

6-1-2003

Using Economic Impact Models as an Educational Tool in Community Economic Development Programming: Lessons from Pennsylvania and Wisconsin

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Recommended Citation

Shields, M., & Deller, S. C. (2003). Using Economic Impact Models as an Educational Tool in Community Economic Development Programming: Lessons from Pennsylvania and Wisconsin. *The Journal of Extension*, 41(3), Article 6. <https://tigerprints.clemson.edu/joe/vol41/iss3/6>

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June 2003 // Volume 41 // Number 3 // Feature Articles // 3FEA4



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Abstract

Smaller communities throughout the U.S. are experiencing significant economic, social, and political change. Increasingly, if these communities are to address these changes in a proactive manner, they must undertake grassroots initiatives. Local efforts are increasingly important as community leaders clearly recognize that federal and state programs are often inadequate in their ability to address local concerns. In this article we outline an educational process designed to help provide communities with economic, social, and political information, using community economic impact modeling systems as a foundation.

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Introduction

In today's complex and volatile economic climate, communities need information to help anticipate and respond to economic change. Local leaders and citizens increasingly face difficult questions about the impacts of changes such as business growth, the decline of traditional industry, and evolving land uses. Increasingly, they are asking how these changes will affect local economic indicators such as employment, income and population, and the demand for public services.

To fully understand the effects of economic change, citizens and officials must first understand the local economic structure. Unfortunately, many communities lack the resources to examine the consequences of change. As a result, important decisions too often are made with limited information and understanding and, in some cases, misinformation.

Economic impact models can help officials and citizens address these concerns. These models focus on how a local economy functions, how various elements of the local economy are interrelated, and how a change in one element may affect the others. These relationships can help predict important aspects of economic change, including employment and unemployment, commuting and migration, and projected changes in government and school district revenues and spending.

University specialists in a number of states (e.g., Pennsylvania, Wisconsin, Missouri, Iowa, Ohio, Minnesota, Texas, and Nevada) are using economic impact models as the foundation of their educational programming. Working under the umbrella of the Community Policy Analysis Network of the Rural Policy Research Institute, this effort has built a national network of community economic modelers. (A detailed overview of RUPRI and the economic modeling effort is available at <http://www.rupri.org/cpan/> and in Scott and Johnson [2000].)

Extension professionals are using these models with two principal objectives in mind. First, they are used to improve understanding of the economic structure in which decision-makers craft development policy. Second, the models provide practitioners with a tool useful for policy and impact analysis.

In this article we describe how we use economic impact modeling in Pennsylvania and Wisconsin to help local residents and officials make more informed decisions. In the next section we describe Extension's historic and expanded roles in economic impact analysis. In the third section we provide a brief description of the basic of economic impact modeling, and in the fourth section we describe a framework in which the models can underscore Extension programming about local economic structure. Finally, we offer some concluding comments.

The Evolving Role of Extension in Economic Impact Analysis

Extension has historically responded to requests about the impacts of change in a number of ways, ranging from educated guesses to the application of sophisticated modeling systems. Although educated guesses are often helpful as a starting point, the research-based analyses facilitated by more formal models are generally preferred by most community decision-makers. In fact, over the past 10 years or so, sophisticated, yet flexible, economic impact models have become fairly commonplace, allowing analysts to address and quantify a variety of local economic development issues, including:

- Employment impacts of a new business moving into the community
- Economic and fiscal contributions of a local industry
- Spin-off effects of a factory closing or downsizing
- Impacts of government activity (such as a military base closing)

While many Extension specialists are facile in these new methods, what is often overlooked is that these questions create a learning opportunity.

In economic impact modeling, there are two typical roles Extension can assume when working with communities. The first (and most common) approach is to provide technical assistance in addressing specific questions. Here Extension acts as a quasi-consultant, offering expertise on specific community issues.

The second approach returns to the land grant's mission as an educational institution. Here Extension provides educational opportunities for the community to better position itself to improve its own situation. The overriding goal of these efforts is to help communities engage in more informed discussions that lead to better decisions.

For smaller and more rural communities, local leaders are often volunteers who lack technical skills for economic analysis. Questions are often not well formulated and commonly reveal a lack of understanding of the economic issues. For these smaller communities, the challenge is to use economic impact models to help leaders and citizens better understand community change.

One example of such an opportunity in Wisconsin occurred in 1993, when the Chicago Bears, the professional football team, began renegotiating their contract with the University of Wisconsin-Platteville for the use of the school's facilities for their training camp. The Platteville Chamber of Commerce was concerned that public sentiment would sway the university to look unfavorably on the negotiations. (One must remember that this is Wisconsin, and the Green Bay Packers-Chicago Bears rivalry is taken seriously). The county's Community Development Extension agent was approached by the Chamber to see if the university could document the impacts of the training camp on the local economy. A learning opportunity was at hand.

The county educator, working closely with a state specialist, undertook a standard input-output analysis of the tourism event. In the study, concerned citizens, Chamber members, and representatives of the UW-Platteville's Chancellor's Office were all involved. Working closely with the community, discussions about the nature of the study, the required data, and the underlying research methods allowed the county educator numerous opportunities to teach about the economic relationships defining the community. The final release of the study (Lewis & Deller, 1994) drew media attention to the positive economic impact the training camp represented.

UW-Extension was able to provide multiple services to the public. Foremost, the research provided direct answers to direct questions. For example, the analysis gave detailed estimates of the number of jobs created, including the spillover effects generated through the economic multiplier process. Here, Extension acted as a technical assistant by providing specific information.

The study design also brought the community together to reach a common goal. Assuming the role of a self-help facilitator, UW-Extension was able to help Platteville better understand its local economy and the positive economic benefits of hosting the training camp. In the end, the contracts were re-signed and the Bears' training camp is now a late summer tradition.

Overview of Economic Impact Analysis

In every local economy, businesses, governments, and consumers conduct thousands of seemingly unrelated transactions each day. But from an economic perspective, all of these transactions are

interrelated. Businesses sell goods and services to households and other businesses, households sell resources (such as their labor) to businesses, and governments collect taxes from both to pay for public services. Because of these interrelationships, changes in one sector often affect other sectors. For example, when a local business expands, the increase in jobs and income can substantially affect the housing market, the demand for government services, and retail sales, as well as other local businesses.

In Pennsylvania and Wisconsin, we apply economic impact models to examine the effects of local economic change. These models, developed from statistical analysis of economic trends, examine the relationships between employment, income, population, and local government and school district revenues and expenditures, among other things. In each of our states, a separate model has been created for each county, using data from the Bureau of Economic Analysis, the Census Bureau, the Bureau of Labor Statistics, as well as state agencies. In addition, these models use the IMPLAN input-output model for part of its analysis. (A complete description of the Pennsylvania model is available at <http://cimpsu.aers.psu.edu/>.)

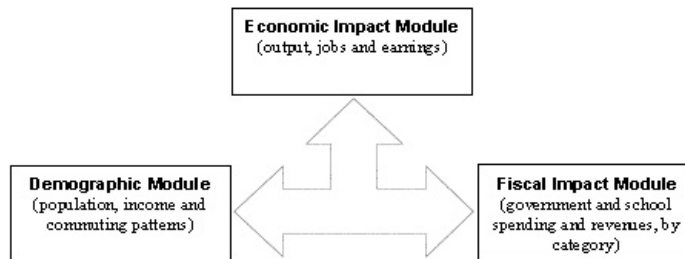
Central to both the Pennsylvania and Wisconsin models are three major interrelated modules:

1. Economic Impact Module,
2. Demographic Impact Module, and
3. Fiscal Impact Module.

Each captures an important aspect of the local economy, and the modules are interrelated, so a change in one will cause changes in the others (Figure 1).

Figure 1.

The Basic Structure of the Pennsylvania and Wisconsin Economic Impact Models



Economic Impact Module

This module looks at production relationships among local industries and how changes in the final demand for locally produced goods and services by one business affect other local businesses. For example, if demand for locally produced forest products increases, these businesses will increase their use of inputs (both labor and non-labor) to produce more. Because many of these inputs may be purchased within the community, other local businesses might experience an increased demand for their products.

One key result of this module is an estimate of how changes in local business activity affect local employment, earnings and income, both directly and indirectly through the multiplier effect. The production module is built around the widely used IMPLAN (IMpact analysis for PLANning) input-output model <<http://www.implan.com/>>.

Community Demographics Module

This module estimates how the studied change affects the population characteristics of a community. If a business creates new jobs, for example, this module will give detailed information on how many will go to current residents, commuters, and new residents, and the impact on school enrollment. Changes in local demographic characteristics are important because they inevitably affect local government revenues and expenditures.

Fiscal Impact Module

This module examines how economic and demographic change affects service expenditures by school districts and county and municipal governments, and the tax and non-tax revenues those jurisdictions receive. A major new employer can bring new residents, increasing the need for road maintenance, police, sewerage and water, and other public services. Analogously, the children of these new residents will need schooling, increasing education expenditures. At the same time, tax collections likely will increase due to the influx of new working residents, both through local income and property taxes.

Applied economic impact models work through a typical three-step process:

1. A baseline scenario is constructed, which serves as a snapshot of the local economy before an economic event.

2. The economic event of interest--such as loss of local jobs due to a plant closing--is introduced to "shock" the model. The effects are then traced through the model to determine how various sectors of the economy will respond. The resulting snapshot is how the economy will appear after the change.
3. The baseline scenario and the predicted scenario are compared. The differences between the two (such as total local employment, income, and local taxes) are the economic impacts.

Of course, an important aspect of good impact analysis is a reasonable and accurate baseline against which to compare the change scenario. In practice, the baseline is estimated using the current values of key factors in the community, a calculation that assumes that people will substantially alter their behavior only if the studied change occurs.

A Framework for Using Economic Impact Models in Local Education Programs

In both Pennsylvania and Wisconsin, economic impact models underlie educational programs designed for communities facing change. Ideally, the models are used as the foundation of a series of community meetings. These meetings should be open to the public, with the participants reflecting the varied local opinions (especially when the model is used to analyze the potential impacts of a controversial issue).

The main purposes of the community meetings are to:

1. Help community members better understand the local economic and governmental interconnections;
2. Improve understanding of the local issue or problem, and how estimates from the model can feed into local decision-making about the issue;
3. Develop several different scenarios of what could happen, and factors that might affect which one actually occurs;
4. Ensure that the analysis is equally available to everyone, so it does not become a "weapon" used by one side against another; and
5. Draw on the expertise in the community to help interpret estimates and develop follow-up actions.

Typically, the community-level meetings adhere to the following schedule.

- *Meeting 1: Initial Community Meeting.* The model is introduced, and basic information about the local economy is presented. The motivating problem or issue is discussed and carefully defined. Alternative expectations of what will happen are explored, and model limitations are discussed. At this time a local contact person is identified (often the county Extension educator), and an advisory panel may be assembled. If the event is controversial, representatives from all sides of the issue are identified and asked to serve on the panel. Note: when assembling representatives that have conflicting viewpoints, it is important to try to identify "reasonable" people (i.e., those who are willing to work toward a common solution).
- *Meeting 2: Further Baseline and Scenario Development.* Possible scenarios are discussed and explored. Two or three scenarios are selected for analysis, and impact worksheets (which provide the information to be entered into the model) are filled out based on this discussion.
- *Meeting 3: Discuss Estimates from the Model.* The estimates under the two or three scenarios are presented and discussed. Limitations of the model and estimates are presented. Participants explore what they think the estimates say about the change, their community, and the choices available to them.
- *Meeting 4: What Next?* This meeting centers on crafting an action plan; strategies are reviewed and specific steps to be taken by the community are defined. The program provider, or university team, acts as a facilitator to move the community forward.

In general, these meetings will be led by a local facilitator trained in using the model, drawing upon the expertise of Extension specialists as needed. Often, the facilitator leads the first two meetings, when the different scenarios are developed. The information from the scenarios is then forwarded to the specialist, who uses the model to conduct the impact analysis. The third and fourth meetings may be co-facilitated by the specialist, who helps present the estimates of the analysis and leads discussion of how these estimates should be interpreted. This meeting schedule and community process can be modified depending on the needs in the community, the issue involved, and the interested groups.

It is important to recognize that each step in the process creates a learning opportunity. The process of describing the scenario is akin to helping the community focus on the particular question with which they are struggling. In addition to gathering relevant information for the

analysis, the process of the getting the community to think through the details of the event under consideration helps citizens better understand the dynamics of the local economy. In some instances, this process steers the community in directions that it may not have considered otherwise.

Development of the baseline (i.e., status quo) is also insightful for the community. Presenting the baseline to the community often creates an environment where residents are forced to think about what their community looks like today and may look like in the near future. Working with the community to refine the baseline estimates not only improves the quality of the simulation, but also helps the community think through different aspects of the local economy.

The third step centers on the actual simulations or, more accurately, the difference between the simulation and baseline analysis. This is usually a formal presentation of the baseline scenario and simulation. Here the analyst is a technical assistance provider. Discussions of dollar circulation and leakage along with the notions of capacity for change often help the community better come to grips with how the local economy functions.

The final step includes working with the community to identify strategies to affect change. This step typically uses nominal group processes to identify priorities and define specific strategies. At the end of the process, the community has a report detailing the structure of the local economy along with a community-driven action plan.

What if There Are Differing Opinions in the Community?

Recognizing that impact analysis can involve controversial issues, the models are designed to accommodate several alternative scenarios, a useful feature if what will happen is not fully known. For example, there may be differing opinions about some aspect of the change (e.g., a new business claims that 60% of the new jobs it creates will go to community residents, while opponents argue that only 30% of the new jobs will go to local residents).

Alternatively, the community may have some options available to control the change, but are unsure of which to use. Each scenario is investigated individually and compared to the baseline. Considering several different scenarios establishes a range of estimates for a specific change.

Some Model Limitations

All economic impact models are based on a set of assumptions necessary to make such modeling possible. The assumptions, however, also introduce certain restrictions that are important to understand. Used properly, the estimates can provide very useful information about a community, the economic interrelationships in a local economy, and how change can affect those relationships. Still, the model's estimates should be viewed as a range of possible impacts, and they need local interpretation for verification.

It is also important to remember that the results should be used as only one part of a discussion about a possible change. Non-economic factors, such as public health, quality of life, environmental impacts, and social and cultural history, are not directly integrated into the analysis, even though such factors are often equally (if not more) important. Other concerns and issues in the community must balance the model estimates.

Keys to Success

Ideally, there are several local preconditions that should be place in order for this program to succeed. Woods (1996) spells out the characteristics nicely by identifying seven key characteristics of successful communities.

1. *Local Commitment.* If local residents and leaders do not endorse the effort, it will in all likelihood not be successful.
2. *Broad Community Involvement.* Wide participation from many groups within the community is essential; otherwise, the community will not own the resulting plan of action.
3. *Community Ownership.* The community should take an active role in planning the effort. Outsiders can facilitate and interject information, but sustainability requires that the final plan of action must come from the community itself.
4. *On-Site Visits.* While much of the technical information used in the models can be obtained over the phone, face-to-face meetings with leaders and citizens are essential.
5. *Reliable Information.* Any type of action planning requires that the plan be based on good information. This is one of the strengths of the community economic modeling effort--quality baselines and simulations are preeminent.
6. *Exposure to New Information.* The program must challenge communities to think about the local economy in new ways. Community residents should begin to think strategically about the change the community faces.

7. *Timely Response*. The program is designed to create learning opportunities. Specialists and agents must be flexible and reasonably responsive to community requests.

Conclusions

As the issues facing smaller communities become more complex, there has been an increase in demand placed on universities to provide assistance. Community economic impact models offer a framework for providing focused assistance. When communities have turned to Extension for information, the historic role has been that of technical advisor, providing specific answers to specific questions. We argue that Extension's role can be broader.

These requests for information represent learning opportunities where the Extension can help communities think more broadly about the local issues and challenges underlying the initial information request. Our challenge, then, is figuring out how Extension can move beyond using community economic impact models as analytical tools to their uses as educational tools.

By working closely with communities in an organized and structured manner, Extension is well positioned to help communities move beyond the immediate crisis to consider the broader, long-term issues affecting the community. The education outreach program outlined here, while moving community economic impact models beyond just analytical tools, places great demands on university faculty and staff time. This raises a legitimate question about resource allocation, level of involvement and impact.

Specifically, is it a better approach to work closely with a small handful of communities to create more sustainable and meaningful change? Or is it better to provide technical analysis to a greater number of communities, all of whom need basic information for enhanced local decision making?

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