A Preliminary Assessment of LOCI© Software
Minnesota Public Finance Note #2001-02

What is LOCI©?

In order to strengthen their local economies, many communities strive to attract new businesses and to retain those already in their area. With the promise of more jobs and a larger tax base from new or expanding businesses, communities often consider granting businesses financial incentives. To determine whether such incentives are worthwhile, government officials must estimate the costs and benefits to their community of potential new business activity. The Local Economic Impact Analysis (LOCI©) software was designed to estimate the public costs and benefits of a new investment in a local economy. The software was developed in 1995 by Bill Riall and Robert Lann, two economists at the Georgia Institute of Technology’s Center for Economic Development Services (http://www.ceds.gatech.edu). LOCI is available on CD-ROM, and users may attend a two-day training course on the program.

What are the limitations of this preliminary assessment?

Without performing a thorough review of LOCI, we cannot determine whether it will be a useful tool for Minnesota Extension Educators and development professionals. A thorough review would include an analysis of the sensitivity of LOCI’s output to the user’s choice of input data, an evaluation of LOCI’s methodology, and a comparison of LOCI to other impact tools. Our preliminary review of LOCI, however, revealed a number of important issues to consider when using it to estimate economic and fiscal impacts.

What issues should be considered when using LOCI©?

LOCI is just one tool in a community’s planning process. As the software documentation makes clear, LOCI cannot produce definitive answers about whether a community should or should not pursue a particular project. The software estimates the net financial benefits from a project, but it does not account for the community’s broader goals. Impacts on the environment, quality of life, existing businesses, and the community’s broader fiscal goals should be considered within a long-term, economic development planning process. The analysis produced by LOCI should serve as an input to a comprehensive planning process, not as a substitute for it.
A thorough evaluation of LOCI’s estimation methodology is necessary. LOCI is based on a commonly used economic and fiscal impact methodology, but the details of LOCI’s specific estimation methods are not always explicit in the software documentation. A through evaluation of LOCI’s estimation methods would help users determine if the program is applicable to a particular project or community. Such an analysis would also highlight the strengths and weaknesses of the program.

An examination of LOCI’s estimation methods could also reveal whether any details of the model, such as the calculation of local government revenues, are specific to Georgia communities, for which the program was originally written. Significant differences between local government structures in Georgia and Minnesota could cause LOCI to produce misleading results for Minnesota localities.

LOCI omits costs and benefits that are not easily quantifiable. LOCI defines public benefits as revenue from taxes, fees, and public utility charges. A new business, however, may bring other, less direct benefits. A new building might enhance the appearance of a neglected downtown, and increased activity might improve public safety. Attracting businesses from an industry that is already represented in a community might reduce costs for similar businesses, as suppliers and skilled workers begin to see the community as a center for that industry. On the other hand, attracting an employer from a new industry can help diversify a local economy, reducing its susceptibility to economic downturn.

LOCI defines public costs as the costs of additional public services and financial incentives provided by the local government. But new business investment may also bring indirect costs, such as environmental damage, increased crime, or increased congestion.

These additional costs and benefits are omitted from LOCI’s analysis, though they should be included in a community’s evaluation of a project.

LOCI does not evaluate the viability of a business. In its analysis of a new or expanding business, the software does not assess the profitability or viability of the company. A LOCI user must rely on the company for much information, including its expected revenues, costs, and number of employees. The user should independently verify that the company would be profitable in the new location or with the proposed expansion.

“Off-model” calculations can make it difficult to maintain consistency. Several sections of the program require the user to make calculations without the software, either on a separate spreadsheet or with pencil and paper. For example, calculations of local retail sales and local effective buying income are made “off-model.” This makes it difficult to maintain consistency throughout the model if the user wants to run variations on the analysis. For example, if the user wants to apply an inflation rate to all of the parameters of the model, the “off-model” calculations may be missed. If it is not possible to incorporate all of the calculations into the software, then the user must be very conscientious about keeping track of all the “off-model” calculations.
LOCI may not be flexible enough for some users. LOCI allows the user some limited flexibility to adapt the model. For example, the program allows the inclusion of a few public utilities in addition to those provided by default. And in most sections of the program, the user can employ parameters that have been calculated with an off-model methodology. The program may not, however, provide enough flexibility to a user with extensive expertise in economic development and cost-benefit analysis. Such users may be better off creating their own spreadsheet-based model, which they can manipulate as they wish.

The choice of input data may affect the output. Users are asked to collect and enter a significant amount of data for a community profile and for the project that is to be analyzed. In many cases, the choice of input data will affect the program’s output. Without a complete sensitivity analysis, however, it is not possible to know for certain how the choice of data will affect the software’s results.

In many instances the documentation suggests data sources, but recommends the use of local data if it is available. There is no way to predict, however, how the choice of data from sources other than the recommended sources might bias the outcomes.

Alternative data sources must be consistent with the rest of the input data. Alternative data should be from the same time period, in the same units, and use the same definitions as the suggested data sources. Failing to ensure consistency could bias the results. For example, LOCI suggests that the user estimate a community’s effective buying income from county level data, but the user may instead use a local source for income values. If that source defines “effective buying income” differently than LOCI does, the results will be misleading.

Careless data collection and entry will produce poor results. LOCI’s software tutorial, manual, online news group, and e-mail support system offer adequate instructions for someone with a background and familiarity with cost-benefit analysis. If data are to be collected, entered, and/or analyzed by someone without such a background, however, additional training and supervision will be required to protect the integrity of the results.

Default data may not be appropriate for some communities. Whenever the program requires hard-to-find local data, users are given the option of using default data values. For example, numerous default values are provided for tourism-related projects. The default values are taken from various sources, often at a higher level of aggregation than the locality (for example, state averages). For a community that falls within the norm for these values, the default parameters are probably acceptable. For a community that lies outside the norm, however, the defaults may produce incorrect results.

The current version of LOCI relies on 1990 Census data. At several points, the documentation directs users to the 1990 Census, which is still the most current Census data available. For parameters that are likely to have remained stable since 1990, these data are probably acceptable. In many cases, however, the age of the data will pose problems. For example, to estimate a city’s
effective buying income, the authors calculate the ratio of the city’s household income to the
county’s household income from the 1990 Census and apply that ratio to the county’s effective
buying income. This method is only valid if the percentage of county income accounted for by
the city has remained stable for the last ten years.

Minnesota communities may not report data at the same level of detail and in the same format as
LOCI requires. The documentation warns that some types of data will be difficult to find. It may
be the case, however, that some of the data that the authors think will be easy to find is, in fact,
not readily available in the appropriate format in Minnesota.

Subjectivity in the choice of some parameters can lead to biased results. In a few cases, LOCI
requires users to estimate a key parameter, without providing much guidance on how to do the
estimation. For example, users must estimate the percentage of employees in a new facility that
will come from the previously unemployed. This can be a complicated value to estimate.
Without a recommended estimation method, users may rely on their own subjective guess about
the value, possibly biasing the results.

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