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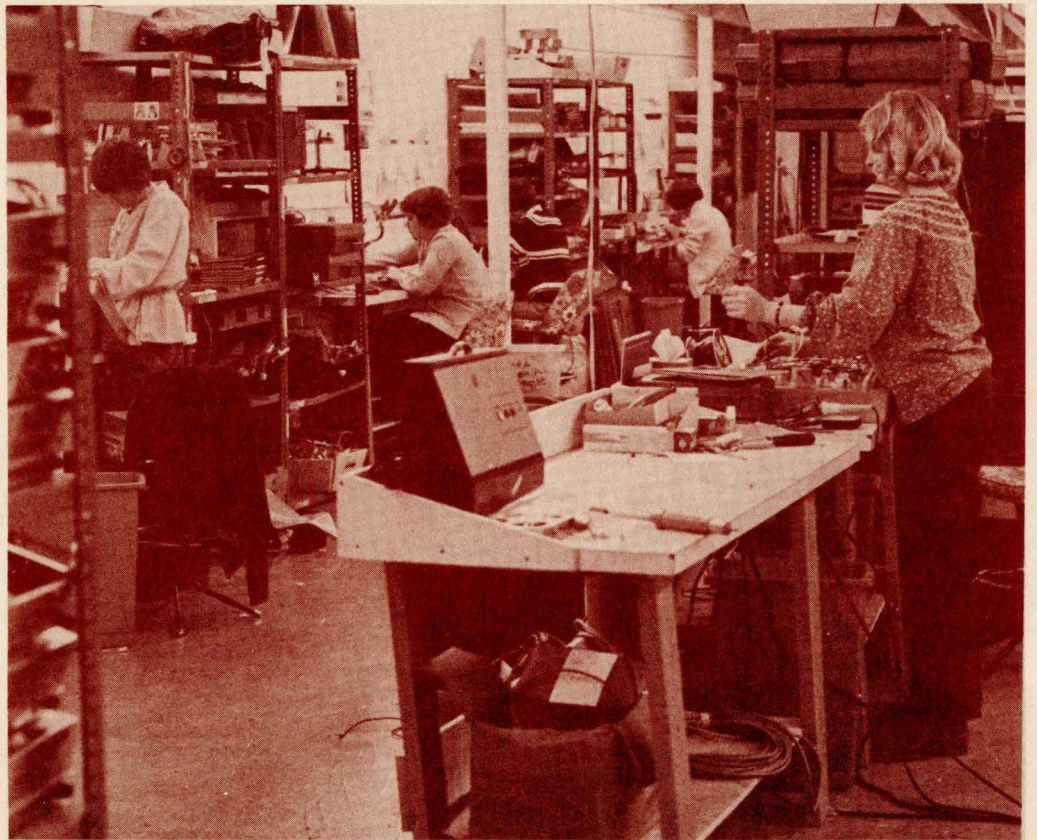
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Rural manufacturing development ...

what influences it?

a study of South Dakota in the '70's



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Rural manufacturing development ... what influences it?

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I. Introduction

The increased level of manufacturing activity in rural areas¹ of the U.S. over the past 20 years is a reversal of a pattern. Metropolitan areas traditionally have been considered least-cost locations because they attract complementary firms and suppliers and possess skilled labor pools, access to markets and transportation, and a wide range of services. However, certain problems--such as pollution, crime, and congestion--have begun to offset the appeal of metropolitan areas. Manufacturing employment growth during the 1960's showed U.S. nonmetropolitan manufacturing employment increasing by 3.4%, compared to a metropolitan gain of 1.7%.²

South Dakota has benefited from this trend, posting a 20% (or 2,600 employee) increase in manufacturing employment in the 1960's and a 65% (or 10,200 employee) increase from 1970 through 1980. (Over 75% of the increased manufacturing employment from 1960 through 1980 occurred among those industries producing durable goods.)

This increase in manufacturing employment has helped offset the decline in agricultural employment. Agriculture (directly) accounted for less than 15% of total employment in South Dakota by 1980. Direct employment in agriculture decreased by more than 40% from 1960 to 1980.

Expanded manufacturing employment opportunities have helped to reduce the flow of working age people out of South Dakota. Net outmigration from South Dakota decreased from 92,560 persons during the 1960's to 28,935 during the

1970's. This permitted modest population growth (3.4%) in South Dakota during the 1970's, compared to a decline (-2.1%) in the 1960's.³

We have no assurance that this pattern--continued expansion in manufacturing jobs to help balance the economy--will continue. One recent study notes that

employment growth of the 1970's [in the Upper Midwest, which includes South Dakota] was made possible largely by the huge numbers of young people and women joining the labor force. But the supply of young workers will be greatly diminished [in the 1980's] because most of the "baby boom" children are already in the labor force. How many more women will join the labor force is uncertain.⁴

What lessons can we learn from the 1970's, so that we can continue a steady and sound expansion in rural industrial employment opportunities?

An examination of recent industrial location patterns in the state--with attention to community and labor force characteristics of the communities in which industries have located--can help in projecting, planning for, and promoting manufacturing growth in the future. If they know what has most influenced previous industrial location decisions, local planners can then more effectively deal with those inducements to industry which are within their own community's control.

Purposes and hypotheses of the study

The general purposes of this study were two-fold:

- (1) to explore how the extent and type of rural industrialization being experienced in South Dakota differs among types of communities and local labor sheds; and
- (2) to develop policy and planning recommendations that can be used by rural industrial development entities at the community, district, and state levels in South Dakota.

The underlying assumption of this study was that the degree and type of industrialization is directly related to community and labor shed characteristics. These characteristics, or "locational inducement factors," can be broken down into several categories.

Labor force: It was hypothesized that the existence of an ample supply of relatively low cost labor favors manufacturing employment growth. As manufacturing firms often must train their employees anyway, the low skill level of much of South Dakota's work force may not be a detriment. It may, in fact, be a boon to expanding manufacturing activity, since low skills generally imply low wages, which in turn attract manufacturing. This relationship was expected to exist primarily for labor-intensive manufacturing firms with relatively low-technology production processes.

Agglomeration: We also expected a sizable population base and agglomeration factors to aid a community's industrialization potential. Agglomeration economies refer to reduced costs of inputs and services for firms that are achieved when an area has sufficient firms that suppliers can locate nearby and operate with substantial volumes. A large population base--by South Dakota standards--was hypothesized to constitute both a potential labor supply and a potential market for a firm's goods.

Transportation: Access to adequate freight transportation, for shipping raw materials in and finished products out, was hypothesized to assist a community's industrialization efforts. The availability of alternative forms of transportation--such as truck, rail, and air--and access to an interstate highway were expected to enhance manufacturing activity in a community.

Educational facilities: The existence of post-secondary educational facilities in a county was also hypothesized to promote increased manufacturing employment growth. As graduates of these facilities are retained in the community, the work skills in the labor pool will be more diverse and higher in quality. This may attract industries requiring more skilled workers. Management personnel are also more easily drawn to these communities, since they will have post-secondary educational facilities at hand for their children and since cultural amenities will be more readily available for their personal enjoyment. In addition, college students for part-time work and student spouses for part- or full-time work can add to the potential local labor force.

Other factors: There are other factors not neatly included in the four categories above. They include local actions (such as making industrial sites available, providing facilities at these sites, and providing financing assistance to firms) which are often believed to constitute attractions to industry.

Data sources and analytical procedures

Data for this study were collected from several sources. Much of the data were obtained through mail survey questionnaires. One questionnaire was sent to a sample of manufacturing firms which had become established in South Dakota communities since approximately 1970.⁵ Another questionnaire was sent to all local development corporations in the state. Copies of these questionnaires are presented as Appendices A and B in this publication. Data for other variables were collected from various secondary sources.

Several methods of statistical and tabular analysis were used in this study to discern which factors have been relevant in past location decisions of manufacturing firms in South Dakota. Multiple regression analysis was used to examine relationships between dependent variables and the values taken by sets of explanatory or independent variables. Two alternative dependent variables were used in this study: 1) the absolute change in manufacturing employment, and 2) the percentage change in manufacturing employment. Manufacturing employment change in South Dakota was measured between the years 1971 and 1977 (due to data available at the time of analysis).

The independent variables represented various socio-economic characteristics of South Dakota counties. The county was chosen as the measurement unit for the regression analysis. These independent, or explanatory, variables were grouped within four broad categories of locational inducement factors: (1) labor force availability, (2) economic structure and agglomeration factors, (3) transportation access, and (4) educational facilities. Regression models were developed for analysis of manufacturing employment growth for the entire state and for only nonmetro areas of South Dakota, thus excluding Minnehaha and Pennington counties from this latter analysis.

Tabular analyses were also carried out and were supplemented, where appropriate, by chi-square and analysis of variance statistical tests.

More details concerning data sources, statistical methodology, and regression analysis results can be found in the SDSU Masters thesis by Goeken, one of this bulletin's authors.⁶ Table 1 contains abbreviated descriptions of variables used in the regression analysis. Many of these variables will be referred to in the following sections. Shown in Table 2 are the county-level population and employment data for South Dakota which were used in the analyses.

Industrial location factors examined in this study can be thought of as either beyond a community's control or modifiable by community action. Results of the

analysis are presented in the following two sections of this bulletin.

II. Factors beyond community control

Previous industrial location studies done in the United States have frequently concluded that variables beyond the realm of direct community control are the most influential in attracting manufacturing firms. Several variables which tend to be "beyond community control" were examined in this study. Many are among the regression analysis variables included in Table 1.

Labor force availability

Manufacturing firms tend to locate where most of their labor requirements can be met from the existing labor pool in the area. This is especially true of labor-intensive industries that draw largely upon initially unskilled laborers, as do food processing and apparel fabrication firms.

Several different variables were used in this study as indicators of how much labor was available in South Dakota counties in 1970, the beginning of the period under study. These included the county unemployment rate, measures of the labor force participation rate, measures of underemployment and labor force utilization, and age structure of the county population. Regression analysis was used to determine the effect of these labor force availability factors on both growth in the absolute number of manufacturing jobs and percentage growth in manufacturing jobs in South Dakota counties between 1971 and 1977.

Only two of the variables in this group contributed much understanding to why manufacturing employment opportunities have expanded more rapidly in some counties than in others. These were the female labor force participation rate and one of the underemployment indicators.

The female labor force participation rate measures the percent of the female civilian population aged 16 and over who are included in the civilian labor force. A low participation rate is a possible

indication that additional workers could enter the labor force if more jobs became available. Counties with relatively low female participation rates at the beginning of the 1970's were found to have the greatest percentage rates of manufacturing job growth in subsequent years. This is consistent with the apparent national tendency during the 1970's for low-wage manufacturing firms to move or expand in substantial numbers into rural areas which had available female workers. For many counties, a relatively untapped female labor supply was thus conducive to attraction of manufacturing firms and jobs.

The other significant explanatory variable in the group was the under-employment indicator which measured the percentage of laborers employed less than full time (40 hours per week). As expected, counties with higher than average rates of part-time employment going into the 1970's subsequently experienced somewhat more rapid manufacturing growth, in percentage terms. The underemployed work force apparently served as a drawing card to manufacturing firms.

Other variables designed to measure local labor force availability did not shed much light on why industrial growth has been faster in some South Dakota counties than in others. The county unemployment rate, the county total labor force participation rate (including both men and women), and age structure of the county population at the beginning of the 1970's all seemed--by themselves--to explain little about differential manufacturing employment growth rates within South Dakota. This was also true of one of the measures of underemployment used, the economic utilization index. The economic effectiveness in which the skills of an area's work force are put to use is measured by this index. Differences in economic utilization of work forces among South Dakota counties at the beginning of the period studied did not seem to substantially influence subsequent rates of manufacturing growth.

High correlation between selected variables is one reason that some variables did not, by themselves, explain much of the variation among counties in

manufacturing growth rates. For example, the age structure variable was highly correlated with the college variable. The college variable (discussed later in this report) did prove to be of some importance in explaining manufacturing growth rate differences among counties.

Economic structure and agglomeration factors

Industrial firms usually consider the level and type of services available in prospective communities before making final location decisions. Often, the presence of other firms already located in an area causes a host of specialized services--such as engineering, legal, financing, and transportation services--to locate in the area and to be available at low per unit costs. These agglomeration economies are generally associated with larger communities, where the population base can provide both labor inputs and a potential market for a firm's products.

Several variables dealing with population, prior industrialization, and market accessibility were used in this study to measure agglomeration effects on manufacturing growth. The agglomeration potential of an area is also influenced by the general economic structure of the area, represented in this study, in part, by variables which measure income and poverty levels (Table 1).

Agglomeration factors: Of the agglomeration variables, the population of a county at the beginning of the 1970's seemed to have the most effect on subsequent industrial expansion. Counties with the highest population at the outset tended to have the greatest growth in manufacturing employment--both in absolute and in percentage terms. However, the effect was less marked in the more rural counties of South Dakota than in the more urbanized counties of Minnehaha and Pennington. Persons per square mile in counties showed a similar, positive effect on manufacturing growth. However, as a predictor of manufacturing growth, the simple variable population was more useful than the variable persons per square mile.

A sizable population base does, as hypothesized, apparently enhance a local area's industrialization potential. This may be due in large part to the existence of a more extensive labor supply, from which increased manufacturing workers can be drawn. The diversity of skills which can be found in the labor pool of a more populated area is also important.

A progressive, reinforcing pattern often occurs as industry which requires skilled workers enters an area. A demand for skilled laborers which can not be met from the existing labor pool is filled by skilled workers who move into or return to the area. This influx of skilled laborers may provide the impetus for attracting more industry which draws on these and other skills. In this fashion, the employment demands of manufacturing firms and the quality and quantity of the labor force in an area progress together.

A location index was used in the study to measure the importance of proximity to major trade centers. Such proximity was expected to enhance ease of shopping for employees, as well as bring manufacturers relatively near to potential markets and suppliers. However, this particular location factor did not prove to be important in explaining differences among South Dakota counties in manufacturing employment growth during the 1970's.

Another factor analyzed was the degree of prior industrialization that existed in each county at the outset of the 1970's. It was thought that counties with a greater initial industrial base would have high rates of manufacturing employment growth during the 1970's. Incoming firms can often hold down costs by utilizing facilities and services which are already present in more industrialized communities, rather than incur the added costs associated with initial provision of these facilities and services.

The degree of prior industrialization was found to have the opposite effect on manufacturing growth from that expected. Counties with a low level of industrialization entering the 1970's had the highest percentage rate of growth in

manufacturing employment. Of course, many started with very low bases, causing small absolute increases in manufacturing employment to be large in percentage terms. Nevertheless, this finding is consistent with the general national trend observed during the 1970's--manufacturing growth expanding markedly in rural, less industrialized areas of the country.

Economic structure: The agglomeration potential of an area is also influenced somewhat by the economic structure and well-being of the area. Economic well-being influences support for and availability of community services which, in turn, can enhance industrial expansion potential. Variables representing poverty and income were used to measure the influence of economic well-being factors on manufacturing growth.

The level of poverty in South Dakota counties inhibited manufacturing employment growth. Those counties with the least poverty were the most successful in increasing manufacturing employment growth during the study period. This may indicate that, as less of the populace is poor, the more support there will be for public services (such as streets, sewers, police protection, and education), which are aids to attracting industry. Also, a high degree of poverty may indicate a generally depressed economic structure, which would not be conducive to manufacturing employment growth.

Per capita income, the other variable used to represent economic well-being, did not appear to be a good predictor of manufacturing growth. However, this may have been due in part to the variable's high correlation with the poverty variable. Both variables tend to represent opposite sides of the same coin.

Transportation access

In considering where to locate manufacturing firms, entrepreneurs give careful consideration to transportation needs. Adequate facilities must exist to handle any special needs. Thus, a firm which processes bulky or heavy materials may be able to save on transport costs by locating in an area served by a railroad.

On the other hand, if emphasis is placed on fast, regular delivery service, an entrepreneur may desire to locate near an interstate highway, which may make quick access to customers possible.

The influence of access to interstate highways on success in gaining manufacturing employment was assessed by examining differential manufacturing growth rates among counties in relation to nearness of the respective counties to South Dakota's interstate system. Counties were classified according to whether an interstate highway (1) passed through the county, (2) passed through an adjacent county, or (3) passed neither through the county nor through an adjacent county.

Contrary to expectations, good access to the interstate highway system did not much improve the county-level performance in manufacturing growth during the 1970's. In fact, for percentage changes in manufacturing employment, the regression analyses actually showed interstate access to have a negative influence, although the results were not highly significant, statistically. For the types of manufacturing firms moving into or expanding in South Dakota's more rural areas during the 1970s, the results suggest that the system of paved secondary roads sufficed and that other factors (such as availability of a female work force in small towns) more than offset distance from the interstate system. Unlike in many other states, there is little cost associated with crowded highways for users of secondary roads in South Dakota.

Of course, it should be kept in mind that the interstate highway system was designed so that many of the major population centers in South Dakota are, in fact, served by the system. Hence, to a certain extent, manufacturing growth associated with population centers has necessarily gone along with interstate highway access.

Transportation modes used by South Dakota manufacturers were analyzed in some detail in this study, drawing on data from the manufacturing firm survey (Table 3).

In terms of shipping goods, the difference among SIC (Standard Industrial Classification) categories is most pronounced in the frequency of use of railroads. The producer of paper and allied products (SIC 26) relied entirely on the railroad for shipping its products. (Since only one firm existed in this SIC category, it is difficult to draw conclusions concerning the influence of rail transport on this category as a whole.) At the other extreme, firms in 8 of the 12 SIC categories did not utilize railroads at all for shipping their goods. Thus, the presence of a railroad for shipping a firm's goods appears not to be of major importance for most manufacturing firms responding to the survey.

Firms in two industry categories--electrical machinery and transportation equipment--made somewhat frequent shipping use of the transportation mode labeled "other" in Table 3. The principal "other" modes were Parcel Post and United Parcel Service (UPS).

Trucking was the most important shipping mode, carrying 91% (48 by truck owned and 43 by truck not owned) of the volume of goods shipped. All industries except transportation equipment (SIC 37) and the single reporting firm which produced paper hauled more than 80% of their outshipment volume by truck.

Reliance on trucking was also evident in the receiving of materials (91% of all materials received). Firms producing chemicals and allied products (SIC 28) constituted the only SIC group to use trucks for less than 80% of the volume of materials received. This group of firms used rail more than did others, with 24% of volume received by this means.

Table 4 differentiates the use of each method of transport for firms located in different sizes of cities or towns. Reliance on trucks for shipping goods was fairly equal among firms in different city sizes. For receiving materials, firms in cities of 1,000 to 5,000 persons tended to utilize trucks owned by the firm more often than did firms in other size intervals. No par-

particular city size appeared to have much greater use of air or rail transport (for movement of manufacturing materials and goods) than did others. Firms located in smaller communities (under 1,000 population) did tend to use "other" transportation modes, such as UPS, to a greater extent than firms located in larger communities.

Overall, transportation access does not appear to have been as important as we expected it would be in inducing manufacturing firms to locate in some South Dakota counties rather than others. A reasonably good system of secondary roads, coupled with heavy reliance on truck transport, seems to have made many of the smaller and more remote towns sufficiently accessible for manufacturing growth to take place. The use of truck transport allows firms flexibility in plant location decisions, permitting factors other than transportation access to exert stronger influence on those location decisions.

This in no way denies the positive influence that the interstate highway system has had in opening up South Dakota as a whole to manufacturing possibilities. The state is certainly more accessible to regional and national manufacturing goods markets than it was prior to creation of the interstate highway system.

Educational facilities

The existence of post-secondary educational facilities within a county was hypothesized to be a positive inducement to manufacturing employment growth. A certain proportion of graduates from post-secondary educational facilities can be expected to remain within the community following graduation if employment opportunities are available; this causes a general upgrading of the skill level of a local labor force. Manufacturing firms which require special labor skills may tend to locate in a county where a college or appropriate vocational education facility is present. Another attraction which is associated with college communities is the increased availability of cultural opportunities. This can be especially influential in

attracting manufacturing management personnel to rural areas, as these cultural amenities add to the overall quality of rural living.

To test the above hypothesis, rates of manufacturing employment growth in South Dakota counties were examined in relation to presence or absence in the respective counties of (1) colleges and (2) post-secondary vocational education (vo-ed) institutions. Those counties which had either college or vo-ed institutions in 1970 did tend to show greater manufacturing employment growth, in absolute terms, in subsequent years. While that tendency also held true when county manufacturing employment growth was measured in percentage terms, the influence exerted by educational facilities was not particularly strong.

III. Community modifiable factors

Many location factors are beyond community control. However, there are certain variables a community can influence which are believed to enhance its industrial potential.

General local development corporation activities

A local development corporation (LDC) has been described as an "independent association of private businesses and citizens operating with privately subscribed funds as a legal authority or instrument of the state in which it does business. The privately subscribed funds are received through the sale of stock, if chartered as a profit corporation, or from dues, assessments, or other contributions, if chartered as a nonprofit corporation."⁷

The roles which LDCs play vary considerably. Generally, an LDC promotes the economic development of the community by assisting industry in locating within the community or by helping to expand existing industry. This may be accomplished by provision of several items, including financial assistance, industrial sites and related facilities, and general liaison between the community and industry.

Most of the 125 firms responding to the manufacturing firm survey indicated that LDCs had exercised little or no influence on their decisions to locate either within South Dakota or in particular communities. Only 17% indicated LDCs had exerted a major influence on their decisions to locate within South Dakota. The same percentage reported major LDC influence on their decisions to locate in particular communities.

LDCs assigned somewhat more importance to their own roles in attracting industry. Of 87 questionnaire responses to one question, 43 (roughly half) of the LDCs felt they had been successful in influencing one or more manufacturing firms to locate in their respective communities since 1970.

Two thirds of the reporting LDCs in South Dakota were organized as nonprofit entities. There was little difference between profit and nonprofit types in self-reported rate of success in attracting manufacturing firms. However, a greater proportion of the profit LDCs or their communities (92%) provided some form of financial assistance to firms they helped attract than did nonprofit LDCs or their communities (66%). The LDC survey also indicated that financial assistance was more often provided in large than in small cities.

Types of financial assistance reportedly offered to firms by LDCs or local governments are summarized in Table 5. The responses are grouped there according to type of LDC (profit vs. nonprofit).

The lease-purchase option (LPO) on buildings and land was the most frequently used form of financial assistance, followed closely by the LDC assisting the firm in obtaining financing from some other source (ASSIST). Disregarding the "OTHER" category in Table 5 for the moment, the least commonly used source of financing was industrial revenue bonds (IRB).

The local tax incentive (LTI) was utilized by 59% of the firms attracted by an LDC designated as profit, whereas local governments in towns of nonprofit LDCs utilized that means of assistance for only 10% of the firms for which financial

assistance was provided. Nonprofit LDCs offered the lease-purchase option (LPO) on buildings and land more often than any other type of financial inducement.

LDCs in towns with less than 2,500 persons utilized the lease-purchase option (LPO) on buildings and land more frequently than any other single financing device. A local tax incentive (LTI) to firms was the device most commonly used in cities of over 2,500 persons. The use of industrial revenue bonds (IRB) as a financial attraction device was most prevalent in the cities of over 5,000 persons.

Overall, it appears that LDCs and local governments in large population centers are more willing and able than those in small centers to provide financial assistance of a more costly nature--such as local tax incentives and industrial revenue bonds. Conversely, the LDCs and other local entities in small communities tend to rely more heavily on conventional lease-purchase options on buildings and land and on assisting firms in obtaining financing from other sources. It should also be noted that profit-making LDCs generally mobilize more financial assistance of all types than do their nonprofit counterparts; much of this assistance, it should be noted, is public in nature (i.e., industrial revenue bonds and local tax incentives).

LDCs ranked (in the survey) eight ways often used by them in promoting industrial development (No. 1 is most important and No. 8 is least important):

- No. 1. Play direct role in making industrial sites and buildings available to firms--by development corporation options, ownership, lease-purchase arrangements, etc.;
- No. 2. Promote good business climate and serve as liaison between industry and various community groups;

- No. 3. Assist firms in obtaining financing from other sources, such as commercial banks or the Small Business Administration;
- No. 4. Make inventories of all available industrial land and buildings in the area;
- No. 5. Conduct economic surveys of the area (e.g. labor surveys);
- No. 6. Give tours of the area to prospective firms;
- No. 7. Directly assist in financing; and
- No. 8. Provide managerial and engineering counseling services of a technical nature.

As indicated by the rankings, LDCs in South Dakota feel that the provision of industrial sites and buildings is of primary importance in attracting industry. This is perhaps the most common function of LDCs, as industrial sites are often held on option, with the possibility of as yet unidentified firms locating in a community.

According to the rating given to the two factors dealing with financing, it appears that the LDCs do not feel that a direct role in financing is as cost-effective in attracting industry as is an indirect role, via assistance to firms in obtaining financing from other sources. This supports our general observation that most LDCs in South Dakota do not have large amounts of capital to work with and that they thus rely more on alternative financing, as well as nonfinancial inducements, to attract industry.

As expected, the provision of managerial and engineering counseling services of a technical nature was rated least important of the various roles of LDCs in attracting industry. This ranking may be due to the inability of most LDCs and local entities in South Dakota to provide such services. Provision of such services can be expected to be most prevalent in

the larger population centers and in communities where these services are associated with a university or extension program.

The profit-nonprofit status of LDCs did not produce any marked differences in their ratings of these eight industrial inducement factors. However, some differences were noted among LDCs in various city sizes. Most notable was the difference in rated importance of financing assistance, with LDCs in cities of over 2,500 persons considering both direct financing for firms and assistance in obtaining alternative financing as being of more importance than did LDCs in communities of less than 2,500 persons. The LDCs in larger communities appear to have relatively more capital resources from which to draw in their industrial inducement efforts.

Site availability and quality

Several questions on both the local development corporation survey and the manufacturing firm survey explored the characteristics and business terms of industrial sites and buildings utilized by firms.

Of 85 LDCs which responded to one question, 66% indicated that they owned or had an option on a development site; 92% of LDCs in communities of over 5,000 noted such ownership or option arrangements.

The breakdown, for LDCs reporting ownership or option arrangements in existence, is as follows:

- (a) 56% reported LDC-owned sites;
- (b) 18% reported that they held options on sites; and
- (c) 26% indicated that they controlled development sites by a combination of ownership and option agreements.

Profit LDCs were found to be more likely to own development sites than were nonprofit LDCs.

Of those firms which LDCs reportedly helped influence to locate within their communities, 71% located on specially designated development sites (Table 6). Sixty percent of the development sites were owned by LDCs and an additional 16% were held on option by LDCs. The LDCs also reported that 69% of the development sites were in areas zoned "industrial."

Facilities available at industrial sites prior to firm location, according to 126 respondents to the manufacturing firm survey, are shown in Table 7. Over 50% of these sites had electricity, sewer, and paved road facilities. Electricity was the most often available.

Due to the small number of firms in several of the SIC code categories, we must exercise caution in drawing conclusions about the importance of various facilities in attracting particular types of manufacturing firms. However, we do note that those firms producing transportation equipment (SIC 37) tended to locate at sites which did not have treated water, sewer, or rail facilities. Rail service seems to be of little consequence to those firms producing apparel and other fabric products (SIC 23) and firms producing electrical and electronic machinery, equipment, and supplies (SIC 36).

Firms producing concrete products (SIC 32) tended to locate on sites where no building was already present. This would be expected, since the majority of the firms in this SIC category produce products which require special plant features peculiar to the industry. The sites which these plants located on were also the least likely to provide gas, paved road, electricity, and sewer facilities. Conversely, provision of rail service at the site was more likely in this SIC category than in most others, indicating an apparent need for concrete producers to have rail access to move their bulky materials.

Nearly half (49%) of firms responding to the manufacturing firm survey indicated that they had moved into previously used buildings when they came to the community. Another 39% moved into new buildings constructed specifically for them. Very few firms utilized previously unused

speculative buildings. This may give a clue about the advisability of constructing "spec buildings."

The most frequent users of new buildings included those firms producing cement products (SIC 32), food products (SIC 20), and lumber and wood products (SIC 24). These types of firms generally need special facilities which must be built into the structure of the plant. Thus, it may be as cost-effective to construct a new building to meet these firms' exact specifications as to remodel an existing building.

Firms were also categorized according to whether they were "new" operations or "take-overs" (changes in ownership involving previous local operations) at the time of establishment in the community. Of the 102 firms reported as "new" operations, the proportion utilizing new buildings was about the same as that utilizing previously used buildings. However, of the 23 firms designated as "take-overs" of previous operations, 19 (83%) used previously occupied buildings.

Buildings and land were purchased outright by 46% of the manufacturing firms. The other types of purchase or rental arrangements reported by firms were fairly evenly split: 19% of the firms used ordinary leases; 10% used lease-purchase agreements financed by municipal bonds; 18% used other types of lease-purchase arrangements; and 9% used some "other" type of purchase or rental agreement.

Those firms which located in cities of 5,000 to 9,999 persons utilized the lease-purchase agreement financed by municipal bonds 37% of the time, nearly three times more frequently than did firms in any other city size group. In contrast, firms in smaller cities used this form of purchase-rental agreement least often, relying more on outright purchases of buildings and land and on various other types of purchase or rental agreements.

Firms producing food products (SIC 20), chemical products (SIC 28), and cement products (SIC 32) were the most common users of the outright purchase approach for acquiring buildings and land.

Firms in SIC categories 20 and 32 often used new buildings when they began operations in a community. In sum, these firms often purchase or construct new buildings when they start out in a community.

The lease-purchase agreement financed by municipal bonds was used most often by those firms producing rubber and miscellaneous plastic products (SIC 30) and firms producing machinery, except electrical (SIC 35). These types of firms tend to locate in the larger cities of South Dakota, and it is in such cities that this type of building acquisition agreement is most prevalent.

Community services and tax levels

Community service levels are sometimes believed to influence managements' willingness to locate firms in given communities. One variable was included in regression analyses of this study to specifically test the relationship between manufacturing growth and quality of community services. This variable is the fire protection rating, as measured by the rating of the largest city in each county of South Dakota. The fire protection rating was considered as a proxy for general service level quality in each county, since a favorable fire protection rating was believed to be indicative of a relatively high level of community support for public services.

However, the fire protection rating variable did not prove to be significant in explaining why manufacturing grew faster in some counties than in others. It is possible that the high correlation of this variable with the county population variable disguised its effect somewhat. Moreover, the fire protection rating was also highly correlated with several other variables--such as the tax, poverty, and per capita income levels of counties--which may serve as indirect proxies for service levels.

A tax variable, based on relative rates of property taxation in South Dakota counties, was also entered into the equations to test the hypothesis that higher tax levels discourage local manufacturing growth. However, the regression results generally indicated the existence

of a positive relationship between the tax level and manufacturing employment growth.⁸ We thus conclude that local tax levels either are generally unimportant in firm location decisions or are an indication of the level of services of an area. In this latter view, an increased tax level is associated with an increased quantity and quality of public services. Hence, higher taxes--by making improved public services possible--could (up to some point) serve as an industrial attraction!

Most other industrial location studies also have found tax levels to be insignificant in explaining firm location decisions. This suggests that local development officials should carefully consider whether tax breaks for incoming firms are cost-effective locational inducements. The tax revenue generated by a manufacturing firm may be quite considerable for a community, and it often is one of the reasons for seeking a new manufacturing firm in the first place. Why automatically give it up to attract a firm that may be willing to locate in the community anyway?

IV. Summary and conclusions

Can South Dakota continue to benefit from the national trend of manufacturing activity expanding into rural areas? The answer to this question depends on its ability to match the needs of various types of manufacturers with the characteristics and strengths of individual South Dakota communities. The findings of this study concerning industrial location factors should help in this development effort.

Location factors over which communities have little control

Of the factors considered to be beyond community control, the presence of a large population base and post-secondary education facilities are the most significant industrial inducements when growth is measured in terms of absolute change in manufacturing employment.

The preponderance of manufacturing activity--in terms of absolute change in manufacturing employment--locating in the larger population centers of South Dakota

during the 1970's appears at first to be contrary to the notion of manufacturing activity shifting to rural areas. However, we must keep in mind that, with the exceptions of Sioux Falls and possibly Rapid City, most South Dakota towns would be considered rural or nonmetropolitan by national standards. There is much room for growth yet in South Dakota's "larger population centers" before significant diseconomies of size set in.

Most communities with college or vocational education facilities are also associated with sizable population bases. Therefore, firms can generally expect to fill most of their labor needs, in terms of quantity and quality, in such communities.

Previously low levels of female labor force participation, absence of poverty, and lack of prior industrialization proved to be the factors which most influenced percentage change in manufacturing employment in South Dakota counties during the 1970's. Thus, those counties which can still incorporate a good deal of additional female labor into their work forces can be expected to increase manufacturing employment by the greatest percent. A high degree of county underemployment in general was found, in this study, to lead to a higher than average percentage rate of subsequent growth in manufacturing employment.

Contrary to prior expectations, access to the interstate highway system was not found to significantly affect the absolute or percent change in manufacturing employment growth. The widespread use of truck transport, in combination with adequate noninterstate highway access, seems to have offset some of the disadvantages expected for communities not close to the interstate system. Deteriorating highways and ever-increasing fuel costs could change this picture during the 1980's, however. Transportation costs may become a more significant determinant of manufacturing location in the future in South Dakota.

In terms of tonnage, 91% of all goods shipped and materials received by those firms responding to the manufacturing firm survey in this study were transported by

truck. Firms producing chemicals and allied products constituted the only manufacturing group using trucks for less than 80% of their material transport. The use of trucks for shipping goods and receiving materials is fairly uniform among firms from different city size intervals.

Location factors over which communities can exert some control

Overall, actions taken at the community level appear to have little direct influence on manufacturing firms' decisions to locate within particular communities. Responses of manufacturing firms indicated that local development corporations (LDCs) had major influence on the location decisions of only 17% of the firms.

Of the LDCs surveyed, nearly half reported that they had influenced at least one manufacturing firm to locate in the community. The profit-nonprofit status of LDCs did not seem to have any notable bearing on their rate of success in attracting industry.

The most notable difference between the LDCs of larger and smaller cities is in terms of the financial support provided for manufacturing activity. The LDCs from larger communities are more concerned with financing manufacturing activity and have greater financial capacity to directly assist firms.

LDCs and local governments of larger cities often use industrial revenue bonds and local tax incentives to financially assist new firms. Local tax incentives may often be too costly for small cities to effectively utilize. Industrial revenue bonds, while incurring very little risk to the community, are not used very frequently by smaller cities. This may be due to a lack of familiarity on the part of officials from smaller cities with procedures for issuing industrial revenue bonds. Also, the overhead costs associated with issuing bonds may be harder to bear for small towns. Whatever the case, it would seem that this means of financing might be utilized more extensively by

smaller communities to provide financial assistance to new manufacturing firms.

Greater financial capacity was exhibited by LDCs designated as profit than ones designated as nonprofit. Ninety-two percent of the profit LDCs provided financial assistance to firms, compared to 66% in the case of nonprofit LDCs.

Municipal bonds to finance lease-purchase options on the first building and adjacent industrial land of firms were more commonly used in large cities than in small cities. Also, the holding of development sites--either by ownership or by option--for future industrial activity was also most prevalent among LDCs of cities with over 5,000 persons.

Generally, facilities provided at industrial sites did not differ much among various city sizes or between profit and nonprofit LDCs. No particular combination of facilities appeared to be the general key to attracting manufacturing activity. Electricity was the most commonly provided facility, with industrial site rail access the least often provided.

Those firms producing food and concrete products were the ones to most often construct new buildings for their initial operations. Previously used buildings were utilized most frequently by firms producing rubber and plastic products, metal products and transportation equipment, and machinery.

In general, activities considered within the realm of community control seem to have little direct influence on attracting manufacturing activity. For example, lower local taxes--an industrial inducement sometimes considered by communities--was not found in this study to be a likely significant factor in industrial location decisions. If anything, low tax levels may lead to poor local services and discourage industrial growth. Some local actions, such as assisting new firms in finding and gaining access to industrial buildings and sites, may be relatively inexpensive and worthwhile for local development groups, however.

Conclusions

The findings of this study tend to indicate that most individual communities have limited abilities to influence the course of events on local manufacturing development. Local development groups should recognize these limitations and develop strategies based on variables that can be positively influenced or controlled.

For example, communities can maintain inventories of the quantity and composition of their labor pools. Particular attention should be given to identifying potential female additions to the labor force, since many of the light, footloose manufacturing enterprises which enter rural areas typically draw most heavily on the female labor force. Underemployed and "discouraged" workers also need to be identified, since these workers--if given adequate training and employment opportunities--can significantly contribute to economic activity in South Dakota. Labor force inventories can assist potential firms, even though the individual communities have little direct influence on local labor supplies.

Although county access to interstate highways did not prove to be significant in explaining manufacturing employment growth in this study, the heavy reliance on truck transport (91% of both goods and materials tonnage) may take on added significance in the years ahead as increased fuel prices cause transportation costs to make up a greater percentage of firm operating costs. Firms may, in the future, pay closer attention to cost savings associated with locating near the source of raw materials or near the point of final delivery--depending on whether a weight gaining or weight losing production process is involved--than they did during the 1970's period covered by this study. This could lead to the increased practice of processing food products nearer to sources of agricultural production, a likely advantage to South Dakota in general.

How individual communities will fare in terms of manufacturing development in the 1980's and 1990's, however, may depend a great deal on such state and local transportation decisions as what feeder

roads to maintain and in what form to maintain them. Increased road transportation costs may make rail access relatively more important to at least some types of manufacturing development during the remainder of this decade than it appeared to be in the 1970's.

Communities probably best serve their interests by attempting to attract industries which can utilize the facilities and services which the community already has available, rather than by offering additional, costly inducements. Emphasis should be on economic advantages which already exist. Thus, it may often be more important to assist the expansion efforts of already existing firms than to seek out new firms to bring into the community.

In light of the apparently greater success of the larger South Dakota cities in attracting manufacturing firms and the greater use of certain financial devices in those cities, it may be appropriate for local development corporations and local governments of smaller cities to increase their use of selected financial tools in attracting manufacturing firms. Some types of financial incentives, such as local tax breaks for incoming firms, may be too costly for small cities; however, devices such as industrial revenue bonds, which are normally free of risk for local governments, might judiciously be more widely used in South Dakota.

Smaller communities may be at somewhat of a disadvantage in terms of the technical expertise of their personnel in dealing with federal development programs. Local development officials from smaller communities are generally only involved with community development programs on a part-time basis, whereas larger cities may have full-time staff working in this area. Thus, there is a need for state development agencies, planning districts, and the Cooperative Extension Service to conduct workshops for local officials on development options and available financing tools.

Before setting out to attract industry, local people need to assess the probable impacts of industry on their community and on particular segments of the population within the community. They should consider the equity in distribution of potential employment and income benefits expected to be derived from the industrialization effort. They should attempt to anticipate any possible pollution costs, congestion, and crime. There may be added demands for such community services as water, sewer, fire, police, and streets as a result of new firms and their employees and families. Understanding these potential impacts, local people are then ready to work on the industrial potential of their community. The findings of this study can be used as guidance in developing that potential.

Footnotes

- ¹Census reports classify cities with populations of over 50,000 as metropolitan areas. In this report, rural will denote those incorporated places with fewer than 40,000 persons in 1970, which includes all of South Dakota exclusive of Sioux Falls and Rapid City. The terms rural and nonmetropolitan will be used interchangeably throughout.
- ²Thomas L. Dobbs. Planning for rural industries - local employment. EC 722. Brookings: South Dakota State University, Cooperative Extension Service, 1979, p. 3.
- ³Marvin P. Riley and Linda Baer. South Dakota population and net migration, 1970-1980. Population Update Series, C229, No. 4. Brookings: South Dakota State University, Agricultural Experiment Station, 1981, p. 1.
- ⁴Upper Midwest Council. Upper Midwest employment trends. Minneapolis, MN: Upper Midwest Council, 1979, p. vii.
- ⁵Unless otherwise noted, data referred to as from the "manufacturing firm survey" are from this sample of manufacturing firms. Sioux Falls and Rapid City firms were excluded from the survey. Details of the sampling procedure are contained in Appendix A of the thesis by Goeken: Wayne R. Goeken, Factors influencing manufacturing development in South Dakota. MS thesis in economics. Brookings: South Dakota State University, 1980.
- ⁶Goeken, 1980.
- ⁷Harold F. Schaff, Evaluation of selected local development corporations in North Dakota. MS Thesis. Fargo: North Dakota State University, 1978, p. 4.
- ⁸In two of the regression models, a negative relationship between the tax level and manufacturing employment growth was found. Results were not highly significant, however, in regression models with either positive or negative tax-employment growth findings.

Table 1. Abbreviated descriptions of variables used in regression analyses of manufacturing employment change.

DEPENDENT VARIABLES:

Y_1 = ABCHME = absolute change in manufacturing employment (1971-77)
 Y_2 = CHMFEM% = percentage change in manufacturing employment (1971-77)

INDEPENDENT VARIABLES:

Transportation Access

D_1 = ROAD1 = interstate access within adjacent county, 1970
 D_2 = ROAD2 = interstate access within county, 1970

Educational Facilities

D_3 = COLLEGE = four year college or university in county
 D_4 = VOED = post-secondary vocational education facility in county

Labor Force Availability

X_1 = UNEMPLOY = county unemployment rate, 1970
 X_2 = UNDEREMP = underemployment, 1970
 X_3 = ECUTINDX = economic utilization index, 1970
 X_4 = LFPR = total labor force participation rate, 1970
 X_5 = FLFPR = female labor force participation rate, 1970
 X_6 = AGE = age structure, 1970

Economic Structure and Agglomeration Factors

X_7 = POP70 = county population, 1970
 X_8 = PRIORIND = prior degree of industrialization in county, 1970
 X_9 = PPSQ MILE = persons per square mile, 1970
 X_{10} = LOCINDEX = location index
 X_{11} = PERCAPIN = per capita income, 1969
 X_{12} = POVERTY = percent of persons below poverty level, 1970
 X_{13} = FIRE = fire protection rating, 1970
 X_{14} = TAX = taxes, 1970

Table 2. Population and manufacturing employment data for South Dakota counties.

County	Population 1970	Manufacturing Employment 1971	Manufacturing Employment 1977	Absolute Change 1971-77	Percent Change 1971-77
Aurora	4,183	17	13	- 4	- 24
Beadle	20,877	871	981	110	13
Bennett	3,088	18	21	3	17
Bon Homme	8,577	45	309	264	587
Brookings	22,158	277	903	626	226
Brown	36,920	1,741	1,865	124	7
Brule	5,870	43	52	9	21
Buffalo	1,739	7	L	*	*
Butte	7,825	D	82	*	*
Campbell	2,866	19	34	15	79
Charles Mix	9,994	8	23	15	188
Clark	5,515	136	126	- 10	- 7
Clay	12,923	170	254	84	49
Codington	19,140	843	1,334	491	58
Corson	4,994	0	L	*	*
Custer	4,698	160	177	17	11
Davison	17,319	472	809	337	71
Day	8,713	119	108	- 11	- 9
Deuel	5,686	12	30	18	150
Dewey	5,170	5	15	10	200
Douglas	4,569	15	56	41	273
Edmunds	5,548	25	23	- 2	- 8
Fall River	7,505	80	84	4	5
Faulk	3,893	3	L	*	*
Grant	9,005	368	447	79	22
Gregory	6,710	23	43	20	87
Haakon	2,802	39	D	*	*
Hamlin	5,520	7	56	49	700
Hand	5,883	39	59	20	51
Hanson	3,781	17	11	- 6	- 35
Harding	1,855	1	11	10	1,000
Hughes	11,632	100	125	25	25
Hutchinson	10,379	70	157	87	124
Hyde	2,515	0	L	*	*
Jackson	1,531	4	L	*	*
Jerauld	3,310	13	13	0	0
Jones	1,882	1	L	*	*
Kingsbury	7,657	45	125	*	*
Lake	11,456	277	572	295	107
Lawrence	17,453	185	522	337	182

cont., next page

Table 2. continued.

County	Population 1970	Manufacturing Employment 1971	Manufacturing Employment 1977	Absolute Change 1971-77	Percent Change 1971-77
Lincoln	11,761	420	406	- 14	- 3
Lyman	4,060	41	L	*	*
McCook	7,246	90	111	21	23
McPherson	5,022	20	23	3	15
Marshall	5,965	11	178	167	1,518
Meade	17,020	105	336	231	220
Mellette	2,420	0	D	*	*
Miner	4,454	14	85	71	507
Minnehaha	95,209	6,174	6,834	660	11
Moody	7,622	13	66	53	408
Pennington	59,349	2,033	2,602	569	28
Perkins	4,769	33	57	24	72
Potter	4,449	31	38	7	23
Roberts	11,678	25	139	114	456
Sanborn	3,697	54	118	64	119
Shannon	8,198	D	154	*	*
Spink	10,595	31	21	- 10	- 32
Stanley	2,457	5	L	*	*
Sully	2,362	0	L	*	*
Todd	6,606	120	18	-102	- 85
Tripp	8,171	48	43	- 5	- 10
Turner	9,872	22	97	75	341
Union	9,643	140	874	734	524
Walworth	7,842	78	24	- 54	- 69
Washabaugh	1,389	0	0	0	0
Yankton	19,039	1,021	1,381	360	35
Ziebach	2,221	6	0	- 6	-100
South Dakota	666,257	17,064	23,048	5,984	35
U.S.	204,878,000	18,623,000	19,682,000	1,059,000	6

Sources: a) Population data for South Dakota and the individual counties were obtained from William H. Bergman, Bulletin No. 108, Handbook of manpower statistics for South Dakota (Vermillion, South Dakota: University of South Dakota, Business Research Bureau, 1973) pp. 50-209.

b) Manufacturing employment data were obtained from annual computer printouts of employment and income data from the Bureau of Economic Analysis, U.S. Department of Commerce.

c) Data for the United States were obtained from the Council of Economic Advisors and the President, Economic report of the President (Washington, D.C.: U.S. Government Printing Office, January, 1980) pp. 233, 242.

cont., next page

Table 2. continued.

L = Less than 10 persons engaged in manufacturing employment.

D = Manufacturing employment data could not be published due to disclosure problems resulting from an insufficient number of firms engaged in manufacturing.

* = Statistic could not be calculated due to lack of data in one or both of the years of analysis. Thus, these counties are excluded from the regression analysis.

Table 3. Transportation mode for shipping goods and receiving materials: mean percent of volume by each mode for selected SIC (Standard Industrial Classification) categories¹.

SIC Categories	Transportation Mode												Number of Firms
	Shipping Goods (%)						Receiving Materials (%)						
	Truck Owned	Truck not Owned	Rail	Air	Other	Total	Truck Owned	Truck not Owned	Rail	Air	Other	Total	
20 (Food)	43	43	11	2	1	100	34	58	6	2	0	100	25
23 (Apparel)	73	26	0	1	0	100	61	34	2	2	1	100	11
24 (Lumber)	57	39	4	0	0	100	18	65	13	1	3	100	12
26 (Paper)	0	0	100	0	0	100	0	0	0	0	0	100	1
28 (Chemicals)	51	45	0	0	4	100	28	33	24	0	15	100	7
30 (Rubber, Plastics)	37	63	0	0	0	100	17	81	2	0	0	100	7
32 (Stone, Concrete)	80	18	0	1	1	100	48	52	0	0	0	100	9
34 (Metal Products)	31	69	0	0	0	100	25	75	0	0	0	100	4
35 (Machinery)	48	48	0	0	4	100	25	70	4	0	1	100	22
36 (Electrical)	24	59	0	2	15	100	6	93	0	1	0	100	7
37 (Transportation)	42	36	0	3	19	100	30	55	0	1	14	100	12
38 (Instruments)	0	98	1	1	0	100	0	92	8	0	0	100	2
All Categories	48	43	4	1	4	100	30	61	5	*	4	100	119

Source: Manufacturing firm survey

¹The mean percentages have not been weighted by the tonnage shipped by individual firms within the SIC categories. The mean percentages for "All Categories" is weighted by the number of observations from each SIC category.

*Less than 1%.

Table 4. Transportation mode for shipping goods and receiving materials: mean percent of volume by each mode for selected city size intervals¹.

City Size Intervals (population)	Transportation Mode												Number of Firms
	Shipping Goods (%)						Receiving Materials (%)						
	Truck Owned	Truck not Owned	Rail	Air	Other	Total	Truck Owned	Truck not Owned	Rail	Air	Other	Total	
1 = 499	37	44	4	*	14	100	20	63	5	*	12	100	17
2 = 500-999	41	48	5	0	6	100	25	59	11	*	5	100	16
3 = 1000-2499	60	34	2	2	2	100	52	40	7	*	*	100	24
4 = 2500-4999	71	29	*	*	0	100	34	66	*	*	*	100	10
5 = 5000-9999	37	49	8	6	0	100	18	76	6	*	*	100	7
6 = 10,000- 30,000	46	47	5	*	2	100	24	68	3	2	3	100	45
All Intervals	48	43	4	1	4	100	30	61	5	*	4	100	119

Source: Manufacturing firm survey.

¹The mean percentages have not been weighted by the tonnage shipped by individual firms within city size intervals. The mean percentages for "All Intervals" is weighted by the number of observations from each size interval.

*Less than 1%; totals may not add to 100% in all cases, due to rounding.

Table 5. Type of financial assistance reported by LDCs, according to profit-nonprofit status.

LDC Type ²	Of Firms Reported to Have Received Financial Assistance, Percentage Receiving Various Types of Assistance ¹					
	IRB	LTI	LPO	ASSIST	LOAN	OTHER
Profit	26	59	41	48	30	11
Nonprofit	12	10	39	32	24	15
Overall	18	29	40	38	26	13

Source: Local development corporation survey

¹The variable names used in this table for the types of financial assistance refer to:

IRB = Industrial Revenue Bond
 LTI = Local Tax Incentive
 LPO = Lease/Purchase Option

ASSIST = Assist firm in obtaining financing from alternative sources
 LOAN = funds loaned directly from LDC to firm
 OTHER = other type of financial assistance

²Based upon 68 firms reported by LDCs to have received one or more forms of financial assistance and for which type of LDC (profit vs. nonprofit) was reported. Total of percentages across each row exceeds 100 because some firms received more than one type of financial assistance.

Table 6. Various development site attributes reported by local development corporations for firms they had helped attract.

By City Size in Which LDC Located (population)	Percentage of Firms Located on Sites with These Attributes			
	Firm Located on Development Site	LDC Owned Development Site	LDC Had Option on Development Site	Site Was in Zoned Development Area
500	80	80	0	100
500-999	56	19	17	50
1,000-2,499	76	59	33	45
2,500-4,999	55	73	10	82
5,000-9,999	83	83	0	100
10,000+	79	73	13	83
Overall	71	60	16	69

Source: Local development corporation survey

Table 7. Facilities at development site prior to firm location, by 2-digit SIC codes of manufacturing firms.

2-Digit SIC Code of Firms	Percentage of Firms Indicating Each Type of Facility Present at Development Site							Number of Firms
	Treated Water	Sewer	Rail	Paved Road	Elec- tricity	Gas	Building	
20 (Food)	31	50	38	46	69	31	42	26
23 (Apparel)	61	46	8	69	92	54	31	13
23 (Lumber)	50	67	42	58	83	42	33	12
26 (Paper)	0	0	100	100	100	0	0	1
28 (Chemicals)	43	57	43	57	86	43	57	7
30 (Rubber, Plastics)	57	71	29	57	100	43	57	7
32 (Stone, Concrete)	54	27	54	46	64	18	18	11
34 (Metal Products)	40	60	20	60	60	60	60	5
35 (Machinery)	65	61	35	70	96	61	65	23
36 (Electrical)	71	57	0	57	86	14	86	7
37 (Trans- portation)	17	33	17	67	75	42	50	12
38 (Instruments)	50	100	50	50	100	100	50	2
Total	48	52	32	59	82	42	48	126

Source: Manufacturing firm survey

Appendix A Confidential survey of South Dakota manufacturing firms

Firm Name _____ Phone _____

Address _____

City _____ Zip Code _____

1. (a) What year did your firm begin production operations in the present community? _____
(b) At that time, was this a take-over of a previous firm's operation in the community or was it a new operation in the community? Check one:
 Take-over of a previous operation New operation

2. Please list the major products your firm produces at this location: _____

3. (a) What is the current (1979) total employment of your firm in this community? _____ employees
(b) Is there much seasonal variation to employment in your firm here? Yes No
(c) What was the approximate average monthly employment of your firm in this community last year (1978)? _____ employees

4. Factors Influencing Firm's Location Decision

- (a) Did the activities of a local development corporation in the community where your firm is located have an influence on the firm's decision to locate in South Dakota rather than some other state? Check one:
 Little or no influence Some influence Major influence

- (b) Did the activities of a local development corporation in the community where your firm is located have an influence on the firm's decision to locate in this community rather than other communities in South Dakota? Check one:
 Little or no influence Some influence Major influence

- (c) What type of building did your firm occupy at the time it first located in this community? Check one:

- (1) A building previously used by another firm or occupant _____
(2) An already constructed but as yet unused speculative building _____
(3) A new building constructed specifically by or for your firm _____
(4) Other (please specify) _____

- (d) What type of purchase or rental agreement did your firm use for the building and adjacent industrial land at the time of initial location in this community? Check one:

- (1) Outright purchase _____
(2) Ordinary lease _____
(3) Lease-purchase agreement to pay off building financed with municipal revenue bonds _____
(4) Other type of lease-purchase _____
(5) Other (please specify) _____

- (e) Prior to your firm's final decision to locate in this community, which, if any, of the following facilities already existed at the industrial site (as far as the industrial site property line, that is, and not necessarily all the way to the building)? Check each that existed:

- | | |
|-------------------------|-----------------------------|
| (1) Rail _____ | (5) Sewer _____ |
| (2) Gas _____ | (6) Building _____ |
| (3) Electricity _____ | (7) Hard surface road _____ |
| (4) Treated water _____ | (8) Other (specify) _____ |

- (f) Were there any special considerations related to water supply involved in the firm's decision on which South Dakota community to locate in? Yes No

If Yes, please explain: _____

5. Details of Firm's Water Use

(a) What is the source(s) of water used by your firm? Please estimate the amounts drawn from each source in 1978 by the plant and indicate the major use of water from each source:

Source	Approximate amount drawn in 1978, in gallons or cu. ft. (indicate which)	Major use in the plant (production purposes? cooling? drinking & sanitation? fire protection? other?)
Municipal system		
Private well(s)*		
Other (please specify; e.g., rural water system)		

*Exclude wells used essentially as storage for municipal or other water.

(b) If more than one source is used, briefly indicate why: _____

(c) If water is used for production or cooling purposes:
 (1) Does water recycling take place in the plant? Yes No
 (2) What kind of water quality is required for production or cooling?

 (3) Does the firm have to treat to get this quality? Yes No
 (4) If treatment required, of what nature? _____

(d) If municipal system is used at all for plant water supply and water line did not already reach edge of the industrial site at the time firm located here (see 4,e on previous page):
 (1) How long was the needed line extension? _____ ft.
 (2) Who paid for the water line extension? Check one:
 Municipal water authority paid for.
 Cost was shared by firm and municipal water authority or other public body.
 Cost was paid for entirely by firm.
 Other arrangement (please specify): _____
 (3) If costs were shared, what portion was born by the firm? Check one:
 Less than 30% of the costs of extension.
 30% - 60% of the costs of extension.
 More than 60% of the costs of extension.

(e) For the purposes of firm protection:
 (1) Does the plant have a sprinkler system? Yes No
 (2) Does the plant have its own water tower? Yes No
 (3) If there are problems with water supply for purposes of fire protection, please note them: _____

(f) Has the firm encountered water problems of any kind that might hinder plant expansion in this community? Yes No
 If Yes, please specify nature of problem(s): _____

6. Details of Firm's Transportation

(a) Listed below are principal methods of transportation generally used in shipping manufactured products and in receiving materials from suppliers. Please indicate the approximate percentage (%) of your tonnage shipped by each method during 1978.

	Transportation Method					Total
	Truck*		Rail	Air	Other	
	Owned by Firm Itself	Not Owned by Firm Itself				
(1) Products shipped by your plant: % by each method						100%
(2) Materials received at your plant from suppliers: % by each method						100%

*Ignore truck deliveries of 10 miles or less to or from other means of transport.

(b) For each method of transportation used, indicate approximate frequency of delivery. Use the following codes:

D = Daily M = More often than weekly, but not daily W = Weekly
 L = Less often than weekly, but on some regular basis

Note: Indicate NA (not applicable) for those methods accounting for less than 5% of volume in each row.

	Transportation Method				
	Truck*		Rail	Air	Other
	Owned by Firm Itself	Not Owned by Firm Itself			
(1) Products shipped by your plant: delivery frequency					
(2) Materials received at your plant from suppliers: delivery frequency					

*Ignore truck deliveries of 10 miles or less to other means of transport.

(c) Has the firm encountered transportation problems of any kind that hinder delivery of the firm's products or of materials it purchases, or are particular problems anticipated? Yes No

If Yes, please specify nature of problem(s): _____

Respondent's name and title: _____

Please return questionnaire in the enclosed stamped, self-addressed envelope to:

Rural Industrial Development Project
 Economics Department
 South Dakota State University
 Brookings, SD 57007

Local Development Corporation Name _____
 Address _____ Phone _____
 City _____ Zip Code _____

1. What year was your development corporation established in this community? _____
 Is the development corporation a profit or non-profit organization?
 Profit Non-Profit

2. Has your local development corporation been successful in influencing any manufacturing firms to locate in the community since 1970? Yes No
 If no, proceed to question number 5.
 If yes, please specify up to three firms which the development corporation has recently helped to locate in the community and complete the table:

Firm Name	Did the firm locate on a specially designated development site		Did your local development corporation own or have an option to buy the site				Was the site within a formally zoned industrial area	
	Yes	No	Owned		Option to buy		Yes	No
			Yes	No	Yes	No		
A. _____								
B. _____								
C. _____								

Note: For the remainder of the questionnaire, the firms and the sites which they located on will be referred to by the letters A, B or C associated with their names in question 2. (It is possible that two or all three firms are on the same development site. If so, note that here: _____)

3. Which of the following facilities were provided at the development site(s) prior to the firm's decision to locate there (facilities already at the site or passing by the site and ready to be hooked on to)? Check appropriate category(s) for each site:

Firm	Treated Water	Sewer System	Rail Service	Paved Road	Electricity	Gas	Building
Firm A. _____							
Firm B. _____							
Firm C. _____							

4. Has your local development corporation aided in financing any of these firms?
 Yes No If yes, check the financial assistance alternatives used for each firm:

Firm A	Firm B	Firm C	Financial Assistance Alternatives
			industrial revenue bonds
			local tax incentives (e.g., tax moratorium)
			lease-purchase option on building and land
			assistance to firm in obtaining financing from other sources, such as commercial banks or the Small Business Administration
			funds loaned directly from development corporation to firm
			other (please specify: _____)

- 5.(a). Does your development corporation currently own or have an option to buy a development site(s)? Yes No
 (b). If yes, the site(s) is/are (check one):
 owned by the development corporation.
 held on option by the development corporation.
 controlled by a combination of ownership and option agreements.
 (c). If yes, approximately how many additional firms could locate on the site(s) controlled by the development corporation? _____ firms

6. Which of the following functions of a local development corporation do you view as being the most important in attracting industry? Rate the following factors from 1 through 8, with 1 being the most important.

- ___ provide managerial and engineering counseling services of a technical nature
- ___ promote good business climate and serve as liason between industry and various community groups
- ___ conduct economic surveys of the area (e.g., labor surveys)
- ___ make inventories of all available industrial land and buildings in the area
- ___ play direct role in making industrial sites and buildings available to firms-- by development corporation options, ownership, lease-purchase arrangements, etc.
- ___ directly assist in financing
- ___ assist firms in obtaining financing from other sources, such as commercial banks or the Small Business Administration
- ___ give tours of area to prospective firms

Respondent's name and position: _____

Please return questionnaire in the enclosed stamped, self-addressed envelope to:

Rural Industrial Development Project
 Economics Department
 South Dakota State University
 Brookings, SD 57007