels indicate an increased likelihood of starting a firm and demonstrate a significant impact on the performance of the new venture (Cooper, Gimeno-Gascon, and Woo, 1994; Robinson and Sexton, 1994; Bates, 1995; Reynolds 1997; Reynolds et al., 2002; Peake and Marshall, 2009). Although education as an indicator of human capital was shown to be relevant in startup participation, work experience has been inconclusive as a statistically significant factor in predicting participation in a startup or in predicting startup success (Davidsson and Honig, 2003; Peake and Marshall, 2011).

An argument can be made regarding the effectiveness of Extension and small business assistance programs in improving human capital. Chrisman, Gatewood, and Donlevy (2002) found that small business assistance programs were capable of addressing the needs of entrepreneurs. Most small business assistance programs can usually address two important needs as part of their programs: technical assistance and business startup experience. Often, as part of these programs and workshops, networking opportunities are provided between the entrepreneurs themselves and experts presenting at these programs.

Setting the Stage by Surveying Stakeholders

We conducted a food industry needs assessment for Indiana that was used as a foundation for the Food Entrepreneurship Program (FEP) (see Marshall, Bush, and Hayes, 2005). The objective of the assessment effort between the Agricultural Economics and Food Science Departments at Purdue University was to identify the needs of food entrepreneurs within the state of Indiana. To attain this objective, Extension Educators from 86 counties in Indiana were surveyed in 2002. Survey questions covered three subject areas: 1) resources that Purdue University Cooperative Extension might provide, 2) the number and type of inquiries made by food entrepreneurs to Extension Educators, and 3) food entrepreneurs' interests, and type of product they were planning to market. The number one need was help with food regulations followed by business startup, marketing, and product development.

To identify entrepreneurs in the gestation stage of the entrepreneurial process, surveys at two primary educational outlets for entrepreneurs were distributed: Purdue University affiliated entrepreneurship workshops and Small Business Development Center (SBDC) seminars across Indiana. Of the 231 Indiana entrepreneurs given the opportunity to participate in the study, 101 agreed to participate for the two year term (January 2004 – January 2006), which yielded a response rate of approximately 44%. The study was done over two years since the gestation stage can take up to two years. The survey requested information related to personal demographics, community characteristics, industry, human capital, financial capital, and social capital. A number of general conclusions emerged from the analysis. For example, not only did education and wealth play a role in firm birth but so did the act of trying to write a business plan and previous experience in the industry. However, we found that many nascent entrepreneurs did not have previous experience in the industry they wanted to enter.

We also found that focused workshops on particular themes were more helpful than general startup workshops (Peake and Marshall, 2009). For example, entrepreneurs who attended the specific food workshops that were offered by Purdue University were more likely to start their business than those who attended the SBDC's more generic startup workshops. Therefore, workshops that are industry related—for example goat breeding or organic farming—such as those offered by Extension and beginning farmer and rancher programs around the country would seem to be more conducive to actually starting a business than a more generic business startup program.

The entrepreneur survey and practitioner surveys led us to conclude that three main factors were inhibiting business startup: lack of industry experience or knowledge, lack of business planning, and lack of marketing knowledge. These were three factors that we could address through different types of educational programs.

Educational Programs for Entrepreneurs

Purdue University Cooperative Extension provides a number of impactful programs for entrepreneurs at all stages of the entrepreneurial process. This article focuses on three programs that are different in terms of audience and outcomes and deal with entrepreneurs in the gestation stage. First is the Food Entrepreneurship Program which is focused on food entrepreneurs and developed using information from the practitioner survey. Second is the New Ventures Team's *INVenture* program, which helps entrepreneurs in the business planning stage. Third is the Business Beginnings Program that is dedicated to Latino nascent entrepreneurs. The last two programs were developed using information gained about the gestation stage from the entrepreneur survey.

Food Entrepreneurship Program (FEP)

This interdisciplinary entrepreneurship program is designed to help potential food entrepreneurs make more informed business decisions on the viability of their ventures. The FEP provides educational materials and technical assistance to food entrepreneurs. The Agricultural Economics Department coordinates and provides the educational materials and technical assistance related to business management. The Food Science Department provides the educational materials and technical assistance related to food processing. A core output of the FEP is an annual workshop titled, *Introduction to Starting a Specialty Food Business in Indiana*. This one-day workshop features several experts from different state agencies such as the Indiana State Board of Health and university departments who discuss important topics related to starting a food business. Approximately 20% of the participants continue in the process of starting their food business.

Food entrepreneurs generally need technical assistance in product development, recipe scale-up, and marketing. Workshop attendees have continued to pursue product development, business startup, and marketing assistance from the FEP. Food entrepreneurs are required to take the *Introduction to Starting a Specialty Food Business* workshop before more one-on-one resources are provided, in order to establish that entrepreneurs have some basic understanding of what it takes to start a food business.

New Ventures for Food and Agribusiness for Indiana

New Ventures is a team of Purdue Extension specialists and educators whose mission it is to increase the viability and sustainability of small businesses in Indiana. The programmatic vision for the team is to provide research-based curricular material and training to entrepreneurs and other small business development practitioners. *New Ventures* merged with the Agricultural Innovation and Commercialization Center (AICC) to develop business management tools for entrepreneurs. A key output of the merger was *INVenture*, a business planning software, which is available for use free on-line at www.agecon.purdue.edu/planner. *INVenture* helps entrepreneurs think through the business planning process in the course of six interactive stages.

Why the emphasis on business planning? Based on results from the entrepreneur survey, approximately 30% of respondents had participated in a business startup, while the remaining 70% were still working to get their idea off the ground. Nearly two-thirds of respondents indicated that they had attempted to create a business plan; however, only one-quarter of those individuals indicating that they had attempted to create a business plan had actually completed it. Just attempting to write a business plan increased the chances of firm birth. Therefore, an effort was made to make the business planning process as straightforward as possible by creating an interactive software program that can be accessed from anywhere and tracks the entrepreneur's progress. As of July 2011, the program had over 8,000 registered users.

Business Beginnings

In collaboration with two Indianapolis based entrepreneurship programs, Business Owners Initiative and The Central Indiana Women's Center, a fee-based short course titled, "Business Beginnings", was developed for delivery in Spanish to the Latino community. Reaching under-represented groups is a new and important focus for Extension. This course provides much needed business management education to a new and ever growing Extension audience.

We experimented with recruitment methods such as brochures in public libraries and churches, talking to business owners in Latino neighborhoods, and ads in Spanish language papers. The most successful recruitment tool was using an Indianapolis Spanish language radio station to promote the course on a popular evening program. We also experimented with the times and offerings of this course to accommodate already working adults. This course began as a 20-hour course conducted on four Saturdays. This proved to be too much information in one day. The course finally settled on 18 hours taught on Tuesdays and Thursdays from 6-9pm for three weeks.

The course focuses on starting and managing a small business in Indiana and includes content such as business planning, financial management, organizational structure, and marketing. More importantly, the course also focuses

on the different types of regulations and documentation that an entrepreneur must navigate to start a business in Indiana. Minority and immigrant entrepreneurs specifically find this a high barrier to entry. As a result of the course, participants were able to identify key financial, marketing, and regulatory concepts and issues. Approximately 20% of the attendees have gone on to start a small business. Of those participants who already had a business, 100% said the course will help them manage their business better. Thirty percent of the participants decided to delay the start of their new venture to get better prepared. Many of those who needed more time cited needing to improve their language skills as a reason for the delay.

Concluding Remarks

The entrepreneur survey and practitioner surveys led to the conclusion that lack of industry experience or knowledge, lack of business planning, and lack of marketing knowledge were inhibiting business startup. After almost a decade working with entrepreneurs, these still appear to be key barriers to success. However, these are barriers that can be mitigated by creating and delivering educational and technical assistance programs.

The impact of many entrepreneurship programs is measured by the number of business startups and not necessarily the human capital gained through the programs. However, the number of entrepreneurs who held back or decided not to start the business is also an important and measureable impact. For example, roughly 25% of those attending the FEP workshop decided not to pursue their initial business venture after learning the details of starting a food business. This means that more viable firms are being established and individuals who might otherwise start a business are perhaps saving thousands of dollars. Nascent entrepreneurs will take the human *and* social capital gained at entrepreneurship programs and use it in different ways. Some will start a business within a year, while others will take three years and still others will not start at all. So a question for educators to think about is whether the real impact of these programs is the number of businesses started or the human capital gained from programs that may or may not result in a viable business.

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TARGETING INDUSTRIAL GAPS AND DISCONNECTS FOR COMMUNITY ECONOMIC DEVELOPMENT

Steven Deller

JEL Classifications: R11, R15

Keywords: Clusters, Community Development, Outreach Education

While some rural communities are still of a “shoot anything that flies, claim anything that lands” mindset, others are looking to be more strategic in how they approach community economic development. Part of the movement toward more strategic thinking has spurred the adoption of cluster development strategies in many states and larger communities. Although the notion of cluster development has a rich and long tradition, it was the highly visible work of Harvard business economist Michael Porter (1990, 1996, 2000, and 2003) that inspired the current interest.

While there are as many definitions of clusters as there are researchers studying them, there are several common elements. Industrial clusters are geographic concentrations of interconnected companies: specialized suppliers, service providers, and associated institutions in a particular field that compete but also cooperate (Deller, 2009; Fesher and Sweeney, 2002; McCann, 2002; Steiner, 2002). A cluster is a geographically bounded concentration of independent businesses with active channels for business transactions, dialogue, and communications that collectively shares common opportunities and threats.

Practitioners generally limit their thinking on clusters to specialized input suppliers but businesses can also be related by specialized labor skills, technologies, and professional or technical development opportunities in addition to common input suppliers. Institutions that can be vital to successful clusters can be trade associations, economic development organizations that facilitate networking, educational opportunities such as those provided by universities and technical colleges, as well as local governments. Local governments can help facilitate networking and ensure that quality services are provided at the lowest possible cost. The emphasis is on dynamic improvement and efficiencies rather than market scale.

Clusters are critical to competition because modern competition depends upon productivity and innovation. These depend on *how* companies compete and not on the particular fields in which they compete. Competition is employing sophisticated methods, or using advanced technology, or offering unique products and services. Clusters can affect competition in three ways: increasing the productivity of companies within the area, increasing competition by driving the direction and pace of innovation which underpins future productivity growth, and affecting competition by stimulating the formation of new businesses which expand and strengthen the cluster itself.

While the promotion of clusters is multidimensional, one critical starting point is the networking of input suppliers. Firms that form the core of the economic cluster can either purchase input supplies from local firms or import from firms outside the local community. In Porter’s classic wine production example, input suppliers include not only producers of grapes but also all of the inputs used in grape production along with supplies required in the wine making process itself. The higher the share of those inputs that can be supplied locally, the stronger and more vibrant the foundations for the cluster. One strategy that communities can pursue is to target key input suppliers for promotion and development.

At the local level the notion of targeting “gaps” and “disconnects” in the local cluster supply chain may be a viable strategy for communities. Since firms can buy locally or import into the region, examining industry import data can identify those industries that are importing particularly large dollar values. Firms that comprise this particular industry may import rather than buy locally for two reasons. First, there is no regional industry that is able to supply the required inputs. Here there is a “gap” in the regional economy, and that industry *may be* targeted for further consideration. If such a local input supply industry does exist but is not utilized, it is a “disconnect” within the regional economy. Again, the industries that appear to be “disconnected” *may be* targeted sets of industries to focus attention on for further action. The idea here is that the region is looking to build stronger relationships within regional clusters by strengthening inter-industry linkages. This is accomplished through the strategy of import substitution.

There could be several reasons for a “disconnect.” The first is a lack of knowledge between the purchasing and selling firms. Here the implication for public policy is clear: implement strategies to build bridges across firms within the respective industries, for example, through networking such as trade shows or chamber of commerce workshops. The second is that the region of analysis is too small in a spatial sense, and from the importing industries’ perspective, they are purchasing locally. For example, an industry in Milwaukee may be importing large levels of a particular input from the Chicago region. From a Milwaukee and/or Wisconsin perspective, this level of importing may not appear to be “optimal,” but from the industrial perspective the relevant region does not stop or start at the Wisconsin-Illinois state line. By further exploring and thinking about where inputs, as well as exports, are flowing, a larger regional approach may become apparent to local policymakers and practitioners. Third, it may be that there are good explanations as to why disconnects exist. These may range from the custom nature of required inputs to the inability to come to contractual terms.

For example, in a study of St. Croix County, Wisconsin, Janke and Deller (2004) discovered that local hospitals were importing a large volume of business management services despite the presence of several local management consulting firms. On further examination by a team of local economic development practitioners, amounting to one phone call to the administrator of the largest hospital in the county, it was determined that the consulting services were highly specialized and a national firm located in the Twin Cities of Minnesota provided nearly all Wisconsin hospitals with this particular service.

There are also several reasons why there may be a significant “gap” in the local supply chain. The size of the gap may not be sufficient to attract one or more firms, encourage a local firm to expand, or encourage entrepreneurial activity to fill the gap. Or it may be that the supplying industry is one that the regional community does not desire. In early stages of the St. Croix study mentioned above, the investigators uncovered a large and vibrant plastics manufacturing industry, which was composed of numerous smaller firms. This industry was importing a significant volume of plastic resins, the basic input into their production processes. A member of the research team familiar with the industry clearly stated that the plastic resins industry was tightly linked to the petroleum refining industry in the southern states and, in his words, “it could stay there.”

The key to the approach outlined here opens the door to providing not only rigorous economic analysis, but also a mechanism to expand the thinking of local policymakers and practitioners. By using input-output analysis (e.g., IMPLAN), potential clusters can be identified. Then a means to strengthen those clusters can be created. By thinking in terms of import substitution, local policymakers and practitioners can move beyond simple recruitment as in the first wave of economic development and move to include second-wave strategies that focus on existing businesses and entrepreneurship. By exploring import and export flows, the concept of the relevant regional structure and the need to think regionally and act in cooperative arrangements can be better understood.

But, as eloquently argued by Buss (1999) from a broader perspective and by Hughes (2009) from an input-output perspective, there are inherent problems with the approach outlined here. For example, the overwhelming volume of detailed data can give the illusion of accuracy and can lead to a situation of “paralysis by analysis” where the community drowns in data and cannot move forward. When used as an educational tool to help policymakers and practitioners to think more broadly and deeply about economic development, however, significant changes can be effected through this kind of analysis.

The Wisconsin Approach

The “Wisconsin Approach” to targeting regional economic development through import substitution proceeds in a multistep process. It is important to keep in mind that the Wisconsin Approach is designed to be a university-based outreach educational program as much as it is a technical analysis program. Two points are critical to note. First, the approach is treated as a team effort between members of the community and university faculty and staff. In Wisconsin, the Cooperative Extension community resource development educator is a key player. Thus strategic research decisions, such as on which industries to focus, are made not by university faculty and staff but rather by the community research team. The research team takes ownership of the process by making decisions at key points in the data analysis through reviewing the data analysis and determining filters that provide direction to the analysis. Second, the key criteria on which to evaluate industries, such as absolute size of the industry by specific metric, such as industry sales per employee or wages and salary income per employee or fastest growing sectors based on the trend analysis, are determined by the research team. By allowing the research team to determine the selection criteria, community values are more closely reflected.

The analysis is composed of three parts. The first part of the analysis uses data from the Bureau of Economic Analysis Regional Economic Information System (BEA-REIS) and focuses on trends where the local economy, or county, is compared to the state and U.S. Trends in population, income, and employment and earnings by industry are shared with the research team. Discussions about relative growth levels of the study area provide an informal “first screen” in terms of the targeting exercise. In essence, drawing attention to and discussing relative growth rates and notions of stability opens the door to a better understanding of which sectors, broadly defined are growth sectors

from a larger macroeconomic perspective. This analysis allows the discussion of the transition from goods to a services-producing economy, instability of goods-producing sectors, and shifts in sources of income. This discussion also allows for an initial discussion about the overall performance of the regional economy to see if the data support or refute local perceptions.

The second part of the analysis uses detailed IMPLAN data to focus attention on which industries dominate the local economy. The idea here is not only to identify the largest industries but also to introduce and discuss the various ways in which the economy can be measured, ranging from industry sales to income and employment. For the research team, rankings of all sectors from largest to smallest are provided for discussion purposes. As part of this step of the analysis, location quotients are introduced into the discussion which helps identify the relative strengths of different industries within the local economy and raises the notion of imports and exports. Based on the decision of the research team, this list of metrics can be narrowed and the “threshold” for reporting to the larger community is determined.

At this step in the discussion, the notion of imports as well as exports is expanded upon through simply reporting the exports by industry, ranked from highest to lowest as calculated by IMPLAN. At this point the research team has two directions to consider: (1) focus attention on the potential clusters identified in the prior analysis and/or (2) focus attention on products that are imported into the region in large quantities.

For example, if the community members of the research team identify food processing as a strong industry that is, growing and providing well-paying jobs, specifically a potential cluster, then the team can use the input expenditure profile provided by IMPLAN to identify imported inputs. By cross-checking with output or supply, one can determine if the imports are due to a “gap” or a “disconnect”. If local supply is low or does not exist a “gap” in the local economy is identified. On the other hand, if local supply is sufficiently large than a “disconnect” is present. If a “gap” is present this may be an industry that should be targeted via recruitment, encouragement of existing business expansion, or new business formation through entrepreneurial activity.

In an analysis of the Fox Valley region of Wisconsin, which is south of Green Bay, one “disconnect” identified was a large flow of raw milk production being shipped out of the region, while at the same time cheese producers were importing large volumes of milk (Muench and Deller, 2001). A true dairy cluster would address that disconnect. The same analysis identified a large “gap” in engineering services and, because of the pay scale in engineering, the community research team elected to focus on this industry. As a result of this analysis the Fox Valley Technical College is partnering with the University of Wisconsin to build a local engineering curriculum.

Local knowledge brought to the research team is vital to helping think through what is a viable import substitution strategy. As noted above there are potentially dozens of reasons why a “gap” or a “disconnect” exists in the local supply chain, and local knowledge can help to identify those reasons. The ultimate goal of the Wisconsin Approach is to not only help identify potential clusters and industries to target via an import substitution strategy, but also to expand the knowledge and understanding of the local economy by the community members of the research team.

Next Steps

The notion of clusters has reenergized many community economic development efforts and has helped move local economic development policy forward on several fronts. First, the discussion of clusters and regional comparative advantage has broadened the thinking of local policymakers to move beyond traditional recruitment strategies that formed the first wave of economic development strategies. Indeed, by looking within the region to identify clusters, interest in building on existing businesses, or second-wave thinking, has been renewed by local policy makers. Although economic development practitioners have long embraced a blending of first- and second-wave development strategies, it has been a tougher sell for politicians to see the value. Second, a focus on clusters makes it clear that individual communities do not exist in isolation and that regional perspectives are required. This has resulted in a number of regional public-private partnerships, which some have argued represent the third wave of development strategies.

The Wisconsin Approach outlined here refocuses the notion of targeting regional economic development toward the idea of import substitution. Using an educational approach, as opposed to simply providing a technical analysis, the framework is used to structure a broader discussion about regional economic structure. The research team, comprised of university researchers and extension educators, but more importantly, members of the community, is an integral part of the study. Key decisions about which industries to focus attention on and how to proceed are made by the community members of the research team. This process both elevates the team’s awareness of the regional economy and empowers them to make more informed decisions about economic development strategies.

The Wisconsin Approach does presume that there are certain levels of social and institutional capital within the region of interest. In other words, the region must be prepared to undertake such an effort. Key players within the region

must be willing and able to be part of the research team. The approach presumes that the community has an active chamber of commerce, economic development corporation, and local government that are proactive in community efforts. If leaders of local institutions expect “the answer” to be handed to them in the form of a consulting report, then they are not ready to undertake the analysis outlined here. Our experience with the Wisconsin Approach is that the data analysis ends up taking a backseat to in-depth and focused discussions about the regional economy.

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The article “Community Business Matching Model Aids Local Decisionmakers and Developers” is temporarily unavailable.

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RURAL AREAS LAG BEHIND IN KEY WORKFORCE SKILLS

Todd Gabe, Kevin Stolarick, and Jaison R. Abel

JEL Classifications: R12, J24

Keywords: Agglomeration, Occupational Requirements, O*Net Data, Rural Development, Workforce Skills

Structural changes occurring in the U.S. economy—including the several decades' long transition from a manufacturing and goods-based orientation to an economy that is driven by creativity, knowledge, and the provision of high-value services—have increased the economic importance of human capital and workforce skills. In the old economy, some rural areas could successfully compete for business activity by providing relatively affordable land, compared to urban centers, and inexpensive labor with a skill set tailored to making and moving goods. Still many other rural areas built an economy around proximity to key natural resources and recreational amenities. Very few places outside of metropolitan areas, however, have economies that are currently driven by innovation and technology.

The so-called “new economy” presents challenges to rural policymakers in that the process of innovation and technology development, and the provision of high-value services benefit greatly from a large agglomeration of customers and high human capital workers, a combination that is rarely found outside of cities. Although advances in information technology and electronic communications have dramatically reduced the costs of moving information, they have not—perhaps contrary to expectations—diminished the importance of face-to-face contact that is facilitated by dense urban markets (Gaspar and Glaeser, 1998; Storper and Venables, 2004). Taken together, these forces suggest that substantial differences exist between rural and urban areas in terms of the types of skills available in the workforce, and these differences are likely to have measurable effects on indicators of regional growth and development. The purpose of this article is to examine differences in the skills of rural areas compared to the overall U.S. economy, and then to describe how these differences in skill might influence rural economic vitality and employment growth prospects going forward.

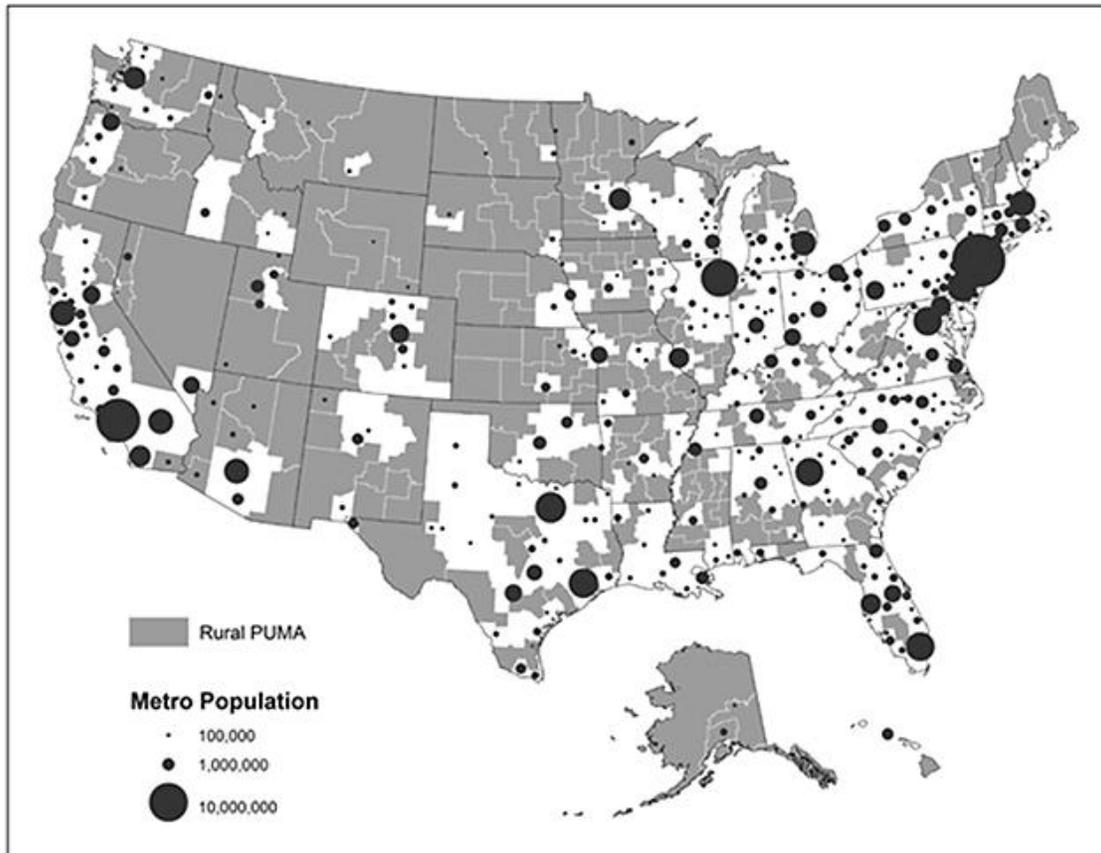
Workforce Skills in U.S Rural Areas

Our general approach is to use the occupations present in a region to determine the types of skills that are available in the workforce. Focusing on occupations is key because they provide a better indication of the exact skills used on the job than educational attainment, which simply tells us how many years of schooling a person has completed. Perhaps the best known example of an occupational-based approach is Richard Florida's (2002) empirical method of measuring the Creative Economy, which is made-up of a collection of occupations—for example, artists, scientists, and educators—that are similar in their high demands for on-the-job creativity. Our method is similar, but we use a cluster analysis technique that allows us to form groups of occupations that are similar based on the importance of a wide range of skills. This approach requires detailed occupational employment data for regions of the United States that are classified as rural areas.

The first part of our analysis involves identifying rural areas of the United States based on their proximity to a central city and population density. This is the same general approach used in other rural-urban classification systems, such as Beale Codes and the USDA's rural-urban continuum codes that assign a score on a scale of 1 to 9 to all U.S. counties. In our analysis, we are unable to use the existing rural-urban codes because the occupation-level data needed to examine workforce skills is not readily available for counties, but rather a different unit of geography referred to as a “PUMA” (Public Use Microdata Area). Defined by the U.S. Census Bureau, PUMAs range in geographic scope from smaller than a county to areas that cover multiple counties.

All of the U.S. PUMAs were categorized based on their distance to a Census-defined central city and population density. We define as “rural” the PUMAs with the greatest distances to a central city and the lowest population densities. In our analysis, we arrived at 204 “place-of-work” PUMAs—about 17% of the areas considered—that fall in both the bottom 25% in terms of population density and the top 25% in terms of distance from a central city. Figure 1 is a map of these rural areas, which we compare to the overall U.S. economy in the analysis that follows, as well as the locations of U.S. metropolitan areas. The map reveals large sections of rural PUMAs in the western half of the United States, with many of the most-populated metropolitan areas located east of the Mississippi River and on both coasts.

Figure 1: Map of Rural PUMAs and U.S. Metropolitan Areas



The second part of the analysis involves coming up with a skills-based profile of all occupations and regions of the United States (Feser, 2003). To do this, we started with occupational requirements in 35 specific skill areas, which are grouped in Table 1 into the broad categories of content, process, social, complex problem solving, technical, system, and resource management. We use occupation-level information from the U.S. Department of Labor’s Occupational Information Network (O*NET) on the importance and level of skill required in these 35 areas along with a cluster analysis technique that is used to join together jobs with similar skill requirements to reduce 444 narrowly-defined occupations into 11 skills-based clusters, presented in Table 2.

The eleven clusters shown in Table 2 are listed in order from highest to lowest skills requirements, based on the 35 dimensions of skill. The first cluster, which we termed “Engineers” due to the high levels of complex problem solving, system, process, and content skills that are required, includes occupations such as chemical engineers, computer programmers, and database administrators. The cluster that we labeled as “Executives,” made up of occupations such as chief executives, financial managers, and lawyers, has an overall skills profile that falls only slightly below that of Engineers, with particularly high requirements in the dimensions of social, resource management, system, and

Table 1**Workforce Skills Covered in the O*NET Database**

Basic Skills	Cross-Functional Skills		
	Content	Social Skills	Technical Skills
Reading Comprehension	Social Perceptiveness	Operations Analysis	Judgement and Decision Making
Active Listening	Coordination	Technology Design	Systems Analysis
Writing	Persuasion	Equipment Selection	System Evaluation
Speaking	Negotiation	Installation	Resource Management Skills
Mathematics	Instructing	Programming	Time Management
Science	Service Orientation	Operation Monitoring	Mgmt. of Financial Resources
Processes	Complex Problem Solving Skills	Operation and Control	Mgmt. of Material Resources
Critical Thinking	Complex Problem Solving	Equipment and Maintenance	Mgmt. of Personnel Resources
Active Learning		Troubleshooting	
Learning Strategies		Repairing	
Monitoring		Quality Control Analysis	

Source: U.S. Department of Labor, Occupational Information Network (O*NET).

process skills. The cluster of “Laborers,” shown at the bottom of Table 2, includes occupations such as dishwashers, taxi drivers, and laundry workers, which have very low requirements in almost all of the dimensions of skill.

The next step of our analysis involves using the clusters that we developed to come up with a skills profile for areas of the United States that we classified as rural. The figures shown in Table 3 are so-called location quotients that are measured as the cluster’s average percentage of workforce employment in the rural PUMAs divided by the share of the total U.S. workforce in the same skills-based cluster. PUMA workforce information is from the 2005-09, 5-year estimates of the American Community Survey conducted by the U.S. Census Bureau. Values greater than 1.0 indicate that the skills-based cluster is over-represented in rural areas—in other words, rural areas “specialize” in a particular skills cluster—while values less than 1.0 suggest that the cluster is under-represented in rural areas compared to the United States as a whole.

These figures reveal some striking differences between the skills profile of rural areas and the overall U.S. economy. First, rural areas tend to specialize in the skills-based clusters of Machinists and Makers, which include “hands-on” occupations in the construction trades, production and assembly, and maintenance and repair. These clusters are characterized by relatively low skills requirements—for example, ranked 7th and 9th, respectively, out of the 11 clusters. Looking at the clusters with the highest skills requirements, we see that rural areas are under-represented in the areas of Engineers and Executives, with location quotients of 0.68 and 0.84. This means that the percentages of the rural workforce in these clusters are well below the corresponding national averages. Rural areas also tend to be under-represented in the clusters of Analysts, Scientists, and Technicians. The share of individuals in the rural workforce is similar to the national

average—this means that location quotients are close to 1.0—in the skills-based clusters of Managers, Servers, Assistants, and Laborers.

Will a Lack of Skilled Workers Hold Back U.S. Rural Areas?

From the location quotients presented in Table 3, we can gain insight about the skills profile of U.S. rural areas. First, as noted above, rural areas have relatively low employment shares, compared to the U.S. economy, in the highest skilled clusters of Engineers and Executives, and—to a lesser extent—rural areas lag behind the nation as a whole in the presence of Scientists. The highest skill cluster with a location quotient above 1.0 in rural areas is Managers, which we find to be fairly evenly spread across all types of regions. The next highest skill cluster that is over-represented in rural areas is Machinists. This cluster is characterized by very high technical skills, although it rates very low in terms of social, resource management, and process skills. Rural areas also specialize in the skills-based clusters of Makers and Laborers, which have among the lowest overall skills requirements of the 11 clusters. Taken

Table 2**Percentage of U.S. Workforce by Skills-Based Cluster**

Cluster	Total Occupations	% of U.S. Workforce	Representative Occupations
Engineers	22	3.6	Chemical engineer, computer programmer, database administrator
Executives	24	8.3	Chief executives, financial managers, education administrators, lawyers
Scientists	42	8.1	Biologists, psychologists, economists, physicians and surgeons
Managers	21	7.8	Funeral directors, transportation managers, purchasing agents, sales managers
Technicians	29	2.5	Chemical technician, drafter, clinical lab technologist, explosives worker
Analysts	39	11.5	Budget analyst, market researcher, cost estimator, technical writer
Machinists	56	5.2	Aircraft mechanic, electrician, security system installer
Servers	56	17.7	Salesperson, dental assistant, receptionist, payroll clerk, cargo agent
Makers	71	12.9	Carpenter, tool and die maker, engine assembler, machine feeder
Assistants	42	10.0	Baggage porter, teacher assistant, counter clerk, home care aide
Laborers	42	12.3	Dishwasher, roofer, taxi driver, laundry worker

Source: 2005-09, 5-Year Sample of the U.S. Census Bureau's American Community Survey.

together, these results indicate that the rural workforce has a high concentration of Machinists—possessing high technical skills—a slightly higher share of Managers than the U.S. economy as a whole, and a specialization in occupations with very low skills requirements.

The skills profile of rural areas has important implications related to the present vitality and future growth prospects for these regions. In the present, the types of skills available in the workforce have a very strong association with earnings. Figure 2 is a scatter plot showing the relationship between average earnings in the cluster, using data from the 2005-09, 5-year U.S. Census American Community Survey, and its average skills index value that is based on the seven broad dimensions of skill shown in Table 1. The scatter plot reveals a strong correlation between skills and earnings—a finding uncovered in numerous academic studies (Florida, et al., 2012; Abel and Gabe, 2011). This means that the types of skills-based clusters that are over-represented and under-represented in rural areas explain, at least in part, the rural-urban wage gap that has persisted for years.

Looking into the future, we can see that—based on the types of occupations and corresponding skills available in the workforce—rural areas will likely experience lower employment growth rates than the overall U.S. economy. To arrive at this conclusion, we used the most current ten-year occupational employment growth projections from the U.S. Bureau of Labor Statistics and matched individual occupations to their appropriate skills-based cluster. Then, with the employment growth projections, we were able to estimate ten-year projected growth rates and net changes in employment. The skills-based clusters of Scientists and Engineers are expected to be the fastest growing occupational clusters over the ten-year period, followed by Analysts, Servers, and Technicians. The clusters with the lowest projected growth rates are Laborers, Makers, and Machinists. Rural areas specialize in all three of these skills-based clusters with the slowest expected growth rates, and they are under-represented in the occupational groups that are expected to grow the fastest.

In the cases of the skills-based clusters of Scientists, Engineers, and Analysts, which are expected to grow the fastest, the agglomeration benefits accruing to places with a high initial specialization of employment may be hard for rural areas and other places that are under-represented in these clusters to overcome. In other words, the employment growth projected to occur in the clusters of Scientists, Engineers, and Analysts will likely occur in and around places with a high initial specialization. The next tier of clusters in terms of projected employment growth may be a more realistic source of job creation in rural areas. The clusters of Servers and Assistants have rural employment shares that are more similar to the United States as a whole. These skills-based clusters are expected to experience double-digit employment growth rates over a ten year period—much higher than the expected growth of clusters that are over-represented in rural areas.

Final Thoughts

The purpose of this article was to provide a broad-brush assessment of the types of skills that are present in the rural workforce, and then to examine the prospects for rural employment change based on the projected growth of skills-based clusters nationally. Our analysis shows that rural areas of the United States

Table 3**Loan Loss Reserves and Nonaccrual Loans for Agricultural Lenders (in millions)**

Cluster	Measure of Rural Specialization (Location Quotients)	Expected Growth Rate Nationally
Engineers	0.68	17.7%
Executives	0.84	10.0%
Scientists	0.9	19.5%
Managers	1.03	4.9%
Technicians	0.92	12.0%
Analysts	0.87	14.4%
Machinists	1.19	4.7%
Servers	0.96	12.1%
Makers	1.16	4.7%
Assistants	1	10.4%
Laborers	1.04	4.1%

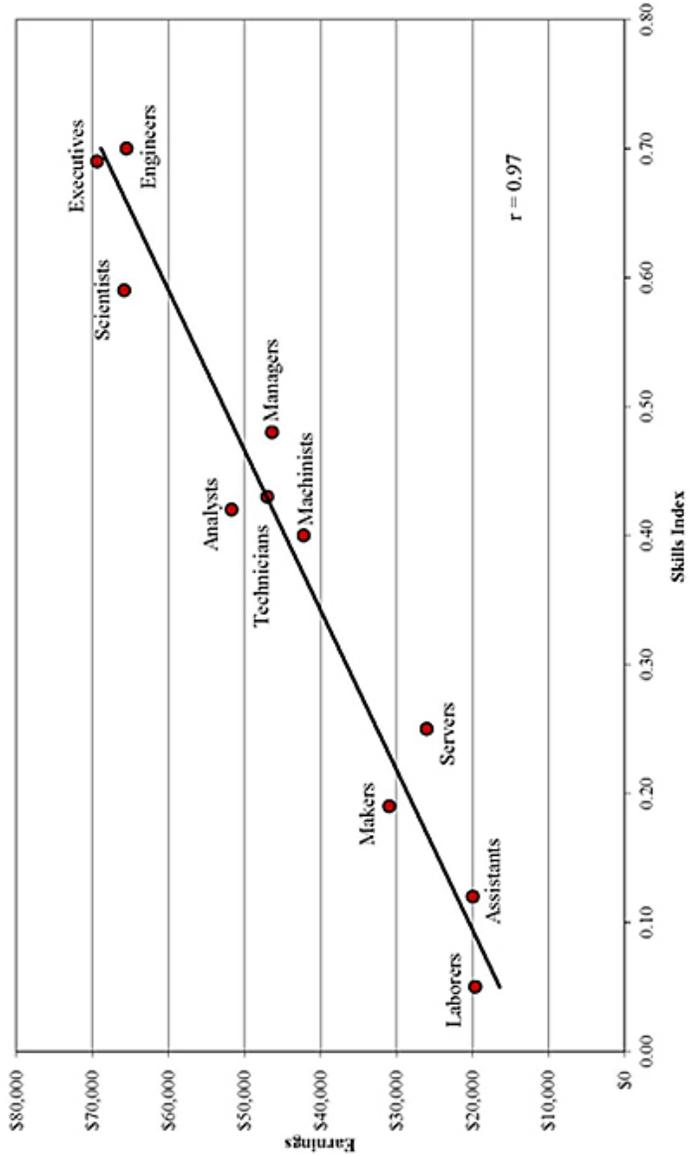
Sources: 2005-09, 5-Year Sample of the U.S. Census Bureau's American Community Survey; 2008-18 U.S. Occupational Employment Projections from the U.S. Bureau of Labor Statistics.

face some serious challenges in the new economy considering their tendency to specialize in low-skilled jobs, and these occupations are expected to experience slow employment growth in the future. The highest-skilled occupations, which are also those expected to grow the fastest nationally, are vastly under-represented in rural areas. The skills-based clusters with a combination of solid—but not spectacular—growth prospects and a reasonably strong initial presence in rural areas are the clusters of medium- and low-skilled jobs such as Servers and Assistants. These occupational groups, which tend to be available in almost equal proportions just about everywhere, might be a source of future employment growth in rural areas.

Nonetheless, it is important to recognize that our analysis provides a “view from 30,000 feet” of the skills profile and employment growth prospects of rural areas. Rural areas are diverse and, just as it would be inaccurate to claim that all cities will thrive in the new economy, it would be equally misleading to assert that all rural areas will struggle. Some rural areas will be able to prosper in the future despite an under-representation of new economy occupations and industries, while others will benefit from an initial specialization of high-skilled workers. Although our study identifies some real challenges facing rural policymakers in promoting economic development, the analysis does not point to a one-size-fits-all policy that rural areas can use to increase workforce skills. The types of policies most likely to bear fruit will differ across rural areas, depending on their location, knowledge-based assets—for example, presence of a university or community college—and workforce profile. Our study illustrates some interesting high-level trends

in the location of high- and low-skilled occupations, but this type of analysis should be used as a complement to, not a substitute for, more detailed regional-level research that can illustrate the keys to growth for individual communities.

Figure 2: Skills and Earnings



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TRANSFORMING REGIONS THROUGH STRATEGIC DOING

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Regional communities are made up of thousands, even millions of people, without an official hierarchy and with no single individual in charge. The establishment of a change agenda for such an entity and management of an action plan to implement the change are formidable challenges even for highly skilled organizational development experts. Virtually all individuals, however, belong to just such an organization, because they live and work in a regional community. According to the Brookings Institution (2011), 83% of the U.S. population lives in metropolitan regions, 85% of jobs are based there, and these regions represent the nation's hubs for economic growth. Because they are home to such high concentrations of population and economic activity, it is important to understand how regions function. This article examines a new model for regional transformation, Strategic Doing, and offers North Central Indiana as a case study.

A New Framework for Regional Transformation

Perhaps one of the best chances for regions to transform their economies is through innovation (Council on Competitiveness, 2005), and most need help to develop and guide these innovations strategically. Conventional strategic planning, which is mechanistic and linear, does not work well in this context. The process is too rigid, too costly, and too tightly tied to a "command-and-control" mindset to be effective in complex environments that are constantly shifting. Strategic Doing (Purdue Center for Regional Development, 2011) enables people organized in loosely joined open networks, to think, behave, and act strategically. Instead of developing broad visions, they pursue measurable strategic outcomes. Instead of focusing on problems and deficits, they define new opportunities by connecting their assets, both economic assets in the community and their own assets—experience, expertise, passions, and personal networks. Instead of looking for a visionary leader, they recognize that leadership in open networks is a shared responsibility. Strategic Doing is simple but not easy. It asks four basic questions: (1) What could individuals do together, (2) What should they do together, (3) What will they do together, and (4) How will they continue to learn together.

It takes time for members of communities to learn these new approaches. Old habits, born in a silo mentality, fade as civic leaders practice the common-sense disciplines of collaboration. As civic leaders learn how to cross old boundaries, they come to understand the power of "linking and leveraging" their assets to define new opportunities. Eventually innovations emerge that transform entire regions. Civic leaders focus their energies on initiatives that are replicable, scalable and sustainable. In Strategic Doing, metrics take on new importance. In order to "learn by doing", civic leaders use metrics to measure progress and figure out what works. They focus more on facts, and less on politics and personalities. Perhaps most importantly, Strategic Doing emphasizes the importance of civility as a strategic asset. Without civility, people cannot perform the complex thinking needed to innovate.

Transformation in North Central Indiana

One of the first large-scale implementations of Strategic Doing occurred in North Central Indiana where civic leaders were launching a four-year regional transformation initiative. Like many other communities, the cities of Kokomo and Greater Lafayette experienced steady growth during the industrial boom occurring after World War II and like many of these same communities, the restructuring that has occurred in the manufacturing sector over the last 25-30 years has caused tremendous social and economic distress, especially in auto-dependent Kokomo. The condition of these and other Midwestern cities is documented in *Caught in the Middle: America's Heartland in the Age of Globalism* (Longworth, 2007) describing communities in which family farms, steel mills, and auto plants have virtually disappeared; and referring to these types of regions as places in which "reinvention is yet to come" (pg. 44).

In 2004 new data on commuting and trade patterns indicated that a regional strategy for economic growth, one that encompassed both Greater Lafayette and Kokomo, could make sense. In 2005, Civic leaders from both communities as well as those from nearby smaller cities and towns came together in an attempt to explore how their communities could function as a region.

As this understanding of regional interdependency evolved, an opportunity emerged to respond to a federal request for applications from the U.S. Department of Labor's Employment and Training Administration (DOLETA). Staff from the Purdue Center for Regional Development (PCRD) helped to craft a proposal and the region was funded in the first round of DOLETA's Workforce Innovations in Regional Economic Development (WIRED) initiative (United States Department of Labor, 2010). PCRD was asked to serve as both the fiscal and programmatic lead for the region.

Unlike most federal grant proposals, the North Central Indiana proposal did not detail how all the funds would be spent. Instead, it outlined a few broad areas of strategy and then described a mechanism for providing incentives for collaboration to the region's institutions and organizations; these incentives were targeted towards developing new ideas for regional transformation. Much of the funding was set aside in an Opportunity Fund from which these civic investments were made. Strategic Doing provided the framework for the partners to come together in a series of civic forums to consider the four simple questions listed earlier. The PCRD developed a phased investment mechanism and a streamlined contracting process to quickly provide the new partnerships with the resources needed to move into action.

Participants in these kinds of regional economic development efforts are often tempted to put too many eggs in one basket in the hope that one or two large-scale initiatives will lead to economic transformation. The North Central Indiana effort took a "swarm innovation" approach instead, launching dozens of smaller-scale efforts all focused on moving the region forward in one of the previously agreed upon strategic directions. Over the course of the four-year WIRED effort, over 40 partners worked together to launch 60 different initiatives. Over 80% of those initiatives continue today, long after the federal funding was exhausted.

Each of the 60 different initiatives represents a compelling story. Two of these are provided here:

- *KokomoInnovates*– When Kokomo-based Delphi Electronics announced a massive layoff that included 600 engineers a solution was quickly developed and funded to assist some of those engineers to become entrepreneurs. Several new businesses emerged and new jobs were added to the regional economy. The following link is to a YouTube video that tells more of that story. <http://www.youtube.com/watch?v=vI9LpKVQEs4>
- *Guitar Workshop*– In one of the WIRED civic forums a few individuals had the idea of exposing young people to advanced manufacturing. The result was a summer workshop in which students learned and applied advanced manufacturing skills in building their own electric guitar. The following link is to a YouTube video that tells more of that story. <http://www.youtube.com/watch?v=s4G5mWbYjQE>

The North Central Indiana WIRED effort focused on four strategies, and all of the initiatives aligned with one or more of them. Metrics were tracked and collected. What follows is an overview of those strategies, including the goals and metrics achieved. These metrics were reported and verified by the U.S. Department of Labor Employment and Training Administration.

Entrepreneurship Strategy

The purpose of this strategy was to create a vibrant entrepreneurship culture in the region by: (1) Providing existing and emerging entrepreneurs with new learning opportunities and new resources; (2) Educating future entrepreneurs, including high school students as well as adults; and (3) Helping existing businesses become more entrepreneurial by helping them to develop their in-house capacities to innovate. Over 20 entrepreneurship initiatives were launched as part of this strategy with dozens of partners – universities, community colleges, high schools, Small Business Development Centers, and local economic development organizations - contributing to this strategy area. The following are some of the aggregated metrics achieved by the partners:

- 1,537 existing and emerging entrepreneurs trained
- 708 new business/growth ideas developed
- 145 individuals in 11 companies using entrepreneurship strategies to increase top-line growth
- 18 new business plans created
- 17 new products or services developed

- \$1.2 million in sales growth
- 12 new start-up companies
- 45 new jobs created
- 52 new jobs retained
- \$510,000 in cost savings
- 47 school corporations offering new entrepreneurship programs
- 166 teachers trained to teach entrepreneurship
- 4,918 school-age students trained in entrepreneurship
- 22 entrepreneurship curriculum programs developed
- 10 angel investors engaged

21st Century Skills Strategy

The region's transition involved moving toward an economy that required a higher level of skills, especially in advanced manufacturing. This strategy area was designed to develop a regional workforce with 21st Century skills by: (1) Developing STEM (Science Technology, Engineering, and Math) skills in the emerging workforce, (2) Helping the existing workforce to acquire the skills, credentials, and resources needed to be part of the 21st Century economy, (3) Equipping older workers and the companies that employ them to be productive in this transitioning regional economy. The partners involved in this strategic area included universities, community colleges, and the regional workforce board. The following are some of the results of this strategy area.

- 15,042 workers trained
- 1,262 degrees or certificates awarded
- 1,634 individuals trained in global commerce—language, culture, business practices
- 9,534 individuals assessed for careers in advanced manufacturing
- 3,165 placed in employment within targeted industries
- 7,593 high-school students in new STEM education programs
- 126 scholarships awarded
- 33 “stop outs” back in college
- 130 new college internships developed

Innovation Strategy

This strategy area focused on moving innovations—new technologies, new business models, new skill profiles—into the region's key industry clusters by: (1) Linking and leveraging university and industry assets to make firms more globally competitive, (2) Developing leading-edge skills in workers at the same time that they were creating new industry demand for those skills through technology transfer, and (3) Implementing new training programs that demonstrate immediate return on investment to industry. The partners involved in this strategy area include universities, technology parks, and the Manufacturing Extension Partnership. The following are some of the results of this program area.

- 5 new training/certificate programs developed—nanotechnology, energy efficiency, health care cost control, supply chain management, green manufacturing
- 500 companies engaged in supply chain training for their workforce
- 23 university faculty newly engaged with industry
- 150 individuals with Nanostructured Coatings Technology certificates
- 67 individuals with Energy Efficiency certificates
- \$1.4 million in energy cost savings identified as a result of training program

Regional Civic Leadership Strategy

The focus of this strategy area was to create an infrastructure of regional leadership to support the continued economic transformation of North Central Indiana by (1) Creating a new regional network of organizations that can help foster regional leadership, (2) Engaging a growing number of regional leaders in developing a vision for the future and in the development of strategies to move the region toward that vision. Several new networks, coalitions, task forces, and other groups developed as spinoff efforts, most of which continue functioning today, launching new initiatives and securing new resources for the region. Indiana University Kokomo took the lead in this strategic area. The following are some of the metrics for this strategy area.

- 1,304 civic leaders engaged in regional collaborations and activity engaged in regional economic transformation efforts.
- Three new ongoing regional initiative spin offs—Clean Energy Forum, the Indiana Energy Systems Network, and the North Central Indiana IHIP Asset-Inventory Group
- Creation of regional communication tools—newsletters, blogs, collaborative workspaces, etc.
- Launching of a new Regional Leadership Institute

Lessons Learned from North Central Indiana

After launching the North Central Indiana effort, Purdue Center for Regional Development staff, along with partners, distilled the lessons learned (Hutcheson, 2008, 2010). In January, 2012 Purdue launched a national certificate program to train professionals from economic development, workforce development, higher education, and others to learn to utilize Strategic Doing in their own regions (http://www.pcrd.purdue.edu/What_We_Do/SD/default.aspx).

The following are three key lessons about the requirements for successful regional transformation.

Thinking Differently

Individuals today live and work in an environment in which the most effective work is done within networks that are embedded in still other networks; in order to meet the challenges they face and the opportunities presented to them, individuals need to learn to think differently. By understanding how transformative work gets done, they have the opportunity to build more dynamic and responsive businesses, communities, and organizations. Networks are different from conventional industrial-age organizational structures. In a network there is no top or bottom; instead, networks consist of hubs and spokes. Networks require a solid core group of organizations and institutions to function effectively, but they also need porous boundaries so that others can join at any time. Civic leaders need to understand how networks function (Vangen and Huxham, 2003; Bland, et al, 2010).

Behaving Differently

Thinking in new ways is not enough. Individuals also need to translate their thinking into different ways of behaving towards others. Collaborations are built on foundations of mutual respect. Individuals learn to trust by deciding whether a person's actions align with their words. Exploring their own behavior and the behavior of others enables individuals to build stronger, more enduring collaborations.

Working Differently

It is clear how a world of networks requires individuals to think differently. It is also evident that collaboration in networks calls participants to high standards of behavior that reinforce mutual understanding and respect. This leaves the biggest question. How can networks be guided strategically? How can collaborations be designed and managed to get big, complex projects underway? How is transformation through collaboration achieved? What are the civic spaces in which this work can occur? To answer these questions, it is necessary to understand how to design and implement strategy in open networks.

Managing a Generational Transition

Previous generations mastered the challenges of innovation by figuring out how to convert raw materials into useful products. They built large hierarchical structures capable of delivering massive volumes of products to giant markets. These hierarchical organizations operated with remarkable efficiency, generated enormous wealth for the U.S. economy, and met many of the needs of the masses. The results of this "Greatest Generation" are readily apparent in our communities: the factories, libraries, schools, grand courthouses, cultural institutions, and philanthropic organizations.

Industrial-age corporate hierarchies mirrored themselves in the civic life of communities. Government and nonprofits organized themselves into hierarchies too—a proven organizational formula for getting things done. Chambers of Commerce emerged to drive local economies and large social service organizations were established, in turn driving communities and the nation. These civic organizations can remain relevant but the environment in which they operate is changing and they must adapt by forming collaborative networks that can innovate more effectively.

It is now possible to see a future economy that is based on networks. At the same time, the demise of many institutions built by earlier generations is evident, as these stable, slow-moving hierarchies prove unable to adjust to

the faster world of networks. The challenge today involves connecting the assets of earlier generations, such as civic institutions, to the opportunities, such as new careers and new business models that will be available to in the future. These challenges play out in the corporate world every week: Barely a day goes by without a headline of a corporation moving to collaborate, even with its competitors. The same pressures are emerging in the world of education, nonprofits, and government. A growing pressure exists to collaborate, to find new ways of delivering value, and to innovate.

The consequences of corporations moving too slow to the new realities of globalization and networked competition are increasingly apparent. The same fate may await government and civic organizations too slow to move. New pathways to the economy and society are needed to enhance networks.

Designing new networks and building stable relationships takes time. People need to get to know each other and understand their respective interests. They need to explore the value of new connections and envision “what could be,” and they require safe places to do this important work. Communities engaging in strategy development need to give careful consideration to the civic spaces—physical places and institutions—where these community conversations can occur. Neither city halls nor the local high schools are good choices. These are places where people at the top tell people at the bottom what to do. Places like libraries and county fairgrounds send a better message. There’s no dumb question at a library, and the fairground is a place where all are welcome. That is both the challenge and the opportunity: creating civic spaces where transformational thinking can occur, where new behaviors can be practiced, and where a new way of working together can be initiated.

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