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The impact of local development organizations on the industrialization of rural Iowa communities

Michael Dean Dahlke
Iowa State University

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124

The impact of local development organizations on the
industrialization of rural Iowa communities

by

Michael Dean Dahlke

A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
MASTER OF SCIENCE

Major Subject: Economics

Signatures have been redacted for privacy

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
The Problem	1
Objectives of the Study	4
THE DATA	6
The Universe	6
The Questionnaire	10
Identification of the Respondent	12
LOCAL INDUSTRIAL DEVELOPMENT ORGANIZATIONS IN RURAL IOWA COMMUNITIES	16
The Characteristics of Iowa's Rural Industrial Development Organizations	16
Industrial Promotion Activities of Iowa's Rural Development Organizations	19
Industrial Development Leadership	42
Indices Which Summarize the Characteristics of Local Development Organizations	48
THE ENVIRONMENT IN WHICH IOWA'S RURAL INDUSTRIAL DEVELOPMENT ORGANIZATIONS FUNCTIONED	53
Local Citizen Support	53
City Government Support of Industrial Development	57b
Iowa Development Commission Support of Rural Industrialization	60
Local Industrial Facilities	62
Local Living Facilities	70
Indices Which Represent the Local Environment	83
Measures Which Reflect the Locational Situation of Iowa's Rural Communities	87
THE INDUSTRIALIZATION EXPERIENCED BETWEEN 1968 AND 1970 BY IOWA'S RURAL COMMUNITIES	92

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New Business Locations in Iowa's Rural Communities	92
The Expansion of Old Businesses in Iowa's Rural Communities	101
Business Failures in Iowa's Rural Communities	108
The Absolute Employment Effect of Industrialization	110
The Relative Success of Industrial Development	116
Analysis of the Variability in Industrial Development Success	123
CONCLUSION	136
Review of the Findings	136
Suggestions for Further Study	143
BIBLIOGRAPHY	146
ACKNOWLEDGMENTS	147
APPENDICES	148
Appendix A: The Questionnaire	149
Appendix B: The Telephone Screening Sheet	169
Appendix C: List of Towns Surveyed	172
Appendix D: Computation of Indices	178

INTRODUCTION

The Problem

For centuries, rural towns have functioned as the focal points of social and economic activity for the agricultural regions which surround them. They have traditionally been the location of the wholesale houses of farm and ranching inputs, the warehouses and market places for farm output, the shopping centers for personal necessities and luxuries, and the meeting houses for social and political exchanges. In the past, these towns have depended on the land to provide work for people and on the families who till nearby fields to provide a source of demand for local goods and services, a source of revenue for local government income, and a source of citizenry for local social action. During recent times, however, technological advances and accompanying sociological changes have fundamentally affected the foundations on which rural communities are built.

One area in which much progress relevant to rural towns has occurred is the field of agriculture. Throughout the twentieth century, embodied and disembodied technological advances have combined to alter the production functions of this industry in America and have thereby shifted the relative productivities of the various farm inputs. These changes have been of a labor-saving, capital-land-entrepreneurship-using type. In Iowa, the results of this transformation are reflected in: 1) an increase in the average size of a farm from 158.3 acres in 1930 (8, p. 7) to 239.1 acres in 1969 (9, p. 1); and 2) a decrease in the number of farm operators from 214,928 in 1930 (8, p. 7) to 140,354 in

1969 (9, p. 1) together with a corresponding reduction in the number of farms. Several studies indicate that optimum resource allocation in the farm sector, given the present technology, can be achieved only if these trends continue (6 and 8).

The continuing exodus of farm families from rural areas drains away the traditional source of demand in agrarian service centers. Faced with a shrinking market, some local merchants must close their shops and join the outward tide of migrants. The magnitude of this flow is indicated by the fact that Iowa's nonmetropolitan counties experienced a net out migration of nearly 387,000 residents between 1950 and 1970 (4, p. 49 and 14, p. 24). This depopulation of the hinterland, as Clark points out, "...slows the development of social, political, and economic institutions requiring residents" (2, p. 29). Further, it adds to the burden on public facilities in urban areas but contributes to their underutilization in rural regions.

Technological changes in agriculture need not be detrimental to all rural businessmen, of course. Those who sell the bearers of the new technology, e.g. machinery or fertilizer, and those merchants who through superior management or stubbornness survive while their neighbors fail, might eventually expect to face an adequate market. However, advances in the field of automotive transportation have mitigated the advantages of increasing product demand and reduced local competition for many entrepreneurs.

Great increases in the quantity and quality of roads coupled with a proliferation of powerful automobiles and trucks have had a considerable impact on the lives of most Americans thus far in this century. These

improvements have enabled rural residents to sell farm output and shop for business and personal needs in places at great distance from their homes. Such capabilities have, in turn, increased competition for local income earned in farming areas, caused additional business failures, and thereby contributed to further population decline in these regions.

Since achievement of a more optimum factor mix in agriculture will undoubtedly require the continuing release of people from farm employment, and since considerably more road improvement is undoubtedly planned by state and county highway departments, the roles played by this country's rural communities must change if they are to survive and prosper. Some of these towns which are located near growing metropolitan areas will develop as bedroom communities for city workers who wish to escape urban problems.

The majority of farm towns, being less strategically located, can expect to add few residents to their populations and only small amounts to their local income base by acting as suburbs to central cities. These communities will need to offer alternative nonfarm employment opportunities to the labor released from the surrounding land. However, the lack of a sizable indigenous market often coupled with relatively inadequate or unattractive public, industrial, and living facilities has made it difficult for many of these towns to attract new industry.

Recognition of these needs and problems has prompted many of Iowa's rural communities to establish organizations whose aims are to encourage the creation of local nonfarm jobs. The overall goal of these development organizations is to promote local "industrialization" which for the purposes of this report is defined as the process of increasing the

income producing base of an area by establishing new nonfarm business and/or expanding old nonfarm businesses. Toward this end, these groups are normally expected to find companies which are interested in opening new facilities, to persuade them to locate in or near their particular town, and to assist the managers of these firms in acquiring needed plant sites, buildings, municipal services, and local labor. In addition, they are supposed to help existing employers expand their operations if market conditions seem to justify such a move.

Objectives of the Study

While many of Iowa's local development organizations have been in existence for more than a decade, there seems to have been no systematic effort to examine their activities. In view of this and the importance of industrialization to the welfare of this state's rural communities, a study of these groups was initiated by the Agriculture Experiment Station of Iowa State University. The ultimate goal of this project was to identify steps rural communities might take to increase the effectiveness of their industrial development efforts. The more immediate objectives of the study reported here were 1) to identify and describe:

- a) the attitudes of the citizens of Iowa's rural towns relevant to industrial development;
- b) the activities of the local development organizations in Iowa's rural towns;
- c) the characteristics of local development leaders in Iowa's rural towns;
- d) the assets and characteristics of Iowa's rural towns;
- e) the industrialization experienced by Iowa's rural towns.

and 2) to analyze:

- a) the differences in the level of local industrial promotion activities among Iowa's rural towns;

- b) the variability in the expansion of local employment opportunities through industrial development in rural towns.

THE DATA

The Universe

In order to determine the elements of the universe to be studied, a working definition of a "rural community" was developed. When the term "rural" is used to describe a town, the implication is that the subject is "small", "remote" and is characterized by an agriculturally oriented economy. Having less than 8,500 residents at the time of the 1970 census was considered being "small" for the purposes of the study, and being located more than twenty miles from any city with 40,000 or more inhabitants was considered being "remote". It was assumed that Iowa communities which were this small and this remote would have local economies which were based largely on businesses servicing nearby farms.

Since one of the primary objectives of the study was to investigate the contribution local industrial development organizations made toward the industrialization of Iowa's rural communities, the second step taken in defining the population to be surveyed was to identify the towns which had such groups. A list was obtained from the Iowa Development Commission (I.D.C.) which identified all the local organizations it knew to be active in industrial promotion work. This list was compared with one provided by the Ames Chamber of Commerce which cited all towns in the state having local Chambers or Chamber affiliates; a third group of communities was identified--those reported to have Chambers, but no development organization. A short questionnaire was sent to the leaders of these Chambers asking if there existed any organized effort in their

towns to encourage and promote expansion of local employment opportunities.

Based on the I.D.C. list and a 45 percent return of the mail questionnaire, it was determined that: 1) 23.1 percent of the towns with less than 1,600 inhabitants per the 1960 census (11, pp. 62-69) have some type of development organization; 2) 88.7 percent of the communities with 1,600 to 2,499 residents have associations whose aim is to broaden their town's employment base; 3) and 99.0 percent of the cities with 1960 populations greater than 2,500 have groups which encourage local industrialization. Because few very small communities, i.e. those of 1,599 or less, appeared to have development organizations or much inherent growth potential, the lower limit of town population for the survey universe was set at 1,600.

The population from which data was gathered might then be described as all towns with 1970 populations between 1,600 and 8,499 in non-metropolitan counties of Iowa which have some form of local development organization.¹ One-hundred-thirty communities met the population criteria according to the 1970 preliminary census reports, but twelve of these failed the isolation criterion and three more had no known development group. Thus, the universe consisted of 115 towns which are indicated on the map in Figure 1. On the average, these communities had 3,708 residents in April of 1970 and their populations had grown at the rate of 5.7 percent during the decade of the 1960's.

It seemed desirable for some analytical purposes to divide the

¹Because air distance from large cities was the actual measure of remoteness, four exceptions to the "nonmetropolitan county" criteria were included in the universe. They were: Cascade (Dubuque County), Dyersville (Dubuque County), La Porte City (Black Hawk County), and Mount Vernon (Linn County).

towns surveyed into groups according to their sizes. Therefore, three population classes were defined: Class 1 consisted of 47 communities having between 1,600 and 2,499 residents, with a mean population of 2,103;¹ Class 2 consisted of 35 communities having populations between 2,500 and 4,499, with a mean population of 3,394; Class 3 consisted of 33 communities having populations between 4,500 and 8,499, with a mean population of 6,325. As Table 1 indicates, the average rate of population growth during the 1960's was virtually the same for each class.

Table 1. Distribution of the index of 1960-70 population change, by town size

Population change index ^a	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
88 to 100	16	34.0	15	42.9	11	33.3	42	36.5
101 to 109	16	34.0	9	25.7	12	36.4	37	32.2
110 or more	15	32.0	11	31.4	10	30.3	36	31.3
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	105.7		105.8		105.7		105.7	

$$\text{ap.C.I.}_j = \frac{1970 \text{ population of town no. } j}{1960 \text{ population of town no. } j} \times 100.$$

¹All classification was based on the 1970 preliminary census reports (12, pp. 3-4).

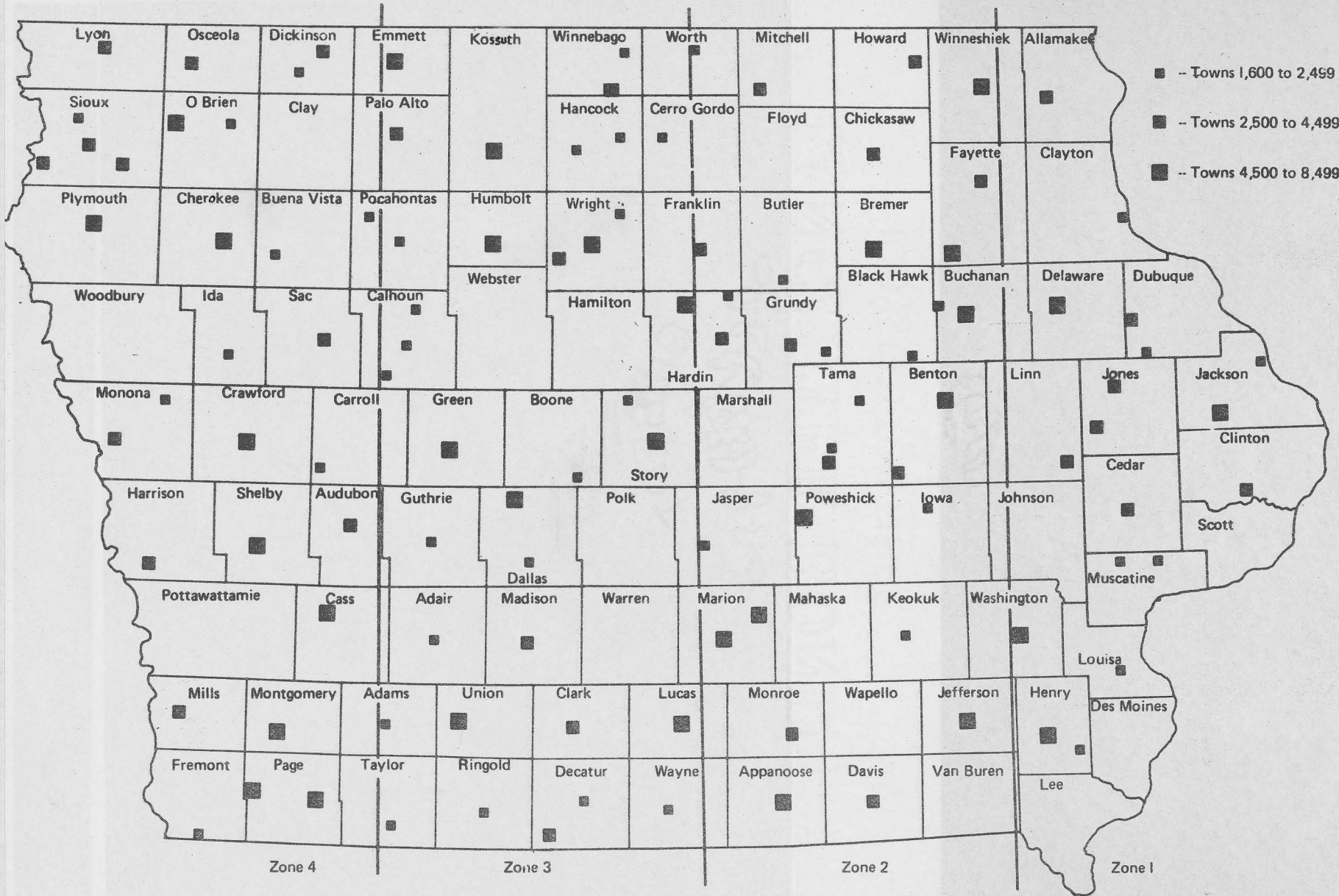


Figure 1. Location of the towns included in the 1970 Iowa rural industrial development survey

The Questionnaire

Because of the limited number of elements in the universe, it was decided that information should be gathered about: 1) the activities of local development organizations in each town; 2) the progress of local industrialization in each town; and 3) the characteristics of local industrial and living facilities in each town. A questionnaire composed primarily of closed-end questions about these subjects was prepared and administered in several communities bordering the universe, i.e. towns with populations either slightly smaller than 1,600 or somewhat larger than 8,500. The individuals contacted as the respondents in these test cases were the local development leader cited in the Iowa Development Commission mailing list.

From the pre-survey tests, several shortcomings of the original questionnaire and survey design were identified. First, the local organization leaders listed by the I.D.C. did not necessarily currently hold the stated offices, and more importantly, the listed officials were not necessarily the organization members who were most knowledgeable about their town's industrial development efforts. Second, there were often several groups actively working to further industrialization in a town; to enumerate only one group's efforts could seriously understate the total community input into industrial promotion work. Third, accurate income and expenditure information was difficult, if not impossible, to obtain because of the informal nature of many development groups. Fourth, a true estimate of the local input into industrial development work was not obtainable by concentrating on the cash outlays for various activities. Finally, tightly knit questions about organization activities and community

characteristics sometimes forced the respondent to think about these things in unfamiliar ways and thereby resulted in delayed interviews and questionable answers.

In light of the discoveries made during the pre-test phase of the survey, several adjustments were made in the questionnaire and survey design. First, a pre-interview screening process was developed to better identify the local individuals most knowledgeable about their towns' characteristics and their organizations' activities; this procedure is discussed below. Second, because of a general lack of formal records, the respondents were the sources of facts on local industrialization; because detailed information was needed, the time frame for study was limited to the 1968 through 1970 period in order to minimize memory bias and facilitate the comparison of answers. Third, the format of the questionnaire was changed so that the activities of several groups could be recorded simultaneously and the questions were revised to make them basically open-ended in nature.

The final version of the questionnaire which was administered in the field is included in Appendix A and contained the following sections:

1. Industrial development preferences - asked for data about community attitudes toward and base of support for industrialization efforts;
2. Considerations in business location - asked how important development organization leaders felt various factors were to businessmen when they made locational decisions;
3. Organized industrial promotion efforts - asked for information about groups involved in the local effort and about the activities in which they were engaged during 1968-1970;
4. New business enterprises in the community - asked the respondent for a report on all new businesses employing three or more people that started operations during 1968-70, including the extent to

which development organizations assisted in their location;

5. Expansion of old business firms - asked for data concerning all firms which expanded their operations by the addition of three or more employees during 1968-70, and the extent to which development groups assisted them;
6. State and local government support of industrialization - asked about any special municipal services which were provided to new and/or expanded firms and about help received from the Iowa Development Commission;
7. Firms going out of business - asked for an accounting of all firms which were liquidated in the town during the 1968-70 period and an estimation of the work-finding experience of the employees who lost their jobs;
8. Personal activity - asked for information about the characteristics and experience of the local development leaders;
9. Selected community characteristics - asked for information about characteristics of the towns relevant to their potential for attracting new industry.

Identification of the Respondent

Because of the quantity and detail of the information desired, heavy reliance was placed on the knowledge and recollection of the respondent. Therefore, every effort was made to insure that the interviewee was the individual most knowledgeable about the community's industrialization efforts and results. A telephone "screening sheet", shown in Appendix B, was prepared for the interviewer to use when making their initial contact with the officer cited in the Iowa Development Commission's mailing list. The answers to the questions on this form were meant to: 1) acquaint the person called with the purpose of the study; 2) determine if the party called currently held the office indicated by the I.D.C.; 3) forewarn the person contacted of the detailed nature of the information sought; and 4) give the individual called an opportunity to direct the enumerator

to another, presumably more qualified, citizen who might be interviewed. Other local citizens were permitted to attend an interview if the respondent felt more accurate data could be obtained as a result of their presence.

This telephone quizzing obviously did not guarantee that the best informed local person would be designated as the town's respondent; the first man approached could have felt obliged to accept the task of answering the questionnaire even though he was not eminently qualified to do so. However, it seemed preferable to use the above procedure rather than simply assuming the officer listed by the I.D.C. was the person that should be interviewed.

As a result of the telephone screening, 115 individuals were designated as respondents for the different towns in the universe. While at least one of these individuals was affiliated with each of the eight different kinds of development groups shown in Table 2, 92 percent of those interviewed were officers in development corporations, profit and nonprofit, or Chambers of Commerce. The development organizations in two communities chosen for study were found to be inactive, but businessmen presently interested and formerly active in industrialization efforts were found as respondents for their respective towns. Table 3 shows the offices held in development groups by the respondents.

Table 2. Development organization affiliation of respondents

Type of Organization	Number	Percent
Nonprofit development corporation	63	54.8
Profit development corporation	21	18.3
City commission or committee	1	0.9
Commercial or development club	4	3.5
Chamber of Commerce	22	19.0
Town Council	1	0.9
Regional development organization	1	0.9
Private business ^a	2	1.7
Total	115	100.0

^aFrom towns with inactive development groups.

Table 3. Development organization offices of respondents

Office	Number	Percent
President	46	40.0
Manager/Executive Secretary	16	13.9
Vice President	7	6.1
Secretary	14	12.2
Treasurer	1	0.9
Secretary-Treasurer	7	6.1
Board of Directors member	8	7.0
Past officer	7	6.1
None ^a	2	1.8
Total	115	100.0

^a Respondents from towns with inactive organizations.

LOCAL INDUSTRIAL DEVELOPMENT ORGANIZATIONS IN RURAL IOWA COMMUNITIES

The Characteristics of Iowa's Rural Industrial
Development Organizations

As a first step in obtaining a complete picture of the organized industrial promotion efforts in Iowa's rural communities, each respondent was asked to list all the local groups he felt had been active in this work during the 1968-70 period. This procedure was used to ascertain the number and types of organizations attempting to further industrialization in the communities studied; pre-test of the survey had shown these characteristics could vary considerably among towns. Those interviewed were then instructed to rank the groups they identified from "most active" to "least active" (rank 1 through n). From these rank assignments, the relative level of overall involvement of different types of organizations was determined.

A composite list from the 115 respondents contained the names of 284 organizations active in industrial development. Two communities reportedly had no active groups and four towns had five groups. The mean number of organizations listed per town over all communities was 2.5; respondents from Class 2 towns on the average believed more groups were active in their towns than did those from either Class 1 or Class 3 communities--2.7 compared to 2.3 and 2.5 respectively. Table 4 below shows the types of development organizations identified from the respondents' listings, the number of each kind found in the state's rural communities and the number receiving various activity rankings (Rank 1 = most active).

While most of the categories in the table are self-explanatory, two organizational types need a brief discussion. First, the areas served by most of the "regional development organizations" were fairly small, ranging from two or three towns in close proximity to one another, e.g. Tama-Toledo, to perhaps a whole county. Second, organizations classed as "Private Business" consisted mainly of local public utilities, land and real estate developers, or local manufacturers. The efforts of these groups on behalf of a particular town were included as part of the total community input in order to insure that all sources of variability in the level of local activity would be reflected in the measurements.

As Table 4 shows, Chambers of Commerce were cited most often as being active to some degree in local industrialization efforts and were ranked "second most active" (Rank 2) more often than any other type of development organization. Approximately 30 percent of the groups listed by respondents from Class 1 towns (populations between 1,600 and 2,500) and Class 2 towns (populations between 2,500 and 4,500) were Chambers while 40 percent of the organizations named by Class 3 communities (populations between 4,500 and 8,500) were of this type.

Nonprofit and profit development corporations were second and third respectively in the frequency of listing and taken together accounted for 77 percent of the groups ranked "most active". The proportion of respondents reporting the former type of corporation active in their community declined slightly as town size increased and the percentage reporting the latter kind rose somewhat with community size.

Well over half of the development organizations identified by this study had been active in industrial promotion activities for more than a

Table 4. Ranking of development organizations according to degree of activity in encouraging industrialization

Type of Development Organization	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Total						
	No.	%	No.	%	No.	%						
Nonprofit development corporation	62	54.9	8	7.9	2	4.2	1	5.6	0	0.0	73	25.7
Profit development corporation	25	22.0	6	5.9	6	12.5	0	0.0	0	0.0	37	13.0
Jaycees	0	0.0	1	1.0	10	20.7	0	0.0	0	0.0	11	3.9
City commission or committee	1	0.9	1	1.0	1	2.1	0	0.0	0	0.0	3	1.1
Commercial or development club	5	4.5	9	8.9	1	2.1	0	0.0	0	0.0	15	5.3
Chamber of Commerce	17	15.0	68	67.3	6	12.5	3	16.7	0	0.0	94	33.1
Local civic or service organization	0	0.0	2	2.0	6	12.5	5	27.8	2	50.0	15	5.3
Town council	0	0.0	4	4.0	12	25.0	3	16.7	0	0.0	19	6.7
Regional development organization	3	2.7	1	1.0	2	4.2	2	11.0	1	25.0	9	3.2
Private business	0	0.0	1	1.0	2	4.2	4	22.2	1	25.0	8	2.8
Total	113	100.0	101	100.0	48	100.0	18	100.0	4	100.0	284	100.0
No rank "n" group	2		14		67		97		111		291	
Total	115		115		115		115		115		575	

decade. On the average, organizations had been engaged in encouraging industrialization for a period of about twelve years; organizations in Class 2 towns with a mean years of involvement of 10.8 were a bit less experienced in this area than those of either Class 1 or Class 3 communities with a mean years of involvement of 12.4 and 13.3 respectively.

Six basic sources were used by development groups in financing efforts: 1) "dues from members" (used by 41.0 percent of the organizations); 2) "proceeds from stock sale" (21.6 percent); 3) "donations from local citizens" (14.4 percent); 4) municipal revenue (7.2 percent); 5) "money-making projects" (2.2 percent); and 6) "income from property sale or lease" (0.7 percent). The remaining thirty-six organizations employed some combination of the above methods to obtain revenue for operations. There was, of course, a correlation between the organizational form of a group and its method of financing, e.g. Chambers of Commerce relied on dues, town councils depended on municipal revenues, and non-profit development corporations sold stock. Therefore, 55 percent of the organizations ranked "most active" (Rank 1) depended on stock sales alone or in combination with other means to provide working capital, and 71 percent of the Rank 2 groups were financed with dues from members.

Industrial Promotion Activities of Iowa's Rural

Development Organizations

Advertising activity

One well known activity of groups at all levels of the industrial promotion trade is advertising. This type of work involves two types of effort: 1) composing and placing ads in conventional mass media

instruments e.g. newspapers, and 2) mailing out and handing out specially prepared brochures, e.g. industrial opportunity studies. The advertisements resulting from either kind of effort are meant to catch the interest of business decision makers and induce them to inquire about the profitability and desirability of locating business facilities in a particular area.

Because of limited resources, local development organizations in rural communities cannot generally mount national promotional campaigns. Therefore, they must rely upon third parties, e.g. the Iowa Development Commission or a railroad company, or upon general economic factors, e.g. closeness to major output markets, to sell the advantages of some geographic area - the eastern one-third of Iowa for example. Their advertising may be employed to focus the interest of company officials on particular towns in that region during the site selection process.

As noted above, there are two basic types of promotional advertising; the first kind listed will be designated "media advertising" for this report. Two groups of questions concerning organized advertising activity were put to each respondent. The first set, results of which are summarized below, was aimed at discovering: 1) to what extent media advertising was used by Iowa's rural communities; 2) which groups were engaged in this work; 3) what media instruments were utilized by these organizations; and 4) how much of the community promotional resources were allocated to media advertising. From the answers to the second set of questions, which are summarized below, it was hoped that characteristics 1 through 4 could be determined for mass distribution advertising. However, the types of material distributed rather than the media instruments used were of interest

in the second case.

Media advertising activity Eighty-two of the respondents, 71 percent of those interviewed, reported that during the 1968-70 period, at least one of the development organizations in their communities had purchased some advertising space in newspapers or magazines and/or time on radio or television for the purpose of creating interest by firms in locating or expanding business facilities. Small towns were less likely to advertise than large towns; sixty-four percent of the towns in population Class 1 had advertised their industrial opportunities compared to nearly 69 percent of the Class 2 towns and almost 85 percent of the Class 3 towns.

The development organizations most frequently involved in media advertising activities by themselves were nonprofit corporations and second most frequently involved were local Chambers of Commerce. Generally, development corporations, (profit and nonprofit), and Chambers acting separately, or in cooperation with one another, placed 89 percent of all the ads. Within each population class, this trend was repeated, i.e. some combination of development corporations and Chambers were responsible for a sizeable proportion of this kind of activity. Other types of groups which had done some media advertising during the 1968-70 period were city commissions/committees, commercial/development clubs, town councils, and private businesses.

Newspapers carried most, 77 percent, of the advertisements sponsored by local development groups. National papers were used in 55 percent of the cases reported and local papers were utilized in 22 percent of the

cases.¹ Usually, the newspaper ads were small; 47 percent of the groups using this media had purchased one-quarter of a page or less during the three year study period. Less than ten percent bought more than one page during this time period, and most of these large blocks of space were purchased in local papers.

Another popular media, particularly among Class 2 towns, was radio which carried 9.6 percent of the ads placed during 1968-70. Most of the stations which broadcast the ads were local and the number of industry leaders reached via this route would likely be small. Television, magazines, trade publications, and billboards also were used to carry some promotional messages.

From Table 5 it can be seen that, on the average, development organizations spent \$425 per town for advertising during the 1968-70 period. Those in large communities, however, spent on the average \$623 for space and/or time. This was over one-and-a-half times the amount spent by those in Class 2 towns and nearly twice as much as the expenditure by organizations from Class 1 communities.

Since the distribution of total expenditures was skewed to the right, i.e. over fifty-five percent of the towns fall in the first two expenditure classes, the median is probably a better mark of the level of central tendency. The median of each population class, and for all communities, was considerably less than the corresponding means. Small towns had a higher median than middle-sized towns, whereas an opposite relation was

¹A national paper was defined as one with a circulation the size of the Des Moines Register-Tribune or larger.

Table 5. Distribution of total expenditures on advertising space and/or time by development organizations, 1968-70, by town size

Dollars	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	17	36.2	11	31.3	5	15.1	33	28.7
\$1 to \$249	12	25.5	13	37.1	6	18.2	31	27.1
\$250 to \$499	6	12.8	2	5.8	7	21.2	15	13.0
\$500 to \$999	7	14.9	5	14.3	9	27.2	21	18.2
\$1,000 to \$1,499	4	8.5	3	8.6	2	6.2	9	7.8
\$1,500 or more	1	2.1	1	2.9	4	12.1	6	5.2
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	\$338		\$396		\$623		\$425	
Median	\$147		\$136		\$264		\$209	

exhibited by the means of these two classes. This conflict of results occurred because the maximum amount spent by a Class 2 community, which was considered when calculating group averages, was nearly \$600 more than the maximum expenditure by a Class 1 town.

Mass distribution advertising activity The unit under discussion in this section should be made clear. A mass distribution advertising "item" was defined as any piece of material of a certain description which was distributed by a local development group for the ultimate purpose of stimulating nonfarm employment growth. A town received credit for each item with distinctly different content distributed by one of its organizations even though some were of the same general type. For example,

if a Chamber of Commerce sent out two maps, one showing local recreational areas and another showing available industrial sites, the group's community would be credited with disseminating two items.

Development organizations in 79 percent of the towns surveyed had been actively engaged in "mass distribution advertising" i.e. the dissemination of various types of printed materials which described their community's industrial or recreational possibilities. Nearly two-thirds of the items distributed were of an industry-promoting type; this group included industrial location brochures, newsletters, community fact-finding books or reference guides, and special topic brochures, e.g. findings of county labor market studies. These materials were either mailed to firms that development organizations believed to be potential clients or sent to companies who had inquired about possible local plant sites.

The remaining materials distributed by these groups were of a tourism-promoting type such as recreational opportunities brochures, bumper or window stickers, and "promotional novelties" e.g. maps showing local points of interest. These items were often handed out at fairs or conventions and left at service stations and highway rest stops in an effort to bring consumers to town, increase the demand for local products and thereby expand employment indirectly. Some organizations sent "packages" containing both industry and tourist promotion literature to firms that contacted them regarding location of new facilities.

An average of 1.5 pieces of material were distributed by the survey towns. There was a definite positive relationship between mass distribution activity and town size; the mean number of items distributed by

Class 1, Class 2, and Class 3 communities was 1.0, 1.5, and 2.2 respectively. Having a greater number of items, usually of more than one type, permitted Class 3 communities to be more selective in their distribution, i.e. tourists could receive a map showing local points of interest and businessmen would be sent a plant site evaluation booklet. Class 1 towns on the other hand often relied on a single leaflet for both industrial and tourism promotion.

Chambers of Commerce, though their number amounted to only one-third of the active development organizations identified, were involved either alone, or in conjunction with, other groups in the distribution of 56 percent of the mass distribution materials. This was mainly due to the fact that 66 percent of the items coming from Class 2 towns were sent by the Chambers in these communities which composed only 30 percent of the total number of development groups in this town size grouping.

Table 6 gives evidence of the impact of the greater resource base offered by larger communities upon development organization activity. As the mean expenditures for mass distribution advertising indicate, the groups in Class 3 towns spent nearly four times as much in their efforts to deliver twice as many items as did their counterparts in the Class 1 towns. Evidently there were quantitative as well as qualitative differences in the items sent out by organizations in communities of different sizes.¹

Personal contact activity

One way for a development organization to insure that its mass

¹Detailed information on the number of copies of each item sent, the party to whom it was sent, the group sending it, and the cost of preparing it was collected in the survey, but this data has not been analyzed as yet.

Table 6. Distribution of total expenditures on mass distribution advertising by development organizations, 1968-70, by town size

Dollars	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	15	36.6	8	28.6	1	3.4	24	24.5
\$1 to \$499	12	29.3	9	32.1	9	31.0	30	30.6
\$500 to \$999	8	19.5	2	7.1	3	10.3	13	13.3
\$1,000 to \$1,999	5	12.2	5	17.9	6	20.7	16	16.3
\$2,000 to \$3,999	0	0.0	3	10.7	5	17.3	8	8.2
\$4,000 or more	1	2.4	1	3.6	5	17.3	7	7.1
Total	41	100.0	28	100.0	29	100.0	98	100.0
Mean	\$535		\$766		\$1,921		\$1,012	
Median	\$229		\$333		\$1,250		\$417	
No information	6		7		4		17	
Total	47		35		33		115	

distribution literature reaches business leaders is to disseminate brochures and the like at industry conventions, trade fairs, sales meetings, etc. Such gatherings also afford a group's representatives, with or without literature, an opportunity to personally meet company officials and encourage them to expand or locate plant facilities in a particular community. The act of sending agents to these types of meetings to persuade and/or advertise was designated as "personal contact activity" of development organizations for this report.

It can be seen from Table 7 during the 1968-70 period, development

groups from only 30 percent of the rural Iowa towns surveyed were engaged in personal contact activity.¹ However, the organizations using the tool in their promotional efforts were not equally distributed among communities of different sizes. The proportion of Class 3 towns represented at least one meeting where personal contact activity might be carried on, 57.6 percent, which was nearly twice that of Class 2 towns and two-and-one-half times that of Class 1 towns; groups from large communities attended a greater number of these gatherings on the average than did organizations from medium or small-sized towns.

The types of development organizations using the personal contact technique in the promotional work were rather limited. Ninety-four percent of the groups sponsoring attendance at meetings were either development corporations (profit and nonprofit), or Chambers of Commerce. In one community, a city committee had been engaged in personal contact activity and in another, a development corporation and a private business had joined together in this type of effort.

Most, two-thirds, of the meetings attended by representatives from Class 1 towns were held in Iowa. The majority, 60 percent and 95 percent, of the gatherings attended by agents of development organizations in Class 2 and Class 3 communities were located outside the State's borders. Probably because the meetings they attended were nearby, small town organizations on the average sent more representatives than did groups from either

¹More than 30 percent of those interviewed felt their groups were involved in personal contact activity, but detailed questioning revealed that the meetings they or their agent had attended were primarily to educate industrial developers and did not offer substantial opportunity to contact firms about business locations.

Table 7. Distribution of meetings attended offering opportunities to contact businesses and encourage location in community, by town size

Number of meetings	Towns		2,500 to 4,499	4,500 to 8,499	Total			
	1,600 to 2,499	No. %			No. %	No. %		
0	41	87.1	25	71.4	14	42.4	80	69.5
1	2	4.3	3	8.6	5	15.2	10	8.7
2	2	4.3	4	11.4	8	24.2	14	12.2
3	2	4.3	2	5.7	5	15.2	9	7.8
4	0	0.0	1	2.9	0	0.0	1	0.9
5	0	0.0	0	0.0	1	3.0	1	0.9
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	0.3		0.6		1.2		0.6	

medium or large size towns. The mean number of persons sent from Class 1 communities was 5.5 compared to 3.2 individuals dispatched from Class 2 towns and 4.7 individuals sent from Class 3 towns.

Firm contact activity

In order to be successful in furthering local industrialization, development organizations must do more than simply place their town's name before company officials; these groups must convince managers that their community is the best place to locate business facilities. Therefore one of the most important types of promotional work that an industrial development organization can engage in is called "firm contact

activity" in this report. To be productive, this kind of effort requires aggressive, skilled, and persuasive leadership, coupled with a relatively large commitment of resources - time, dollars, and gratis goods and services, and perhaps, a flexible local governmental body.

Firm contact activity begins when, by various means discussed below, organizational leaders become aware that a firm is considering the development of new production facilities. This company is then contacted by phone, letter, or personal visit and hopefully a dialogue is established between the development groups' representatives and management personnel. During these discussions, literature may be exchanged, questions may be answered, and concessions may be granted. Local development leaders must find out if the type of operation this company intends to open would be welcome in their community, and also persuade the firm officials to locate in their town.

Development organizations in 91 percent of the communities surveyed reportedly had been in contact with at least one company during the 1968-70 period regarding business location or expansion. The likelihood that local groups had been engaged in firm contact activity increased with town size. Contacts were made by 85 percent of the Class 1 towns compared to 91 percent of the Class 2 communities and 100 percent of the Class 3 communities.

The means presented in Table 8 show that larger towns not only were more likely to be involved in firm contact efforts, but also made more contacts and entertained more company representatives, on the average, than smaller communities did. Because there appears to be no evidence to the contrary, it seems reasonable to assume that the average amount of

Table 8. The number of firms involved in firm contact activity, 1968-70, by town size

Stage of negotiation	Towns 1,600 to 2,499 (n = 47)		Towns 2,500 to 4,499 (n = 35)		Towns 4,500 to 8,499 (n = 30) ^a		Total (n = 113)	
	No.	% ^b	No.	% ^b	No.	% ^b	No.	% ^b
Firm contacts	139	3.0	152	4.3	202	6.7	493	4.4
Firms sending representatives	102	2.2 ^c	112	3.2	155	5.2	369	3.2
Firms deciding to locate	37	0.8	57	1.6	67	2.2	161	1.4
								4.4
								100.0
								74.8
								32.7

^aThree respondents indicated that groups in their communities had made some contacts but felt all information relating to them should be kept confidential.

^bRepresents the proportion of firms contacted which reach a particular stage of negotiation.

^cn = 46 to reflect one "no information" case.

local input required to process an inquiry or entertain a client did not vary significantly among population classes. If this is so, the results shown: 1) indicate that the total amount of resources devoted to firm contact activity was directly related to town size; and 2) reflect the impact of the greater resource base offered by larger communities on organized industrial development efforts.

On the basis of the mean number of contacted firms deciding to locate, shown in Table 8, it appears that the negotiations entered into by Class 3 towns were generally more successful in an absolute sense than were those in which Class 1 or Class 2 communities were involved. However, examination of the corresponding percentage statistics shows that a greater proportion of those firms contacted by Class 2 towns decided to locate in these communities. This result indicates that medium sized towns received a better return on the resources they invested in firm contact activity than did larger towns.

Detailed information was obtained for 481 of the 493 contacts reported by the respondents. It was discovered that three types of development organizations - nonprofit corporation, profit corporation, and Chamber of Commerce - made 80 percent of the firm contacts. Fourteen percent of the firms negotiating with nonprofit groups decided to locate, as did 27 percent of companies approached by profit corporations and 28 percent of those contacted by Chambers. Regional development organizations managed to convince seven of the seventeen firms they contacted to settle in one of the surveyed towns. Though based on a small number of cases, the high percentage of success, 41 percent, of this type of group would indicate that organizations with larger pools of assets on which to draw may have

better than average luck in attracting new industry. Other kinds of organizations making at least one contact were city commission/committee, commercial/development club, town council, and private business.

Four sources of information provided 89 percent of the names of firms interested in business location or expansion--the firms themselves (34%), local citizens (25%), the Iowa Development Commission (17%), and local businessmen (15%). Other parties providing names of prospects to local development groups during the 1968-70 period were electric companies, local nondevelopment organizations, railroad companies, newspapers or magazine articles, and nonlocal businessmen.

Special inducement assets

In some of the survey communities, the local development organizations had made an effort to acquire land and/or buildings or money which they could offer to prospective new firms as special inducements to locate in their towns. This effort was divided into "property asset acquisition activity" and "working capital acquisition activity" in this report.

Property asset acquisition activity Respondents in 70 percent of the towns studied presented evidence, such as titles to or options on property, indicating that local industrial development groups had been engaged in property asset acquisition activity. The incidence of this activity did vary with town size, however. Only 55 percent of the Class 1 towns had groups that had acquired property assets compared to 80 percent of the communities in Classes 2 and 3.

Development organizations held claim to 118 separate properties or an

average of one property per town. One-hundred-one of these, 98 percent of the total, consisted of land only; the remaining seventeen properties involved a building and adjoining land. Seventy-nine percent of these properties had been acquired by purchase, options were bought on 17 percent of them, and 2 percent had been received as gifts.

Profit and nonprofit development corporations held 82 percent of the property titles and options. However, since some corporations had been set up specifically to act as legal title holders by other kinds of development groups who actually obtained the land, such organizations were undoubtedly less involved in property acquisition efforts than the ownership statistics indicate.

The mean number of properties held, their relative composition of land or building plus land, the type of group owning them, and the method of acquisition did not vary significantly with town size.

Working capital acquisition activity It was more difficult to establish ownership of "working capital" than ownership of property assets because of the numerous ways an organization might control funds - some had a savings passbook in the name of the group, some issued notes, some had signed pledges from citizens, and still others had the hand shake of the local merchants. Since considerable sums of money have occasionally been secured from main street businesses by passing the hat, there was reason to believe that ignoring informal arrangements might understate the amount of special inducements available and the effort made to encourage industrialization. Ultimately, each situation had to be reviewed in depth and a judgement made. If any errors were made, they tended to be on the side of overstating the number of towns in which organizations had

"working capital".

Development organizations in 18 percent of the survey towns reportedly controlled funds that could be offered to firms who would locate in their communities for use in purchasing equipment, raw materials, and labor. An average of \$25,000 of "working capital" was available to new firms in towns with this special inducement asset. Interestingly, a lower proportion of Class 3 communities had working capital than did Class 1 or Class 2 towns--12 percent compared to 21 percent and 20 percent respectively. However, the mean amount of funds available in large towns with working capital was \$13,000 more than the average amount available in small towns and \$23,000 more than the average available in medium sized towns with such funds. Thus, the impact of Class 3 towns' larger resource base can be seen again in the results of this development organization activity.

Nonprofit development corporations controlled the working capital in 50 percent of the communities that had this special inducement asset, while profit corporations controlled these funds in 27 percent of these towns. Chambers of Commerce or regional development organizations were in charge of the "working capital" in the remaining communities that had this asset.

Funds to be offered as operating capital were obtained by development groups in a variety of ways. Sale of stock and subscriptions or pledges from local citizens were the two modal methods of acquisition. Other means used to secure this special inducement asset were donations or loans from local citizens, savings out of income from property sale, and arranging a loan or line of credit with a local bank.

Fact book activity

In this study, a community "fact book" for industrial development organization use was defined as any systematic collection of data which could be used as a reference source by group personnel to answer the questions of firms considering business location or expansion. A "fact book" is distinguished from an industrial opportunities brochure by the detail of the information it contains and because it is kept by a local leader in his home or office rather than being reproduced and distributed. Some respondents did indicate, however, that during serious negotiations they might lend their book to a client.

Ninety percent of the towns surveyed had fact books prepared by a local development organization. Eleven of the twelve communities that did not have a "fact book" had 1970 populations of less than 2,500.

Development corporations (profit or nonprofit) and Chambers of Commerce had sponsored the preparation of 93 percent of all community fact books. Other kinds of local industrial development groups putting such books together were commercial or development clubs, town councils, regional development organizations, city commissions or committees, and Jaycees.

The median year for preparation of fact books was 1965, and three-fourths of the books had been updated prior to January of 1971. Fifty percent of the Class 3 towns had developed their books by the middle of 1963 and all communities in this grouping had revised their materials. On the other hand, the median year of book preparation among Class 1 towns was 1966 and only half of this grouping had revised their books.

Community betterment activity

The ultimate goal of the activities discussed thus far has been to expand local nonfarm employment opportunities. However, the workers who fill these new jobs may choose to shop in nearby communities because their businesses offer better atmosphere and selection, or they may be forced to seek medical services in nearby communities because adequate facilities and qualified personnel are not available where they work, or they may even decide to live in nearby communities and commute because these towns offer superior schools. If choices of this nature are made by many employees, many of the potential benefits from industrialization will be lost by the town in which it occurs. Thus rural communities might fail to grow in the face of industrial development because they lack the capacity to multiply the impact of their industrial payrolls.

It was discovered during the pre-testing phase of this study that some local industrial development organizations were engaged in projects which improved the ability of the local economy to hold and recycle income. The results of these efforts also improved the welfare of the present citizens and increased the attractiveness of the town to prospective new industries. Because of the potential impact on industrialization of these efforts, several questions were added to the format of the final questionnaire in order to ascertain: 1) if participation in these types of works called "community betterment activity", was common among Iowa's rural development groups; 2) what types of development groups were engaged in community betterment activity; and 3) what roles were played by these groups in what kinds of projects.

Results of the survey indicate that industrial development organizations in 84 percent of the communities had been engaged in some community

betterment activity during the 1968-70 period. The towns with groups whose promotional efforts included this kind of work were not proportionally distributed among the population classes. Only 77 percent of the towns having between 1,600 and 2,500 residents (Class 1 communities) had such organizations, compared to 86 percent of the towns with populations between 2,500 and 4,500 (Class 2 communities), and 91 percent of the towns with between 4,500 and 8,500 citizens (Class 3 communities).

There was little difference in the mean number of community betterment projects worked on by development organizations from Class 2 or Class 3 towns; groups in Class 1 communities worked on somewhat fewer improvements on the average. The lower mean characterizing the small towns was primarily due to the relatively high proportion of towns in this group with no organizations involved in community betterment activity.

Though considerable information was collected on the types of civic projects in which development organizations were involved and the roles these groups played in them, lack of computer summarization of this detailed data precludes any lengthy discussion of these characteristics. However, from experiences gained during interviews and data coding, some general observations may be made.

Local industrial development organizations were involved in a diverse range of community betterment projects as List 1 below indicates. The various kinds of projects can be classified by their actual impact or anticipated effect on the local environment where they were carried out. One group, including manpower surveys, comprehensive development plans and zoning laws, will aid local leaders in providing for rational and efficient physical community growth. Another group including projects

such as "bringing a doctor or dentist to town" and "building, expanding, or renovating a school" increased or improved basic community services, i.e. health care, education, housing, transportation, water availability, and electric power availability. A final group including projects like building a swimming pool, beautify business area, or building a new golf course, increased or improved the recreational possibilities and scenic attraction of the community.

The roles industrial development organizations played in different kinds of projects were of three general types, as shown in List 2 below. In some cases organizational personnel acted as directors who sold the project to opposing or disinterested citizens, planned actions, and coordinated work effort. Performing as solicitors on other projects, these groups worked to obtain funds to improve their community. Finally, development organizations were benefactors, providing gifts for local improvements.

"Other" activity

The promotional activities discussed above are those in which industrial development organizations might normally be expected to engage. To get a more complete picture of the total local industrialization efforts, each respondent was asked if any group in his community had "done any other things to encourage industrial development and business expansion during the 1968-70 period."

Respondents in 27 percent of the survey towns felt their organizations had done something relevant to local industrial development which had not been covered in the enumeration of activities. The proportion of

List 1. Types of community betterment projects Iowa's rural industrial development organizations worked on

1. Bring doctor or dentist to town.
 2. Build or improve local hospital
 3. Build or acquire other health care facilities, e.g. ambulance
 4. Low-rent housing
 5. Build, expand, or renovate school
 6. Help local college
 7. Improve municipal power plant
 8. Increase water facilities
 9. Build or improve city airport facilities
 10. Swimming pool
 11. Golf Course
 12. Park and recreational area improvement
 13. Community clean-up
 14. Beautify business area
 15. Expand or improve other public building
 16. Increase or improve parking
 17. Comprehensive development plan
 18. Comprehensive zoning law
 19. Manpower survey
 20. Urban renewal
-

List 2. Roles played by local industrial development organizations in community betterment projects

1. Director
 - a. Coordinated efforts
 - b. Established planning and coordinating agency in the town
 - c. Sponsored informative meetings and talks to sell projects to local citizens
 2. Benefactor
 - a. Paid for community improvement, e.g. bought Christmas decorations
 - b. Built, bought, or paid rent on office for new doctor or dentist
 3. Solicitor
 - a. Contacted, interviewed, and persuaded doctor or dentist to come to town
 - b. Worked with government agencies to obtain project approval and for funding
 - c. Conducted fund drive
 - d. Conducted "vote yes" campaign for bond issue to obtain funds for project
-

Class 2 and 3 towns engaged in "other" activities was approximately twice that of Class 1 communities. Like community betterment projects, the types of "other" activity and their relevance to local industrialization varied considerably from town to town, as shown in Table 9. "Working with regional extension groups on area problems" and "promoting special local events, e.g. Pella tulip festival" were the two modal "other" activities.

Community informative activities

Since the support of local residents is important to the effective functioning of most types of community organizations, the respondents were asked if the development groups had made any effort to keep their citizens informed about and interested in industrialization during the 1968-70 period. Ninety-seven of them, 84.3 percent of the total, indicated at least one organization in their towns had made such community informative efforts. The three primary types of efforts were: 1) placed stories and news releases in the local paper, (used by groups in 39 percent of the communities); 2) held or spoke at local meetings, (used by groups in 20 percent of the towns); and 3) circulated newsletter or bulletin, used by groups in 14.9 percent of the towns). Other methods used to foster grass roots support were to hold industrial information fairs or recognition events, to make announcements on local radio and in local newspaper, to send brochures to local residents, and to sponsor tours of local industrial facilities for citizens.

Nonprofit development corporations were the organizations involved most frequently in community informative activities; they were engaged in

Table 9. "Other" activity of local development organizations, 1968-70

Activity	No.	Total %
Obtain lists of growing firms for identifying prospects	2	6.5
Advertise recreational facilities to tourists	3	9.6
Form multi-county development organization	5	16.0
Act as continuing liaison between business and city	4	12.8
Participate in IDC activities and training classes	2	6.5
Bought railroad siding	1	3.2
Promote special local event, e.g. Pella tulip festival	5	16.0
Invite industry leaders to special local event	2	6.5
Hold seminars on business efficiency for local businessmen	1	3.2
Invite industry leaders to local event and hold efficiency seminar	1	3.7
Hold special event to attract labor to community	1	3.2
Help CIRAS	1	3.2
Hire full-time industrial representative	1	3.2
Work with regional extension organization on area problems	1	3.2
Conduct "Vote Yes" campaign for industrial revenue bond issue	1	3.2
Total	31	100.0

some fifty such projects compared to forty-one different presentations produced by the second most frequent solo sponsor of these efforts, Chambers of Commerce. Development corporations, both profit or non-profit, and Chambers working together or separately made nearly 90 percent of the informative efforts. Other groups involved in informative activities were city commissions/committees, commercial/development clubs, local civic/service groups, private businesses and town councils.

Industrial Development Leadership

The success of any organization is highly dependent on the ability, aggressiveness, and enthusiasm of its leaders. It is difficult for an outsider studying any group to discover the embodiment of leadership as opposed to the official seat of direction; often the individual who is the driving force may not have the biggest office or most prestigious title.

Two steps were taken during this survey in an effort to determine who the local industrial development leaders were. First, the "most knowledgeable" person, found through the screening process discussed above was designated as the respondent. Then this individual was asked to describe the person in the community most active in industrial development work, excluding himself. This process, of course, did not guarantee that the true "movers" behind the town's industrialization efforts would be identified, but it seemed preferable to any other method given the limited resources available to conduct the survey.

Each respondent was asked about himself and the "most active person" in his town in order to determine the character of these leaders. Their

descriptions are summarized below.

The respondent

The development organization affiliations and position of the respondents were discussed earlier. They might be summarized as follows: 1) 92 percent of them were associated with either development corporations, profit and nonprofit, or Chambers of Commerce; 2) two-thirds of them held office of either president, secretary, or manager. Additionally, it was found that these local leaders had been involved in industrial promotion work for a period averaging about 10 years. There was little difference in this figure associated with town size.

Eighty-five percent of those interviewed were regularly employed in either professional-technical or manager-officer-proprietor (other than farm) occupations. Other respondents were employed as craftsman-foreman (1), farm managers (2), clerical workers (4), and sales workers - primarily insurance or real estate (10).

The mean age of the respondents was 48.6 years and the average period of residency in their present community was 25.9 years. While the mean age did not vary significantly with town size, the average length of residency for Class 3 respondents was somewhat less than that of Class 1 or Class 2 leaders.

One-hundred-three of the respondents, 90 percent of the total, reported they held at least one office in a group other than a development organization; the mean number of "other" offices held by those interviewed was 2.9. Offices were most frequently held in service organizations, followed by trade organizations, churches, fraternal organizations and

governmental bodies. Respondents in Class 2 communities held somewhat fewer offices on the average than did those in Class 1 or Class 3 - 2.7 offices compared to 3.0 and 3.1 respectively.

Each respondent was asked to estimate the number of hours he had spent working on local industrial development during 1970. The responses to the question, which are shown in Table 10, are best summarized by the medians presented because of the skewed nature of their distribution. According to their own figures, those interviewed tended to work 4.5 forty-hour weeks on local industrialization; the respondents from smaller towns generally committed less time toward this end than did those from larger communities.

Respondents from 11 percent of the surveyed towns spent over 900 hours working on industrial development; this represents an investment of more than 22 man-weeks in local industrialization efforts. Many of those who provided such a large amount of labor input appear to have been subject to income incentives in their work. Nearly half of them were Chamber of Commerce managers who, it is believed earned a portion of their living from this position. Several others were officials of profit development corporations who undoubtedly stood to gain financially if their efforts were successful.

Each respondent was also asked if he had had some formal training which he judged helpful in his role as a community development leader. Forty-four percent of them said they had had such training. Further, they mentioned college, Chamber of Commerce management school, Iowa Development Commission sponsored clinics, and company sales and industrial development courses as types of valuable training.

Table 10. Distribution of hours worked by respondent on industrial development in 1970, by town size

Hours worked	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
Under 100	14	29.8	5	14.3	4	12.1	23	19.9
100 to 299	28	59.6	17	48.6	8	24.2	53	46.0
300 to 499	5	10.6	4	11.4	5	15.2	14	12.2
500 to 699	0	0.0	6	17.1	3	9.1	9	7.8
700 to 899	0	0.0	0	0.0	3	9.1	3	2.6
900 and over	0	0.0	3	8.6	10	30.3	13	11.5
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	137.2		329.3		656.8		344.9	
Median	134.0		173.5		380.0		180.8	

Over 30 percent of the respondents from Class 3 communities spent 900 or more hours working on industrial development during 1970. Further, a considerably higher proportion of the leaders from this grouping reported receiving instructions than did those from Class 1 and Class 2 towns. These two findings would indicate that larger communities tended to rely somewhat more heavily on professional development personnel for local promotional leadership.

The "most active person" other than the respondent

Most of the individuals identified by the respondents as "most active"

in industrial development work were regularly employed in professional-technical or manager-officer-proprietor (other than farm) occupations. Of the four who were not of these two lines of work, three were governmental service workers in communities with populations between 2,500 and 4,500 (Class 2 towns). The fourth person was a farm manager in a community with 4,500 to 8,500 residents (Class 3 town).

The mean age of the most active persons, 49.5 years, was not significantly different from that of the respondents, but the average period of residency, 32.2 years, was considerably longer than that of those interviewed. As was also the case with the respondents, little difference in the mean age was associated with town size but contrary to respondent situation, the length of residency tended to be longer for most active persons in larger towns.

Sixty percent of the "M.A.P.'s" on whom information was obtained were officers or members of two development organizations, therefore, the total in Table 11 below is greater than 115. As shown in this table, nearly three-fourths of the "M.A.P.'s" were associated with nonprofit development corporations or Chambers of Commerce. They were simply members of 35 percent of the organizations to which they belonged while 26 percent of them were on the board of directors. Other offices held were president, secretary-treasurer, vice president, and manager. Six percent of the "M.A.P.'s" were former officers of local development organizations.

According to the respondents, three-fourths of the most active persons held offices in organizations other than development groups. The average number of "other offices" held was 1.5 for all "M.A.P.'s" and the mean for each population class was approximately the same. Church offices

Table 11. The development organization affiliation of the "most active person", other than the respondent, by town size

Types of organizations	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total No. %
	No.	%	No.	%	No.	%	
Nonprofit development corporation	24	35.8	20	33.9	16	30.8	60 33.7
Profit development corporation	8	11.9	8	13.5	8	15.4	24 13.5
City commission or committee	1	1.5	1	1.7	0	0.0	2 1.1
Commercial or development club	4	6.0	4	6.8	0	0.0	8 4.5
Chamber of Commerce	24	35.8	20	33.9	26	50.0	70 39.3
Local civic or service organization	2	3.0	1	1.7	0	0.0	3 1.7
Town council	4	6.0	2	3.4	0	0.0	6 3.4
Regional development organization	0	0.0	2	3.4	2	3.8	4 2.2
Private business	0	0.0	1	1.7	0	0.0	1 0.6
Total	67	100.0	59	100.0	52	100.0	178 100.0

were the type most frequently held by "M.A.P.'s", followed by positions in service groups, trade organizations, fraternal groups, and governmental units.

Each respondent was asked to estimate the number of hours the most active person in his town spent working on industrial development during 1970. Their answers, as summarized by the medians shown in Table 12, indicate that the "M.A.P.'s" tended to provide 5.1 man-weeks of labor input for local industrialization efforts; this amount was somewhat greater than that provided by the respondents themselves. Thus, those identified as most active persons generally deserved their title.

The population class medians indicate that the "M.A.P.'s" in small towns tended to spend considerably fewer hours working on industrial development during 1970 than did those from medium or large towns. As noted earlier, this relationship was also true of the respondents from the different population classes. However, where the respondents from Class 3 communities were most active, the "M.A.P.'s" from Class 2 communities appear to have spent the most time working on industrial development based on the median hours worked.

Indices Which Summarize the Characteristics of Local Development Organizations

Since the number of development organizations, their commitment to different types of promotional activities, and their leaders' characteristics varied greatly among the towns studied, some measures were needed which would give a summary picture of the organized industrialization efforts in each community. Such gauges also might serve as independent

Table 12. Estimated number of hours spent by the most active person other than the respondent working on industrial development during 1970, by town size

Hours worked	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
Under 100	14	31.2	4	12.1	3	11.1	21	20.0
100 to 299	28	62.2	12	36.3	14	51.9	54	51.4
300 to 499	1	2.2	8	24.3	3	11.1	12	11.4
500 to 899	2	4.4	6	18.2	4	14.8	12	11.5
900 hours or more	0	0.0	3	9.1	3	11.1	6	5.7
Total	45	100.0	33	100.0	27	100.0	105	100.0
Mean	160.8		336.4		343.5		263.0	
Median	162.5		308.4		244.0		202.5	
No information	2		2		6		10	
Total	47		35		33		115	

variables in alternative explanations of any variability in the success of towns in expanding their nonfarm employment base. Toward these ends, the Index of Organizational Activity (O.A.) and the Index of Development Leadership (D.L.) were computed from the material discussed above.

Briefly, the O.A. or Organizational Activity index of a community was the unweighted average of nine component indices which reflected the amounts of resources the local development groups devoted to different promotional activities relative to the mean amount of input of all towns

surveyed. These components were based on "key quantities", e.g. total dollars spent on advertisements, which reflect organizational commitment to media advertising, mass distribution advertising, personal contact activity, firm contact activity, property acquisition activity, working capital activity, community betterment activity, "other" activity, and overall group participation. Each index was compiled separately then all were transformed to equalize the effects of a unit change in any one component. The unweighted mean was chosen as the aggregate index because no a priori basis for assigning weights seems to exist. Appendix D contains a detailed discussion of the O.A. index computations.

While the quantity and quality of local leadership available in a community is difficult to measure, these two factors could be important in explaining the success of the towns industrialization efforts. In order to have some rough measure of the local leadership input, the D.L. or Index of Development Leadership was compiled from information gathered about the respondents and the most active persons. The hours these individuals spent working on industrial development, the number of "other" offices they held, and the development related training of the respondent provided the basis for a towns D.L. For complete details of the computational procedure and reasoning, see Appendix D.

The distribution of the O.A. index among towns of different sizes, Table 13, reflects the general trend noted in the preceding analysis--larger communities were more active on the average than smaller ones. Large towns were characterized by a mean index value of 86 compared to means of 58 and 72 for towns in Class 1 and Class 2 respectively. Additionally, the decline in the standard deviation for successively higher

Table 13. Distribution of the organizational activity index by town size

Organizational activity	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0 to 49	15	31.9	4	11.4	3	9.1	22	19.1
50 to 65	13	27.7	10	28.6	3	9.1	26	22.6
66 to 79	9	19.1	12	34.3	6	18.2	27	23.5
80 to 99	7	14.9	5	14.3	11	33.3	23	20.0
100 or more	3	6.4	4	11.4	10	30.3	17	14.8
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	57.7		72.3		86.1		70.3	
Std. deviation	27.7		22.5		21.1		27.2	

population classes indicates that the variability in the level of activity among communities was less among larger towns than among smaller towns. As noted previously, the positive relationship between various types of organizational activity and town size undoubtedly reflects the impact of the greater resource base provided by larger communities.

It should be pointed out that even the development organizations from the largest communities were not very active in all kinds of promotional work. The upper range of the Organizational Activity (O.A.) index was 133 while each of the component indices which made up this composite measure rated at least one community 200. This result indicates that all local development leaders had to choose among alternative forms of

promotional efforts and that their opinions differed concerning the types of efforts which did the most to further industrialization in their communities.

Like the O.A. index, the Index of Development Leadership (D.L.) exhibited a marked tendency to increase with town size. Class 1 communities had an average D.L. of 73 compared to means of 90 and 108 for Class 2 and Class 3 respectively. This result was due primarily to the greater amount of labor input provided by the leaders in many of the larger survey communities. These individuals invested large amounts of their time in local industrial promotion work for one or more of the following reasons: 1) the local business community had sufficient resources to pay for their services as Chamber of Commerce manager; 2) the community offered sufficient growth potential and experienced sufficient development to attract them into the industrial promotion field as private entrepreneurs; and 3) their company, e.g. bank or utility, faced losses from local economic decline and expected gains from local industrialization.

THE ENVIRONMENT IN WHICH IOWA'S RURAL INDUSTRIAL
DEVELOPMENT ORGANIZATIONS FUNCTIONED

Local Citizen Support

As mentioned earlier, the support of the majority of the local citizens is extremely helpful and perhaps essential to effective operation of most community groups. Development organizations which, in general, depend on donations, voluntary dues or free gratis labor to meet their operating needs, are certainly no exception. Therefore, this survey sought to determine: 1) if grass roots backing existed for the industrialization efforts in Iowa's rural towns; 2) why most residents did (or did not) want industrial development; and 3) who was in favor and who was opposed to local business promotion efforts. Each respondent was asked to answer these questions for his community in lieu of a formal polling of the citizenry, which was beyond the budgetary bounds of this study.

Citizen attitude toward industrial development

Ninety-five percent of the respondents reported that the majority of the people in their towns favored industrial development. They wanted it, judging from the respondents answers, because of the job opportunities it would create and because of various social and economic benefits they felt would accrue to their communities as a result of local industrialization.

There were differences in the specific benefits expected by the majorities in various towns. Some thought it would prevent population decline while others believed it would foster community growth; some thought it would raise local incomes while others believed it would lower taxes by

increasing the local revenue base; and some hoped for a combination of these results. It should be readily apparent that each of these benefits is directly linked to the foremost reason for wanting industrial development--increasing local employment.

Six of the respondents indicated that most of the people in their towns were opposed to industrial development. The general feeling among these citizens was that some of the present characteristics of their communities' environment were quite desirable and beneficial. Industrialization, they apparently believed, would adversely affect these attributes without adding a compensating amount to local social welfare. Specifically, some towns wanted to maintain their "bedroom community" atmosphere, others wished simply to keep peace and quiet, and the citizens of one community wanted to preserve the recreational attraction of their area.

Citizens supporting industrialization

After inquiring as to the majority attitude toward industrial development, the enumerators asked each respondent to list all groups of citizens in his community that were in favor of industrialization. Table 14 summarizes the answers the interviewers received which numbered more than 115 since more than one group could be singled out. It can be seen that "businessmen", not unexpectedly, were named most often as a group of residents wanting industrialization. Following this group in frequency of listing were "professional people" and "laborers (workers)". "Farmers and rural people" complete a list of the five groups most frequently mentioned.

The respondents also were told to indicate which of those wanting

Table 14. The groups reported as favoring industrial development, by town size

Groups in Favor	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
Businessmen	45	38.2	34	39.5	33	37.9	112	38.4
Laborers	18	15.3	12	14.0	15	17.2	45	15.5
Local manufacturers	2	1.7	5	5.8	3	3.4	10	3.4
Professional people	17	14.4	13	15.1	16	18.5	46	15.8
Property owners	6	5.1	1	1.2	0	0.0	7	2.4
Young people	7	5.9	3	3.5	3	3.4	13	4.5
Civic groups	7	5.9	4	4.7	2	2.3	13	4.5
Farmers - rural people	11	9.3	7	8.1	9	10.3	27	9.3
Everyone	2	1.7	2	2.3	2	2.3	6	2.1
Commuters	0	0.0	2	2.3	1	1.2	3	1.0
Women	1	0.8	0	1.2	2	2.3	4	1.4
City officials	2	1.7	2	2.3	0	0.0	4	1.4
Retired people	0	0.0	0	0.0	1	1.2	1	0.3
Total	118	100.0	86	100.0	87	100.0	291	100.0

industrialization were "most in favor" of it. Seventy-nine percent of those interviewed felt that the "businessmen" in their towns deserved this label. "Laborers (workers)" were identified as the group "most favoring" in 12 percent of the communities. Other groups mentioned in this context were "local manufacturers", "property owners", "young people", "civic

groups", "farmers and rural people", and "everybody".

Another question concerning pro-industrialization groups was posed to those interviewed: "Do the groups favoring industrial development have any preferences as to the type of industry locating in your community?" Eighty-six percent of the organization leaders felt the local people had some preferences. List 3 presents the types of preferences these respondents felt their citizens had; the list is ordered according to the frequency with which the characteristics were mentioned, beginning with the most frequently mentioned.

Three of the preferred characteristics shown in List 3 deserve further discussion. First, development supporters in 60 percent of the communities desired "non-polluting, odor free" firms. This result would indicate that even in towns where the majorities of citizens favored industrial development, there was likely to be considerable concern for protecting the local environment.

Second, in 37 percent of the towns having some preferences, the citizens wished to locate "several small firms". There seemed to be two reasons for this preference: 1) some towns were fearful of basing their economies on a single large employer; and 2) some towns felt their chances of attracting a "growth" company would be increased by locating several new firms locally.

Third, in 12 percent of the towns having some preferences, the citizens felt that locating firms which employed women was desirable. Such firms, they believed, could increase local family incomes by providing a second pay check for families where the husband was already employed.

List 3. Types of firms preferred by the citizens of Iowa's rural communities

1. Non-polluting, odor free firms
 2. Several small firms
 3. Financially sound firms
 4. Firms which employ women
 5. Non-agricultural manufacturing firms
 6. Agricultural manufacturing firms
 7. Firms which employ both men and women
 8. Firms which pay high wages
 9. Firms which will not require additions to the current capacity of municipal service facilities
 10. Firms engaged in wholesale or retail trade
 11. Firms which employ men
 12. Non-union firms
 13. Firms engaged in business or repair service
 14. Firms providing professional services
 15. Firms which do not employ minorities
 16. Firms not characterized by seasonal employment
 17. Firms which employ highly skilled labor
 18. Financial or real estate firms
 19. Research and development firms
 20. Firms which employ low-skilled labor
-

Citizens opposing industrialization

Following the listing of the groups favoring industrial development, each respondent was asked to identify those types of people who did not favor or opposed this process. In Table 15 below, their lists are summarized. "Old or retired persons" were the type of people most often thought to hold a negative attitude toward industrialization. General apprehension toward change and a fear of higher taxes were held responsible for this feeling. Interestingly enough, the opposition groups named second most frequently were "local manufacturers". Anxiety about possible increases in local wage levels were believed to cause the unfavorable disposition of this group.

The development organization leaders were asked to note which group was "least in favor or most opposed" to industrialization. "Old or retired people" were mentioned in this context by 57 percent of the respondents and 5 percent indicated that "local manufacturers" deserved this label. Other groups listed were "commuters and traveling salesmen", "uninformed citizens", "people on fixed incomes", "farmers and rural people", and "home owners".

City Government Support of Industrial Development

As noted earlier, some of the governmental units in the surveyed towns were involved directly or indirectly through committee/commissions in local industrial promotion activities. Whether or not a town council actively participates in such efforts, it can support the community's industrialization in several other ways.

By exercising its power granted by the State Legislature in 1963 to

Table 15. The groups least in favor or opposed to industrial development, by town size

Group opposed	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
None	15	25.9	10	23.7	7	19.4	32	23.6
Retired and old people	30	51.8	18	42.8	22	61.1	70	51.6
Local manufacturers	1	1.7	2	4.8	6	16.7	9	6.6
Laborers	0	0.0	1	2.4	0	0.0	1	0.7
Commuters and traveling salesmen	1	1.7	1	2.4	0	0.0	2	1.5
Uninformed citizens	1	1.7	5	11.9	1	2.8	7	5.1
People on fixed incomes	3	5.2	1	2.4	0	0.0	4	2.9
City council and/or municipal employees	2	3.4	2	4.8	0	0.0	4	2.9
Farmers or rural people	3	5.2	1	2.4	0	0.0	4	2.9
Home owners	2	3.4	1	2.4	0	0.0	3	2.2
Total	58	100.0	42	100.0	36	100.0	136	100.0

issue "industrial revenue" bonds, a city may obtain low-cost financing for the facilities of new or expanding firms. When a specific company has decided to locate in a particular place and occupy a plant with certain specifications, these instruments may be issued. The town sells bonds to buy land and construct a building for the firm. Lease payments

from that company are then used to retire the debt.

Sixteen respondents, 14 percent of the total, reported that governing bodies of their towns had issued industrial revenue bonds since 1963. The likelihood that a community's government had provided this kind of support was directly related to town size; only 2 percent of the Class 1 communities had issued bonds compared to 20 percent of the Class 2 communities and 24 percent of the Class 3 towns.

The proceeds from thirteen of these bond issues were used as described above, i.e. to build plant facilities for new or expanded firms. Funds raised by the three remaining local governments were used to finance projects that not only contributed in a direct way to the expansion of local employment opportunities, but also improved the attractiveness of the town to new industry. Two of these three issues financed improvements in municipally owned power plants and the third was used to build facilities for a local college.

Another way in which local governments may lend support to industrial development is by providing or authorizing the provision of "special municipal services" to new or expanding companies. "Special municipal services" were defined in the study as services that would not otherwise have been provided if they had not been used by firms which had recently located or expanded.

Thirty-seven of the development organization leaders interviewed, 32 percent of the total, stated that their towns had provided at least one new or expanded firm with special municipal services during 1970. As was the case with industrial revenue bond offerings, the probability that a town provided such services was directly related to town size.

The kinds of special municipal services most often provided were water, sewer, and street facilities. These three types of service were provided either together or separately in 96 percent of the communities providing some special services. Electric power was the other kind of service provided to new or expanding firms in a few of the surveyed towns.

Forty-four percent of the towns providing "special municipal services" paid the full cost of making them available. Another 31 percent of the communities shared the cost of providing these services with the user firms or the firms and the county. In five cases, the companies themselves were charged with all costs and in the four remaining instances development organizations paid all or some portion of the expenses incurred in providing "special municipal services".

Table 16 shows the distribution of the number of firms receiving benefits from the provision of special municipal services to new or expanded businesses. The population class means presented in this table indicate that not only were new or expanded firms more likely to receive special service in larger towns, but also that a greater number of mature local firms tended to benefit from some of the provisions of these revenues.

Iowa Development Commission Support of Rural Industrialization

While local citizens and city governments support for industrialization efforts is necessary and in some respects may be quite helpful, e.g. industrial revenue bonds, the capabilities of these two groups are still limited. Therefore, local industrial development organizations have sought assistance from governmental units with larger resource and information bases. In Iowa, the agency charged with promoting the state's

Table 16. The number of firms receiving benefits from special municipal services in 1970, by town size

Number of firms	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	37	78.7	23	65.7	18	54.4	78	67.8
1	4	8.5	6	17.2	5	15.2	15	13.1
2	3	6.4	2	5.7	0	0.0	5	4.3
3	0	0.0	0	0.0	5	15.2	5	4.3
4	2	4.3	0	0.0	2	6.1	4	3.5
5	1	2.1	2	5.7	1	3.0	4	3.5
6 or more	0	0.0	2	5.7	2	6.1	4	3.5
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	0.5		0.8		1.9		1.0	

industrial development is the Iowa Development Commission (I.D.C.), and each respondent was asked if any of the development groups in their town had ever received any help from this organization.

Eighty-two percent of the respondents stated that the I.D.C. had assisted at least one of the development groups in their towns. The probability that a community had received help was directly related to its size. Just 66 percent of the towns having populations between 1,600 and 2,500 (Class 1) were reportedly aided by the State agency, compared with 89 percent of the communities with 2,500 to 4,500 residents (Class 2) and 97 percent of the towns with 4,500 to 8,500 residents (Class 3).

Table 17 summarizes the types of help reportedly given to the communities studied. It should be noted from this table that prospect referrals were the whole or part of the substance of the aid received by 55 percent of these towns. This seems proper since the Commission, with greater resources than local development groups, presumably has more knowledge about and contact with locating and relocating firms.

The development organization leaders interviewed also were asked if they had any thoughts on how the Iowa Development Commission could help rural communities more. Fifty-seven percent of them indicated they did. The respondents suggestions are shown in Table 18; the total recommendations reflect the fact that each person was allowed more than one suggestion.

Many leaders from towns of all sizes felt the I.D.C. should refer more prospects to them and maintain personal contact with their towns. A belief that the Commission should take a greater interest in small towns was also prevalent among Class 1 communities; such a feeling might be expected since over one-third of the towns in this group indicated they had not received any help from the I.D.C. to date. Several respondents from Class 3 communities suggested that a regional agency representative network might be beneficial. Such advice might be expected because their towns could vie for I.D.C. assistance with relatively smaller towns in a region rather than competing directly with each other and larger cities in the state.

Local Industrial Facilities

One obviously important part of the local environment in which local

Table 17. Types of help received by those organizations reported receiving assistance from the Iowa Development Commission

Type of help	No.	%
Sent prospects	14	14.8
Sent prospects, provided information and materials	16	17.0
Sent prospects, provided help in assembling facts and other consulting services	12	12.8
Sent prospects and held training classes for leaders	4	4.3
Provided consulting services	16	17.0
Helped in assembling facts	9	9.6
Held training classes and seminars for leaders	7	7.4
Acted as an agent for town in negotiations with firm	1	1.1
Total	94	100.0
Towns not receiving help	21	
Total	115	

Table 18. Suggestions as to how the Iowa Development Commission could help rural communities more

Respondent's suggestions	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
None	19	36.6	17	42.5	12	27.3	48	35.3
Replace low-ranking personnel	1	1.9	1	2.5	0	0.0	2	1.5
Personal contact with town	10	19.2	5	12.5	7	15.9	22	16.2
Continue or establish regional representative system	1	1.9	1	2.5	5	11.4	7	5.1
Less overlapping of effort with other development groups	0	0.0	0	0.0	1	2.3	1	0.7
More interest in small towns	7	13.5	1	2.5	2	4.5	10	7.4
Provide professional help in assembling facts	6	11.5	1	2.5	3	6.8	10	7.4
Send more prospects	4	7.7	10	25.0	7	15.9	21	15.4
Advertise more	1	1.9	2	5.0	4	9.1	7	5.1
More staff and/or funds	3	5.8	2	5.0	3	6.8	8	5.9
Total	52	100.0	40	100.0	44	100.0	136	100.0

development organizations operate is the package of industrial facilities which group leaders can offer to prospective new firms. Presumably, a community with relatively more transportation services, utility services and attractive industrial sites has a comparative advantage in the location of new industry. Therefore, this survey gathered data on the industrial facilities available in Iowa's rural communities; in particular, information was obtained about the quantity of various industrial inputs available. Since no measure of the quality of these inputs was obtainable, the estimators discussed below assume that the quality of services was not significantly different among the towns studied.

Transportation facilities

Table 19 shows the types of transportation services available and the number of survey communities which offered them. Rail service, obtainable in 97 percent of these towns, was the most widely available means of transportation for industrial use.¹ Two of the three communities without rail service had populations of less than 2,500 citizens and the third had between 2,500 and 4,500 residents. On the average, 1.5 railroad lines served the communities studied. As might be expected, the number of lines serving a town was directly related to its size; the mean number of lines entering both the Class 1 and Class 2 communities was close to 1.0 while the mean number serving Class 3 towns was nearly 2.0.

Bus service and state highway service were the next most frequently occurring forms of transportation services, each being available in 84

¹While all communities had numerous residential streets, roads below the status of state highways were not considered means of industrial transportation.

Table 19. Summary of the transportation facilities available in the communities studied

Status of service	Rail Service		Commercial Air Service		Airport Service		Barge Service		Bus Service		State Highways		Federal Highways	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Service available ^a	112	97.4	2 ^b	1.7	86	74.8	3	2.6	96	83.5	96 ^c	83.5	71 ^c	61.7
Service not available	3	2.6	113	98.3	29	25.2	112	97.4	19	16.5	19	16.5	44	38.3
Total	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0

^aA type of service was considered "available" if it could be obtained from at least one service in the community, i.e. if there was at least one railroad line regularly serving a town the "Rail Service" was obtainable.

^bThese two communities were "served" because of the proximity to the airports of larger towns, e.g. Clear Lake is nearby the Mason City airport.

^cA town was considered "served" by a Federal or State highway if at least one such road touched the community's boundary in at least one place.

percent of the surveyed towns. The mean number of bus lines serving these communities was 1.0 and an average of 1.2 State highways touch the borders of these towns. The mean number of these two services did not differ notably among towns in different population classes.

Airports provided the fourth most frequent means of access to the towns studied, with 75 percent of them owning or supporting such a facility. As might be expected, the probability that a town offered airport facilities was directly related to its population; 51 percent of the Class 1 towns offered this service compared to 83 percent of Class 2 towns and 100 percent of Class 3 towns.

Overall, it appeared as though larger towns tended to have some absolute advantage in the number of different transportation services they could offer new firms and in the number of companies that provided particular types of services to the firms within their borders.

It should be noted that the mere availability of transportation services does not automatically give a community a cost advantage. Other factors such as distance from input sources, distance to primary output markets, and frequency of services will affect the town's relative transportation attractiveness to various industries. This study, however, did not collect data which would give quantitative measures of such considerations.

Power, water, and sewage facilities

A second important aspect of a town's industrial facilities package is its capacity to provide certain inputs which cannot economically be transported to the plant by a firm, i.e. electric power and fresh water,

and its ability to dispose of output which the company does not wish to ship or process further, i.e. sewage and waste.

Ninety-seven percent of the development organization leaders reported that their town's present facilities were adequate to accommodate a 25 percent increase in the demand for electrical power. Three of the four who did not think their town had this capability believed the cost of providing for such an increase would be "quite large, but manageable"; the fourth respondent felt the necessary expenditure would be "relatively small".¹

Ninety-one percent of the respondents felt their town's present water supply and distribution facilities could accommodate a 25 percent increase in demand for water. The proportion of respondents believing this did not vary notably between town classes, and all ten who held a negative opinion in this matter thought the cost of enlarging their present systems would be "relatively small".

Only 82 percent of those interviewed believed their communities were adequately prepared for a 25 percent rise in demand for sewage and sanitation services. The proportion of negative responses did not differ significantly with town size. One respondent from a Class 1 town believed the cost of increasing sewage treatment facilities would be "prohibitive"; fifteen respondents felt this cost would be "quite large, but manageable";

¹Those respondents answering negatively to any question concerning their towns' ability to provide 25 percent more usage of a vital facility were asked to describe the cost of adding to the present facilities as 1) prohibitive, 2) quite large, but manageable, and 3) relatively small. Such phrases are, of course, very imprecise but they do provide some relative measure of the difficulty a town might have in providing more services to industry.

the remaining five thought the required expenditure would be "relatively small".

In general, it appeared as though most of the rural communities studied were capable of meeting a considerable increase in the demand for utility services.

Industrial park facilities

In addition to transportation facilities and power, water, and sewer inputs, 56 percent of the survey communities had made provisions for meeting the plant site requirements of new and expanding firms. This was accomplished by designating land within or adjacent to their towns as "industrial parks". Presumably these parks had been zoned "industrial" and some provisions had been made to provide occupants with access to municipal and transportation services. Intercommunity comparisons of the quality and state of development of these parks cannot be made here because this study collected data only on their ownership and land area characteristics.

The likelihood that a community had an industrial park was directly related to its population; only 36 percent of the Class 1 towns had such facilities compared to 63 percent of the Class 2 towns and 76 percent of the Class 3 towns. Likewise, the average size of the industrial park among communities having these areas varied directly with town size; they contained an average of 38 acres in small towns while the mean size in medium sized towns was 52 acres and in large towns it was 55 acres.

Sixty-three percent of the industrial parks identified in the study were owned at least in part by local development corporations. The efforts of these groups to secure land for their parks presumably was recognized as "special inducement activity" in the section of this report which discusses

"special inducement" efforts. Other parties holding titles to industrial parks were Chambers of Commerce, city governments, and private individuals.

Local Living Facilities

Because of the nature of the suppliers of labor inputs, a wide variety of services are required to draw them to a community and maintain them there. The bundle of "living facilities" a town offers is therefore another important element of the local environment in which Iowa's rural development organizations operate. As in the case of industrial inputs, this survey was usually able to gather only quantitative data relating to some of the components of the package of services available in different communities. Since there seemed to be no secondary source which objectively rated these "life support" services, it was assumed that their quality did not vary significantly between towns in the study.

Housing facilities

A variety of factors, including high interest rates and swiftly rising building costs combined to make the latter years of the 1960's decade one of recession in the housing industry. As a result of this, many people around the country have found it increasingly difficult to secure adequate modern housing. Since one's physical residence is important to his health, self-esteem and world view, this survey questioned the respondents on the progress made by their communities in improving the local housing stock during 1970.

Table 20 summarizes the information about the local situation provided by the respondents. The statistics presented in the first two columns of this table indicate that mobile homes provided nearly as many new housing

Table 20. Distribution of the new housing construction in the surveyed towns during 1970, by type of dwelling units.

Number of Dwelling Units	Single Dwelling Units		Permanent Trailer Homes		Multiple Dwelling Units	
	No.	%	No.	%	No.	%
0 to 5 units	19	16.5	48	45.2	112	97.3
6 to 11 units	42	36.5	24	22.7	2	1.8
12 to 17 units	28	24.4	11	10.4	1	0.9
18 to 23 units	7	6.1	6	5.7	0	0.0
24 to 29 units	8	6.9	4	3.8	0	0.0
30 or more units	11	9.6	13	12.2	0	0.0
Total	115	100.0	106 ^a	100.0	115	100.0
Means units	13.4		11.2		1.2	
Units/1000 population	3.61		3.02		0.32	

^aNine no information cases excluded.

units, on the average, as conventional homes did. This apparent popularity of trailer living was probably due to the comfortable living space provided by recent mobile home models at relatively low cost. Many new trailer parks have also been developed which offer many of the extras, e.g. a swimming pool, that modern apartment complexes do.

Information was also gathered on the number of apartment buildings constructed in the survey towns during 1970; this data is summarized in the third column of Table 20. Unfortunately, data was not obtained on the number of dwelling units contained in each building and secondary sources

could provide only very crude data pertaining to this characteristic. Thus, the statistics related to multiple dwelling unit construction are not directly comparable with those on single dwelling unit construction or mobile home location and the impact of these units on local housing conditions is difficult to ascertain.

As might be expected, larger towns tended to experience more new housing construction than did smaller towns. For example, the mean number of single family dwelling units built in Class 1, Class 2 and Class 3 towns were 8.5, 15.2 and 18.3 respectively. Mobile home locations are also generally greater in larger communities.

When per capita averages are examined, the apparent relationship between population and construction is reversed. On the average, 4.0 single dwelling units were constructed per 1000 Class 1 town residents compared to 4.5 units per 1000 Class 2 citizens and 2.9 units per 1000 Class 3 citizens. Likewise, the mean per capita mobile home locations in small, medium and large size towns were 3.8, 3.4 and 2.5.

The cause of the conflicting trends exhibited by the absolute and relative averages appears to be complex since the mean 1960 and 1970 population growth rates of towns in the three population classes were essentially the same. One explanation may be that Class 3 communities grew faster in the early 1960's while Class 1 and 2 towns experienced much of their growth in the latter part of the decade. Such a growth pattern could lead to more building per capita in small and medium sized towns during 1970 compared to that occurring in large towns.

Another hypothesis based on the relative isolation of large towns might be offered to resolve the difference in absolute and relative

measures of building activity. As discussed below, it was found that the Class 1 and 2 communities studied, on the average, were located closer to large cities than were the Class 3 towns. Thus, some of the small and medium sized towns may have received a number of young people trying to escape the city who, because of rising incomes, could be inclined to build new homes or lease modern apartments. Many of the large towns surveyed, however, may have received retirees from the surrounding farm lands who might choose or be forced by low incomes to live in older homes.

Unfortunately, the timing of the census and the manner in which its results are reported preclude meaningful testing of either of these two hypotheses or some combination of them.

Health care facilities

One of the biggest problems in many rural areas recently has been the lack of personnel to meet the residents' health care needs. Only two of the towns included in this study had no M.D.'s, osteopaths, or dentists presently practicing within their borders; both of these communities had populations of less than 2,500. The average number of doctors and osteopaths working in all towns was 4.4 and there were on the average 1.2 M.D.'s per 1000 people in the towns surveyed. The mean number of dentists was 2.9, making 0.8 of them available per 1000 persons.

As might be expected, the number of physicians in a town was directly correlated with the community's size. Class 3 towns had 7.1 M.D.'s on the average compared to 4.5 and 2.4 in Class 2 and Class 1 communities respectively. However, the number of physicians per 1000 was higher in an average Class 2 town than either Class 1 or Class 3 communities--1.3 compared

to 1.1 and 1.1. Likewise, while there were more D.D.S.'s practicing in large towns than in medium or small ones, the mean number of dentists per capita did not differ significantly between town classes; this statistic was approximately 0.8 per 1000 for all classes.

Turning to health care "plant", all of the towns with populations greater than 4,500 had a hospital with an average of eighty-six beds within their city limits. Eighty percent of the Class 2 towns had a hospital with a mean number of beds of 53.2. Less than half, 47 percent, of the small towns studied had a hospital with an average of 40.0 beds per town. Medium sized communities without their own hospitals were an average of 18.4 miles from a town with one, while small towns without such a facility were about 14.5 miles away from service.

In general, it appears as though the relative amount of health care personnel available to the residents of the rural communities studied did not vary significantly with town size. The level of health care facilities available to them, however, was positively related to their community's population. This somewhat conflicting set of relations probably arises because of M.D.'s who lived in small towns and relied on the health care "plant" of larger communities for hospital services.

Public safety

All of the communities studied employed at least one full-time policeman and there were five officers, on the average, to protect a town's citizenry. Naturally, the mean number of law enforcement personnel varied directly with population; Class 1 communities averaged nearly three men to patrol the streets compared to about five in Class 2 towns and nearly nine

in Class 3 towns. However, average police manpower per capita did not vary significantly among the three town size classes.

Fire protection in all but one large town was provided by volunteer companies with an average compliment of 25 men. The mean number of firemen in each of the three population classes varied only fractionally from the overall mean. Therefore, there was an inverse relation between the firemen per capita and town size. Supporting their volunteer brigades, 25 percent of the communities had at least one more or less regular, paid individual; he was usually designated the fire chief.

A truer measure of the adequacy of public protection and safety forces would be the number of major crimes or fires per 1000 population. This survey, however, did not collect the data needed to compute these measures and none seem to be available from secondary sources.

Post-high school educational opportunities

Being the home of an institution of higher learning can aid a community's industrialization in several ways. First, the faculty can offer new or expanding firms a ready source of consulting services. Second, if it is vocationally oriented, the institution can train or re-train workers to suit the needs of new or growing companies. Third, expansion of enrollment can create employment opportunities for local citizens and perhaps bring highly paid, well educated people to the community. Finally, college art, musical, and dramatic programs can expand the cultural opportunities of the town.

In twenty-three of the towns surveyed there was one post-high school educational institution of some kind and in one community there were two

such schools. Thus, a total of twenty-five facilities were located in the universe. Table 21 presents a summary of the characteristics of these institutions. It should be noted that the number of schools, their average enrollment, and proportion offering four-year curricula and/or vocational training increases markedly with town size.

Some post-high school instruction, primarily of a vocational nature, was available in towns without institutions in the form of local course offerings by institutions located elsewhere. Additionally, some communities maintained adult education programs as a part of the local public school curriculum.

Improvements in public service facilities

In the past decade or two, there has been a large increase in the quantity and quality of public services demanded at the local level. Obvious examples of this trend may be found in the areas of education and sewage treatment-waste disposal. One-hundred-nine of the respondents, 95 percent of the total, reported that their communities made at least one "major" addition or improvement to their facilities for providing these services during 1968-70.¹ An average of 2.7 improvements were made during this period in the towns studied.

Little of the difference in the probability that a town had made major improvements appeared to be related to town size. However, larger communities tended to make more improvements than smaller towns did; the

¹The meaning of "major" was left unspecified because an expenditure which is "major" in a small town might be considered relatively unimportant in a larger community.

Table 21. Summary of post-high school educational opportunities by town size

Type of Institution	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
Four-year college	0	0.0	4	50.0	7	43.7	11	44.0
Junior college	0	0.0	3	37.5	1	6.3	4	16.0
Community college	0	0.0	1	12.5	5	31.3	6	24.0
Vocational school	1	100.0	0	0.0	3	18.7	4	16.0
Total	1	100.0	8	100.0	16	100.0	25	100.0
Mean enrollment in all institutions		12.0		629.5		718.5 ^a		658.7 ^a
Number of institutions offering vocational training	1	100.0	4	50.0	12	75.0	17	68.0

^a Means based on 15 and 24 observations respectively because of one "no information" case.

mean numbers of improvements made in Class 1, Class 2 and Class 3 towns were 2.4, 2.8, and 3.2 respectively.

List 4 summarizes the types of projects in which the survey communities had been engaged to upgrade their public service capabilities; the kinds of improvements are listed in order of the frequency with which they were mentioned. As indicated, the modal area in which betterment occurred was water supply facilities. Following closely behind this type of project in frequency of occurrence were sewer or sanitation facilities improvements and street paving or resurfacing. Among population classes, a markedly higher proportion of small towns constructed or improved public buildings relative to the other two community groupings. The percentage of Class 2 towns upgrading their water facilities was notably larger than that of either Class 1 or Class 3. And the proportion of large communities working on local airports was somewhat higher than that of small and medium sized towns.

The distribution of the total expenditures for major improvements in public service facilities during 1968-70 is shown in Table 22. On the average, the towns studied spent \$759,000 on these projects. Since the distribution is quite skewed, the median is probably a better measure of central tendency. This statistic indicates that the survey communities tended to spend considerably less on major improvements, \$350,000, than the mean suggests.

Both the population class means and medians show a strong relationship between town size and the absolute amount spent for public facilities betterments. Such a result might be expected in view of the greater tax base needs of larger communities. However, the average per capita

List 4. Types of major public improvements made in the survey communities, 1968-70

1. Improved water facilities.
 2. Improved sewer or sanitation facilities
 3. Paved or resurfaced streets.
 4. Constructed or improved public buildings.
 5. Improved electric power generating or distribution facilities.
 6. Constructed or improved airport facilities.
 7. Improved parks or recreational facilities.
 8. Improved ambulance, police, or fire protection facilities.
 9. Improved street lighting.
 10. Improved natural gas distribution facilities.
-

expenditures do not show a similar tendency in the level of relative expenditures. These statistics suggest that on the average only the large towns studied improved their relative attractiveness through major public improvements.

Because of their visibility and immediate use by people coming to a community, the condition of a town's streets may be important in shaping the first impression of local public services in the minds of businessmen and tourists. Therefore, in addition to inquiries about public service improvements, the respondents were asked what proportion of the community's streets were paved, i.e. had a concrete or blacktop surface. From their answers, it appeared as though 81 percent of the streets in the survey towns were hard surfaced on the average.

Table 22. Total expenditures for major community improvements, 1968-70, by town size

Expenditure (1,000's of dollars)	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	3	6.4	2	6.5	1	3.6	6	5.7
\$1 to \$99	14	29.7	4	12.9	2	7.1	20	18.9
\$100 to \$199	11	23.4	1	3.2	4	14.3	16	15.1
\$200 to \$299	3	6.4	6	19.4	1	3.6	10	9.4
\$300 to \$399	4	8.5	6	19.4	1	3.6	11	10.4
\$400 to \$499	2	4.3	3	9.7	0	0.0	5	4.7
\$500 to \$999	6	12.8	4	12.9	0	0.0	10	9.4
\$1,000 to \$1,499	3	6.4	3	9.6	8	28.5	14	13.2
\$1,500 to \$1,999	0	0.0	1	3.2	6	21.4	7	6.6
\$2,000 or more	1	2.1	1	3.2	5	17.9	7	6.6
Total	47	100.0	31	100.0	28	100.0	106	100.0
Mean	\$306		\$546		\$1,756		\$759	
Median	\$159		\$375		\$1,475		\$350	
Average per 1,000 population	\$171		\$161		\$278		\$205	
No information	0		4		5		9	
Total	47		35		33		115	

Interestingly, medium sized communities tended to have relatively fewer paved streets than did small or large towns. The median proportions of roads that were land surfaced in Class 1, Class 2 and Class 3 towns were 92, 80, and 91 respectively.

Recreational and cultural facilities

Because of 8-hour days and three-day weekends, workers and managers often have considerable leisure time which generally must be spent near their homes. Thus a community must offer more than paved streets, medical services and new houses or apartments to have "livability". Presumably a town with many facilities to meet peoples' leisure-time needs, combined with other living facilities, will be a preferable place to live and work. It might be assumed then that this attractiveness to labor would give the town some comparative advantage in attracting new firms and in keeping growing companies from expanding operations elsewhere. Therefore, this study sought information about the recreational and cultural opportunities in and near---within 25 miles of--the survey communities.

Table 23 summarizes the types of public recreational and cultural opportunities available in the immediate vicinity of the town studied. With the exception of "outdoor recreation areas" and "public golf courses", the mean number of facilities offering a particular kind of service among towns having that type of service was not significantly different than 1.0. An average of eight locations offering opportunities for picnicing, boating, fishing, etc. could be found within 25 miles of the survey towns, and an average of two golf courses could be found in the same area. In addition to the reported public facilities, there were undoubtedly private

Table 23. Towns offering various types of recreational and cultural facilities

Type of facility	Towns with facility		Towns without facility		Total	
	No.	%	No.	%	No.	%
Within the City Limits						
Public library	115	100.0	0	0.0	115	100.0
Summer recreational program for youth	112	97.4	3	2.6	115	100.0
Bowling alley	101	87.8	14	12.2	115	100.0
Outdoor swimming pool	99	86.1	16	13.9	115	100.0
Motion picture theater	90	78.3	25	21.7	115	100.0
Year-round youth center	43	37.4	72	62.6	115	100.0
Indoor swimming pool	10	8.7	105	91.3	115	100.0
Within 25 miles of the town						
Outdoor recreational area (Picnicking, boating, fishing, etc.)	115	100.0	0	0.0	115	100.0
Public golf course	87	75.7	28	24.3	115 ^a	100.0
Musical organization	85	74.6	29	25.4	114 ^a	100.0
Legitimate play organization	71	63.2	43	36.8	114	100.0
Public trap or skeet range	68	59.1	47	40.9	115	100.0

^aTotal adjusted to reflect one "no information" case.

recreational facilities, particularly golf courses, accessible to some local residents.

Generally, it appeared as though larger communities offered more kinds of recreational and cultural opportunities than did smaller towns. Aside from those facilities which were universally available, i.e. public libraries and outdoor recreation areas, the chances that a particular town had various types of leisure-time activities were positively associated with its size. For example, only 55 percent of the Class 1 communities had motion picture theaters compared to 89 percent of the Class 2 towns and

100 percent of the Class 3 towns.

The single notable exception to the trend noted above was in public golfing; the proportion of towns having the necessary facilities declined as population class ranking rose. Eighty-five percent of the Class 1 towns had public golf courses compared to 80 percent of the Class 2 towns and 58 percent of the Class 3 communities. This phenomenon was probably due to an increasing frequency of private courses in larger towns.

Indices Which Represent the Local Environment

As with organization promotional activity and local leadership, some summary indicators of the local environment were needed. Such measures would permit comparison of the survey communities and might serve as independent variables in any explanation of the variability in the industrialization experienced by these towns. Though citizen support of industrial development efforts or the lack of it is certainly an important component of this climate, the information gathered concerning it did not appear to provide a gauge of its depth or breadth. Since data on Iowa Development Commission assistance did not date any help received, it could not be determined whether that help should be included as part of the 1968-70 environment or not.

Two indices were developed to describe the local climate in which Iowa's rural industrial development organizations work--the Index of Industrial Facilities (I.F.) and the Index of Living Facilities (L.F.). A total picture of the relative attractiveness of a community's assets, the Index of Industrial plus Living Facilities (I.+L.) was then obtained as a weighted average of the I.F. and L.F.; the Industrial Facilities being given a

weight of 2 and the Living Facilities a weight of 1 (Appendix D).

A town's Industrial Facilities (I.F.) index was formed by averaging two component indices which reflected the community's relative potential to offer inputs needed by most industries--transportation and utility services. The transportation gauge was determined by dividing the number of services available in the town by the mean number of services offered in all towns. The utilities measure was derived from the information obtained about local power, water, and sewer capacities. Both components were transformed in order to equalize the effect of a unit change in either index. Then these two components were averaged to form the I.F. For complete details about the method of calculation, see Appendix D.

The Living Facilities (L.F.) index of a town was formed in much the same manner as its Organizational Activity (O.A.) index. Four important types of living facilities--housing, health care, recreational-cultural, and public service facilities--were gauged by component indices. These measures were derived by stating key quantities characteristic of a town, e.g. M.D.'s per 1000 residents, as a relative of the mean key quantities for all towns. The components were then transformed to equalize the effects of a unit change. L.F.'s were then computed as the unweighted average of the four transformed indices. For a complete discussion, see Appendix D.

Table 24 gives the distribution of the Industrial Facilities index among the three population classes. As might be expected, large towns had higher I.F.'s on the average than did medium or small sized towns; the mean values for Classes 3, 2, and 1 respectively were 143.8, 128.4, and 119.1.

Table 24. Distribution of the industrial facilities index, by town size

Industrial facilities	Towns		Towns		Towns		Total	
	1,600 to 2,499 No.	2,499 to 2,500 %	2,500 to 4,499 No.	4,499 to 4,500 %	4,500 to 8,499 No.	8,499 to 8,500 %	No.	%
14 to 99	12	25.6	9	25.7	6	18.2	27	23.5
100 to 149	23	48.9	12	34.3	4	12.1	39	33.9
150 to 159	11	23.4	9	25.7	19	57.6	39	33.9
160 or more	1	2.1	5	14.3	4	12.1	10	8.7
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	119.1		128.4		143.8		129.0	
Std. deviation	42.3		44.8		36.7		42.8	

The Living Facilities' index like the I.F. was directly related to town size; this trend can be seen in Table 25. It should be noted that while both the I.F. and L.F. ranged up to 200, the average I.F.'s were considerably higher than the corresponding mean L.F.'s. This would indicate few communities had relatively large amounts of all important living facilities.

The levels of the combined industrial and living facilities (I.+L.) index shown in Table 26 reflect the heavier weighting of the I.F. The relationship between this measure and town size naturally is the same as that of its two components; the mean I.+L. for Class 3 towns was 128.2 compared to a 114.7 average for Class 2 communities and a 103.1 average for Class 1 communities.

Table 25. Distribution of the living facilities index, by town size

Living facilities	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
43 to 65	17	36.2	5	14.3	2	6.1	24	20.9
66 to 75	18	38.2	10	28.6	4	12.1	32	27.8
76 to 99	10	21.3	9	25.7	10	30.3	29	25.2
100 or more	2	4.3	11	31.4	17	51.5	30	26.1
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	71.0		87.4		97.4		83.6	
Std. deviation	13.8		22.5		20.2		21.7	

Table 26. Distribution of the combined industrial-living facilities index, by town size

Industrial-living facilities	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
33 to 100	14	29.8	10	28.6	6	18.2	30	26.1
101 to 125	22	46.8	7	20.0	2	6.1	31	26.9
126 to 136	10	21.3	10	28.6	10	30.2	30	26.1
138 or more	1	2.1	8	22.8	15	45.5	24	20.9
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	103.1		114.7		128.2		113.9	
Std. deviation	28.0		29.0		24.9		29.4	

Measures Which Reflect the Locational Situation of
Iowa's Rural Communities

Location relative to urban centers

When making decisions regarding the placement of new or expanded operations, firms must look at a community's location relative to their sources of inputs and markets for output. Additionally, managers may be concerned with the types of special services and recreational-cultural opportunities accessible from a town.¹ Since the concentration of people in urban centers offers markets and provides support for special facilities and personnel, a community which is situated near these cities presumably is favored as a plant site.

The Index of External Urban Influence (E.U.I.) was developed to give a measure of the relative amount of big-city influence affecting the industrial development environments of Iowa's rural communities. This potential urban influence was believed to be dependent on the size of nearby cities and their remoteness; the larger and closer an urban center is to a small town, the more it has to offer area residents and the more accessible it is to them.

All cities with populations greater than 20,000 were considered urban centers for the purposes of this study. Towns with more than this minimum number of people were divided into three classes--20,000 to 39,999, 40,000 to 59,999 and 60,000 or more--and each class was given a size weight of 1.0, 2.0 and 3.0 respectively.

¹"Special services" would be those such as heart specialist consultations and hospital heart care centers; "special recreational-cultural" opportunities would be those such as the concerts by famous artists or orchestras.

If a city was within an 80 mile radius of a small town, it was assumed that it affected that community. The area between each surveyed town and its 80 mile limit was divided into four classes--under 20.0 miles, 20.0 miles to 39.9 miles, 40.0 miles to 49.9 miles, and 60.0 miles to 79.9 miles. Each interval was given a distance weight--8.0, 4.0, 2.0 and 1.0; all cities more than 80 miles from a town received a 0 distance weight with respect to that community. For a list of urban centers affecting at least one rural town studied, see Appendix D.

The magnitude of a particular city's influence on a survey town was gauged by an impact index derived as the product of that city's size weight and its distance weight relative to the community. For example, Ames, Iowa (population 39,400) is 12 miles from Nevada, Iowa (a survey town); therefore, the impact index of the former and the latter is 1.0 times 8.0 or 8.0. The total influence of all urban centers on this particular town was then represented by the sum of the impact indices corresponding to that community.

In order to measure the level of urban influence on each community relative to all others studied, the External Urban Influence (E.U.I.) index of each town was derived as the quotient of its total impact index and the mean total impact index. This relative was multiplied by 100 to obtain the final numerical values assigned to the communities.

Table 27 shows the distribution of the E.U.I.'s among the different population classes. It should be noted that Class 1 and Class 2 towns were subject to virtually the same level of urban influence on the average. Class 3 communities, on the other hand, were relatively isolated.

Table 27. Distribution of the index of external urban influence, by town size

External urban influence	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
6 to 29	10	21.3	5	14.3	5	15.2	20	17.4
30 to 59	8	17.0	8	22.8	10	30.3	26	22.6
60 to 109	9	19.1	9	25.8	8	24.2	26	22.6
110 to 179	10	21.3	5	14.3	7	21.2	22	19.1
180 or more	10	21.3	8	22.8	3	9.1	21	18.3
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	107.0		106.9		82.8		100.0	

The relative east to west location

Because of the tremendous size of the Chicago urban complex, its economic impact is unquestionably felt for a considerably greater distance than that of the cities considered in compiling the Index of External Urban Influence (E.U.I.). Proximity to this gigantic market and an excellent river route south to St. Louis, among other factors, has led to a concentration of industrial employment in the eastern part of Iowa (1, pp.4-5). Clark Bloom and Howard Swaine, while at the University of Iowa, hypothesized that additional manufacturing employment will tend to accrue to those areas already having a high level of it (1, p.3). In other words, it might be supposed that the rural communities close to the Mississippi River have some comparative advantage over those with more westerly locations in

attracting new industry.

In order to test this locational advantage proposition, Iowa was divided into four zones each approximately 90 miles across. The eastern-most point on the Iowa-Illinois border was designated as the benchmark for measurement, and boundary of Zones 1 and 2 was established 90 miles from there. Another boundary was established 90 miles from the first--the Zone 2 and 3 border, and likewise the line between Zones 3 and 4 was drawn. Zone 4 was bounded on the west by the Missouri River. Each zone was bounded on the north and south by Minnesota and Missouri. These borders are indicated on the map in Figure 1, page 9.

Eighteen of the surveyed towns, 16 percent of the total, were located in Zone 1 (eastern Iowa). The total population of these communities made up approximately 14 percent of the total residents of all communities studied and was divided among seven Class 1 towns, seven Class 2 towns, and four Class 3 towns.

Thirty-three of the surveyed towns, 29 percent of the total, were located in Zone 2 (mid-eastern Iowa). The population of these communities made up approximately 31 percent of the total residents of all communities studied and was divided among twelve Class 1 towns, eleven Class 2 towns, and ten Class 3 towns.

Thirty-six towns, 31 percent of those surveyed, were located in Zone 3. The total population of this group of communities made up about 29 percent of the total number of citizens in all towns studied and was divided among twenty Class 1 towns, six Class 2 towns, and ten Class 3 towns.

Twenty-eight towns, 24 percent of those surveyed, were located in Zone 4 (western Iowa). The total population of these communities made up

approximately one quarter of the total residents of all communities studied and was divided among eight Class 1 towns, eleven Class 2 towns, and nine Class 3 towns.

THE INDUSTRIALIZATION EXPERIENCED BETWEEN 1968 AND 1970
BY IOWA'S RURAL COMMUNITIES

Having looked at the activities of Iowa's rural industrial development organizations and discussed the composition of the environment in which they operate, the next step in the process of gauging their success in expanding local nonfarm employment opportunities is to examine the industrialization experienced by the towns in which they operated.

New Business Locations in Iowa's Rural Communities

Part or all of the new jobs created in a community may be the result of the location of new firms which have not previously been operating in the area. This survey sought information from the respondents concerning all "new businesses" employing three or more people which began operations in their communities between January 1, 1968 and December 31, 1970. Firms did not have to have been aided in their location by local development groups to be considered "new businesses".

The number of new business locations

Ninety-four percent of the respondents indicated that at least one new business came to their towns during the period under consideration. The likelihood that one or more new businesses settled in a community was directly related to its size; 87 percent of the Class 1 towns reported new business locations compared to 97 percent of the Class 2 towns and 100 percent of the Class 3 towns.

The distribution of the number of new firms locating in the survey communities is presented in Table 28. Seven towns experienced no new firm

Table 28. Distribution of new firms attracted to Iowa's rural communities, 1968-70, by town size

Number of New Firms	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	6	12.8	1	2.9	0	0.0	7	6.1
1	13	27.7	10	28.5	5	15.2	28	24.4
2	12	25.5	6	17.1	7	21.2	25	21.7
3	8	17.0	6	17.1	6	18.2	20	17.4
4	4	8.5	3	8.6	1	3.0	8	7.0
5	3	6.4	2	5.7	4	12.1	9	7.8
6	1	2.1	1	2.9	1	3.0	3	2.6
7	0	0.0	4	11.4	5	15.2	9	7.8
8	0	0.0	1	2.9	1	3.0	2	1.7
9	0	0.0	0	0.0	1	3.0	1	0.9
10 or more	0	0.0	1	2.9	2	6.1	3	2.6
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	2.1		3.3		4.4		3.1	
Median	2.4		3.1		3.6		2.9	

locations and one town saw the settling of fifteen new establishments during the 1968-70 period. This latter case, which was at least three times greater than the experience of 85 percent of the towns studied, would undoubtedly skew the distribution of any grouping in which the community was placed. Therefore, the median number of locations as well as the

average number of new firms is presented in the discussion below.

Both measures of central tendency indicate that the incidence of new firm location was directly related to town size. The means for population Class 1, Class 2, and Class 3 were 2.1, 3.3, and 4.4 respectively; the medians for these groups were 2.4, 3.1, and 3.6.

Sixty-nine percent of the respondents reported that development organizations in their communities had aided at least one new business in its location. On the average, 45 percent of the new companies in a town were helped and 13 percent were provided with a plant site or a building by these groups.

The likelihood that a new business received help from local development organizations was directly related to town size. On the average, 33 percent, 39 percent, and 56 percent of these companies were aided in small, medium, and large sized communities. There was also some evidence of a similar relation between town population and the proportion of new firms receiving land or building.

Table 29 shows the distribution of the number of new businesses locating in the survey communities according to the Organizational Activity (O.A.) indices of these towns. Both the means and medians point to a positive relation between the relative level of development group promotional efforts and the incidence of new firm location. There was, however, a notable drop in both statistics between the third and fourth O.A. classes.

One point should be made here regarding the comparison of any variable which seems to be positively related to town size, e.g. the number of new firms in a town, and the O.A., I.F., and I.+F. indices. Since each of these latter measures appeared to be directly related to community

Table 29. Distribution of the number of new firms attracted to Iowa's rural communities, 1968-70, by the index of development organization activity

Number of New Firms	Organizational Activity Index										Total No.	Total %
	0 to 49 No.	0 to 49 %	50 to 65 No.	50 to 65 %	66 to 79 No.	66 to 79 %	80 to 99 No.	80 to 99 %	100 or more No.	100 or more %		
0	6	27.3	0	0.0	1	3.7	0	0.0	0	0.0	7	6.1
1	4	18.2	8	30.8	7	25.9	6	26.1	3	17.6	28	24.3
2	3	13.7	6	23.2	4	14.8	9	39.2	3	17.6	25	21.8
3	4	18.2	6	23.1	5	18.6	3	13.0	2	11.8	20	17.4
4	3	13.6	1	3.8	3	11.1	0	0.0	1	5.9	8	7.0
5	0	0.0	2	7.7	3	11.1	3	13.0	1	5.9	9	7.8
6	1	4.5	1	3.8	1	3.7	0	0.0	0	0.0	3	2.6
7	1	4.5	1	3.8	1	3.7	2	8.7	4	23.5	9	7.8
8	0	0.0	0	0.0	1	3.7	0	0.0	1	5.9	2	1.7
9	0	0.0	1	3.8	0	0.0	0	0.0	0	0.0	1	0.9
10 or more	0	0.0	0	0.0	1	3.7	0	0.0	2	11.8	3	2.6
Total	22	100.0	26	100.0	27	100.0	23	100.0	17	100.0	115	100.0
Mean	2.1		2.8		3.3		2.7		5.1		3.1	
Median	2.3		2.8		3.3		2.6		4.5		2.9	

population, a positive correlation between any of them and the former type of variable might only be the reflection of the common correlation with town size. Any relation inferred from such evidence could be a spurious one.

New business locations generally were directly associated with the total measure of the local environment developed in this report--the I.+L. index. The means of the four index classes shown in Table 26 above--33 to 100, 101 to 125, 126 to 136, and 137 or more--were 2.8, 2.7, 3.0, and 3.7 respectively. However, two of the three towns that experienced more than 10 locations had I.+L.'s of less than 100.

Generally, neither a town's spatial location relative to urban centers nor its location relative to the state's eastern border appeared to be related to the number of new companies that came to town. The mean numbers of new firms for the five External Urban Influence (E.U.I.) index groupings shown in Table 27 above--6 to 29 (most isolated), 30 to 59, 60 to 109, 110 to 179, 180 or more--were 3.6, 2.9, 3.3, 3.2, and 2.7 respectively. The means for Zone 1 (eastern Iowa), Zone 2, Zone 3, and Zone 4 were 2.3, 3.1, 2.9, and 2.9.

The employment effect of new businesses

Some development organization leaders interviewed were proud, as well they should be, of the number of new businesses locating in their town. However, a better measure of the contribution of these firms to local economic activity is the number of new jobs they created. Therefore, the respondents were asked to give the average levels of employment of each new business in their communities for the months of July, 1970 and

December, 1970.

Data for two periods was collected in an attempt to check the seasonality of the jobs offered by new businesses. On the whole, there appeared to be only minor seasonal fluctuations in employment; the mean number of jobs created by new firms over all towns surveyed was 34 for July and 40 for December. Part of the difference between these two averages was explained by the opening of additional new businesses during the August through December period. Since seasonality seemed to be of minor importance and because data on the employment of expanded firms discussed below was based on their average December 1970 levels, all succeeding discussion of new business "employment" will refer to the number of jobs created by it as of the last month of 1970.

According to the respondents, new businesses employed 4,561 workers in the communities studied during December of 1970; Table 30 presented the distribution of the new firm employment in towns of different sizes. In one community, 395 individuals were reported working for such companies and eight towns had no new firms as of this date.¹ Again, both the mean and median number of jobs show that the absolute employment effect of these businesses is directly correlated with the community's population.

Generally, the level of new firm employment appeared to be positively associated with local development group activity as measured by Organizational Activity (O.A.) index. This trend is indicated by the statistics presented in Table 31. The warning stated above regarding the possible

¹While seven towns reported no new firm locations, one additional community experienced the failure of companies which arrived after January 1, 1968. Thus, by December 1970, eight towns had no new firm employment.

Table 30. Distribution of December 1970 employment of new firms in the community, 1968-70, by town size

Number of Full-time Workers	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
0	7	14.9	1	2.9	0	0.0	8	7.0
1 to 9.9	15	31.8	10	28.5	2	6.1	27	23.5
10 to 19.9	13	27.7	7	20.0	6	18.2	26	22.6
20 to 29.9	3	6.4	4	11.3	3	9.1	10	8.7
30 to 39.9	3	6.4	3	8.6	5	15.2	11	9.6
40 to 49.9	2	4.3	1	2.9	3	9.1	6	5.2
50 to 99.9	2	4.3	6	17.2	7	21.1	15	13.0
100 to 199.9	1	2.1	2	5.7	6	18.2	9	7.8
200 to 299.9	1	2.1	1	2.9	0	0.0	2	1.7
300 or more	0	0.0	0	0.0	1	3.0	1	0.9
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	22.2		36.8		67.6		39.7	
Median	11.2		19.3		41.7		18.7	

effects of common correlation of variables with town size should be remembered here.

A direct correlation between new firm employment and the I.+F. index was also observed. The median employment for each of the index groupings discussed above--33 to 100, 101 to 125, 126 to 136, and 137 or more--was 15, 15, 19, and 35 respectively. However, this gauge of the local

Table 31. The December 1970 employment of new firms in survey towns, by organizational activity index

Number of Full-time Workers	Organizational Activity Index										Total	
	0 to 49 No. %	50 to 65 No. %	66 to 79 No. %	80 to 99 No. %	100 or more No. %	No.	%	No.	%	No.	%	
0	7 32.0	0 0.0	1 3.7	0 0.0	0 0.0	8	7.0					
1 to 9.9	5 22.7	9 34.6	5 18.5	4 17.4	4 23.4	27	23.5					
10 to 19.9	5 22.7	8 30.8	6 22.2	5 21.8	2 11.8	26	22.6					
20 to 29.9	0 0.0	3 11.5	4 14.8	2 8.7	1 5.9	10	8.7					
30 to 39.9	2 9.1	1 3.8	2 7.4	3 13.0	3 17.6	11	9.6					
40 to 49.9	0 0.0	4 15.5	0 0.0	1 4.3	1 5.9	6	5.2					
50 to 99.9	0 0.0	0 0.0	7 26.0	6 26.2	2 11.8	15	13.0					
100 to 199.9	1 4.5	1 3.8	2 7.4	2 8.6	3 17.7	9	7.7					
200 to 299.9	2 9.0	0 0.0	0 0.0	0 0.0	0 0.0	2	1.8					
300 or more	0 0.0	0 0.0	0 0.0	0 0.0	1 5.9	1	0.9					
Total	22 100.0	26 100.0	27 100.0	23 100.0	17 100.0	115	100.0					
Mean	35.0	22.6	35.1	44.7	72.2	39.7						
Median	9.0	10.5	23.8	31.7	35.0	18.7						

environment was also directly related with town size.

Whether a community was close to several urban centers or relatively isolated did not seem to be associated with the number of workers employed by its new businesses. The average number of new jobs created by these firms in the five E.U.I. classes discussed above--6 to 29, 30 to 59, 60 to 109, 110 to 179, and 180 or more (least isolated)--was 33, 42, 35, 65 and 23 respectively. It should be noted that, in general, the least isolated communities experienced considerably less expansion of local job opportunities than survey towns located elsewhere.

The number of jobs offered by a new plant facility in a community gauges only the direct employment effect of business location. New firms, particularly if their payrolls are large relative to the total town work force, will generate secondary employment effects. Some of these repercussions can be recorded by gathering data on local business expansions, and others may appear in the statistic on new business, i.e. company A's location induces company B to settle also. However, the information collected in this survey did not permit differentiation of firms locating (expanding) independently from those which came (grew) as a result of another company's arrival.

Total expenditures for construction and remodeling by new and expanding businesses can give a rough idea of the magnitude of the additional employment created by building work done for these firms. Data obtained from the respondents indicated that an average of \$270,000 was spent by new businesses for construction and renovating of plant facilities during 1968-70. The amount spent appeared to be directly related to town size; the mean expenditures for population Classes 1, 2, and 3 were \$116,000, \$425,000 and

\$358,000 respectively. The median expenditures for each grouping were \$33,000, \$108,500, and \$225,000. It should be noted, however, that many of those interviewed did not know the amounts spent by some of the new businesses in their communities. The means and medians presented above, therefore, undoubtedly understate the actual situation.

The Expansion of Old Businesses in Iowa's Rural Communities

The industrialization of a community may be furthered by the growth of businesses already in the community as well as by the location of new firms. Therefore, the respondents in the survey towns were asked to provide information on any "old businesses" that had expanded "significantly" during the 1968-70 period. An "old business" was defined as any locally owned firm or division of a company owned by outside investors which was a going concern in the community prior to January 1, 1968. To have expanded "significantly" during the three-year period under study, an old business must have added the equivalent of three full-time workers to its payroll.

The number of firms expanding significantly

Eighty-two percent of the respondents reported that at least one old business had expanded significantly between 1968 and 1970. Just as the chances that a community had experienced new business location were greater the larger its 1970 population, so the likelihood that it had firms grow significantly increased with its size. In 72 percent of the Class 1 towns, the respondents indicated that business expansion had occurred compared to 83 percent and 94 percent of those questioned in Class 2 and Class 3 towns.

One community reported fifteen significant business expansions, and twenty-one towns experienced no expansions during 1968-70. A total of 288 companies in the communities studied grew significantly and a typical town was characterized by 2.5 expansions.

Trends in the population class means and medians suggested a direct association between the level of old business growth and community size. The average number of expansions occurring in towns having populations between 1,600 and 2,500 (Class 1) was 1.7 firms compared to 2.5 firms in towns with 2,500 and 4,500 residents (Class 2) and 3.7 firms in towns with 4,500 to 8,500 people (Class 3); the medians for these groupings were 1.9, 2.7, and 3.6.

Only about one-fourth of the firms expanding in a typical town were aided in any way by local development organizations compared to 45 percent of the new firms. While the proportion of expanding firms that received aid appeared to be positively related to town size, the average proportion aided reached a maximum of only 30 percent for Class 3 towns; as noted above, development groups in large towns helped an average of 56 percent of the new firms locating in them. Further, less than 6 percent of the total expanded businesses identified received help in the form of land for plant sites or buildings for operations, while nearly 13 percent of the new businesses received such aid. This evidence seems to support Gilmore's conclusion about development organizations in general:

Assisting existing industry to expand was mentioned as an objective second only to attracting new industry, but few groups gave evidence of comprehensive plans or programs toward this end (5, p. 17).

There seemed to be good evidence of a direct association between the number of firm expansions in a town and its level of living facilities.

The average number of significant expansions in each of the L.F. index classes shown in Table 25 above--43 to 65 (relatively few facilities), 66 to 75, 76 to 99, 100 or more--were 2.0, 2.2, 2.6, and 3.1 respectively. However, the apparent relation may only be the reflection of the common correlation of both L.F. and number of expansions with town size.

There was little apparent correlation between the measure of industrial facilities and the number of firms that expanded significantly during 1968-70. The means of the four I.F. classes shown in Table 24 above--14 to 99 (relatively few facilities), 100 to 149, 150 to 159, and 160 or more--were 2.8, 1.8, 2.7, and 3.7 respectively.

Neither the relative isolation of a community nor its position east to west in the state appeared to be related in any definite way to the old business expansions it experienced.

The employment effect of business expansion

For the purposes of this study, the important measure of the impact of old business expansion on the local economy is the employment generated by the growth of these firms. Therefore, the respondents were asked to give the average additional employment of each expanded firm in his community for the month of December, 1970. In other words, those interviewed were asked how many more people did the company have on its payroll in this month than it did on the average in December, 1967.

A total of 5,580 jobs were reported created in the towns surveyed by old business expansion, and the employment base of an average community increased by 48.5 workers. In one town, 700 workers were reportedly added to the payrolls of growing businesses and in twenty-one communities, no

expanded firm employment was reported.

Table 32 shows the distribution of the total number of additional workers employed by expanded firms per December, 1970 among towns of different sizes. It is evident from differences in either means or medians of various population classes that the absolute employment effect of old business expansion was positively associated with the size of the town in which it occurred. The average number of additional workers employed was 27, 53, and 74 for Class 1, 2, and 3 communities respectively; medians for these same groups were 14, 21, and 43.

Little of the difference in the level of additional employment by expanded firms among the survey towns appeared to be related to variations in their industrial and living facilities. The mean job opportunity growth due to business expansion in the four I.+L. index classes discussed above--33 to 100, 101 to 125, 126 to 136, and 137 or more--was 48, 57, 28, and 64 respectively.

The relative isolation of a community did not appear to be associated with the additional employment created by expanded business. Like the new firm employment situation, however, the least isolated towns--those with E.U.I.'s of 180 or more--experienced the least employment growth from business expansion on the average.

As in the case of new business location, the respondents were asked to give the approximate expenditures for construction and remodeling by each old business that expanded significantly during 1968-70. Again, it was hoped this information could provide some clue as to the extent to which local expansion of plant facilities fostered additional local employment. In many instances, however, the amounts spent by particular

Table 32. The number of additional workers employed in December, 1970 by expanded firms, 1968-70, by town size

Number of full-time workers	Towns		Towns		Towns		Total	
	1,600 to 2,499 No.	%	2,500 to 4,499 No.	%	4,500 to 8,499 No.	%	No.	%
0	13	27.8	6	17.2	2	6.1	21	18.2
1 to 9.9	9	19.1	5	14.3	4	12.1	18	15.6
10 to 19.9	4	8.5	6	17.1	3	9.1	13	11.3
20 to 29.9	7	14.9	4	11.4	6	18.2	17	14.8
30 to 39.9	3	6.4	4	11.4	1	3.0	8	7.0
40 to 49.9	1	2.1	5	14.3	2	6.1	8	7.0
50 to 99.9	5	10.6	2	5.7	4	12.1	11	9.6
100 to 199.9	5	10.6	0	0.0	8	24.2	13	11.3
200 to 299.9	0	0.0	2	5.7	2	6.1	4	3.5
300 or more	0	0.0	1	2.9	1	3.0	2	1.7
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean	27.2		52.8		74.3		48.5	
Median	13.8		21.3		42.5		29.1	

companies was not known to those interviewed.

The distribution of the total known expenditures by the firms expanding in the survey communities is presented in Table 33. Both the means and medians shown there rise dramatically as town size increases. This suggests that, during the plant investment period at least, business expansion fostered more additional local employment and income in larger

Table 33. Expenditures made for construction and remodeling by expanded firms, 1968-70, by town size

1,000's of Dollars	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
\$10 or less	16	36.4	9	28.1	3	13.0	28	28.4
\$10 to \$49.9	5	11.4	4	12.4	2	8.6	11	11.0
\$50 to \$99.9	3	6.8	4	12.5	2	8.8	9	9.1
\$100 to \$199.9	7	15.9	2	6.3	1	4.3	10	10.1
\$200 to \$299.9	6	13.6	6	18.8	2	8.8	14	14.1
\$300 to \$399.9	1	2.3	2	6.3	1	4.3	4	4.0
\$400 or more	6	13.6	5	15.6	12	52.2	23	23.3
Total	44	100.0	32	100.0	23	100.0	99	100.0
Mean	\$178		\$200		\$510		\$263	
Median	\$67		\$88		\$417		\$115	
No information	3		3		10		16	
Total	47		35		33		115	

towns than in smaller towns.

The relative importance of expanded firm employment

As mentioned in the previous section, one community experienced an expansion of its employment base of 700 workers as a result of old business growth. Some further investigation established the plausibility of this figure, and that magnitude was primarily dependent on increased

demand for the products of the companies involved. Because it was 325 greater than the next highest number of additional workers and 305 greater than the highest level of employment by new firms, inclusion of this value in an array can skew the distribution and distort its mean considerably. Therefore, this unique case has been excluded from calculations where noted. However, the tremendous impact of old business growth on the local employment situation in this one community called into question the relative importance of the two components of the industrialization process-- firm location and expansion, in increasing job opportunities in rural Iowa communities.

A measure called the Positive Employment Effect (P.E.E.) of industrial development, which is simply the December new business employment and expanded business employment added together, was calculated for each of the towns studied in order to check the contribution of old and new firms. The total new firm employment (N.F.E.) and total expanded firm additional employment (E.F.E.) for all communities were then divided by the total P.E.E.--10,141. These two quotients were 0.45 and 0.55 indicating that on the average, 45 percent of the jobs created by industrialization during 1968-70 came from new business locations and the remainder resulted from old business growth. However, when the extreme case of 700 workers is excluded from the calculations, the ratios become 0.48 and 0.52 respectively. Apparently then, new and expanded companies contributed nearly equally to the growth of employment opportunities in the universe in the period studied.

When the N.F.E./P.E.E. and E.F.E./P.E.E. ratios were computed for the three population classes, the figures shown in Table 34 below resulted.

Table 34. The relative importance of new and expanded firm employment in towns of different sizes

P.E.E. Ratio	Towns 1,600 to 2,499	Towns 2,500 to 4,499	Towns 4,500 to 8,499	Total
<u>With Extreme Value</u>				
N.F.E./P.E.E.	0.449	0.411	0.476	0.450
E.F.E./P.E.E.	0.551	0.589	0.524	0.550
<u>Without Extreme Value</u>				
N.F.E./P.E.E.	0.449	0.524	0.476	0.480
E.F.E./P.E.E.	0.551	0.476	0.524	0.520

It can be seen from this table that new firm employment was somewhat more important in large communities than in small ones. The mean N.F.E./P.E.E. for Class 1 communities was 0.449 compared to a quotient of 0.476 for Class 3 towns. The large effect of the 700 worker extreme case on the averages for Class 2 should also be noted; its elimination moves medium sized towns from those least affected by new firm locations to the grouping which received the greatest impact.

Business Failures in Iowa's Rural Communities

A complete assessment of the progress of industrialization in a community during any time period must take into account the loss of local job opportunities due to business failure. Each of the respondents was asked to name all firms employing three or more people that had gone out

of business during 1968-70. They were instructed not to include in their lists those companies which had simply changed owners.

The number of firms going out of business

Half of the survey towns reportedly experienced at least one firm failure during the three year period of study. In one community, four businesses closed while no firms quit in fifty-eight towns. On the average, 0.7 firms failed per town.

Class 1 communities were less likely to have witnessed business failure than Class 2 or Class 3 communities; companies went bankrupt in 43 percent of the small towns, 57 percent of the medium sized towns and 52 percent of the large towns. Class 1 and Class 2 communities, however, generally experienced more business failures than Class 3 communities; on the average, 0.7 firms failed in small towns, 0.8 failed in medium size towns and 0.5 failed in large towns.

A distribution of the number of business failures according to the O.A.'s of the towns in which they occurred indicated there is no apparent relation between the former and the latter variables. The mean number of closings for each of the five Organizational Activity index classes used in Table 31 above--0 to 49 (least active), 50 to 65, 66 to 79, 80 to 99, and 100 or more--were 0.8, 0.6, 0.9, 0.4, and 0.6 respectively.

The probability of business failure was not associated with relative availability of industrial and living facilities. For the four I.+L. index classes used in Table 26 above--33 to 100, 101 to 125, 126 to 137, 138 or more--the average number of failures were 0.7, 0.6, 0.6, and 0.6 respectively.

The employment effect of business failures

The respondents reported that 1,973 jobs were lost in their communities due to business failures during 1968-70. On the average, 18 workers per town were forced to look for different employment because companies quit operations. Even though the mean number of firms going out of business in each of the three population classes varied only slightly, the number of jobs lost on the average in Class 3 towns was considerably larger than it was in either Class 1 or 2 communities; on the average, 37.0 employment opportunities were eliminated by business failure in large towns compared to mean losses of 11.0, and 8.8 in small and medium sized towns. Apparently, Class 3 towns experienced the failure of larger business than did communities with fewer residents.

In addition to providing the number of workers losing their jobs, those interviewed were asked to describe the average work-finding experience of the people involuntarily unemployed due to business failure. From their responses, it was determined 1) five individuals retired; 2) 37 percent of the job seekers "had some difficulty" securing substitute employment; 4) 15 percent of the job seekers were unable to obtain another job in or near the town where they formerly worked; and 5) job seekers in Class 3 communities, on the average, had the most difficulty finding employment while those in Class 1 towns had the least difficulty during the three year period studied.

The Absolute Employment Effect of Industrialization

The "success" of industrial development in Iowa's rural communities during 1968-70 could be measured by the net number of firms locating or

expanding in them. However, such a magnitude would give little clue of the extent to which the income-producing bases of these towns had been altered. Therefore, in order to gauge the absolute impact of industrialization in the surveyed communities, the number of jobs lost in each town due to business failure was subtracted from that community's P.E.E. (Positive Employment Effect) value. This difference, designated the Net Employment Effect (N.E.E.) of industrialization, was used as the measure of absolute "success" of industrial development efforts.

The total N.E.E. for the 115 towns in the universe was 8,168, i.e. on balance, the employment opportunities in the state's farming communities with development organizations rose by 8,168 within the three-year period under study. During this time, new and expanding companies added an average of 71 net workers to their payrolls per town; the standard deviation about this mean was 102.

At one extreme of "success", a community reported the net loss of 213 jobs (N.E.E.= -213); this figure was 150 greater than the next largest loss. At the other extreme, a town experienced a net increase in employment of 719 workers (N.E.E.=719) which was 342 more jobs than were added in the next largest addition. If these two extreme cases are excluded from all calculations as being highly atypical, the total net jobs created by industrialization drops to 7,662, the mean Net Employment Effect falls to 68, and the standard deviation is reduced to 78.

The relation of the N.E.E. to other community characteristics

Table 35 shows the distribution of the Net Employment Effect among towns of different sizes. It is evident from either the mean or median

Table 35. Net employment effect (N.E.E.) of industrialization, 1968-70, by town size

Net employment effect	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
-100 or less	0	0.0	0	0.0	1	3.0	1	0.9
-99 to -50	0	0.0	1	2.9	1	3.0	2	1.7
-49 to 0	5	10.6	1	2.9	0	0.0	6	5.2
1 to 50	28	59.6	21	60.0	10	30.2	59	51.3
51 to 100	9	19.2	5	14.2	4	12.2	18	15.7
101 to 150	5	10.6	2	5.7	9	27.3	16	13.9
151 to 200	0	0.0	1	2.9	2	6.1	3	2.6
201 to 300	0	0.0	3	8.5	3	9.1	6	5.2
300 or more	0	0.0	1	2.9	3	9.1	4	3.5
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean (with extremes)	38.4		80.8		107.2		71.0	
Std. deviation	49.9		132.5		120.4		102.0	
Mean (without extremes)	38.4		62.0		117.2		67.8	
Std. deviation	47.8		74.0		113.2		78.3	
Median	31.8		37.5		104.2		41.3	

N.E.E.'s shown that larger communities benefited more from industrial development in absolute terms than did smaller communities. The average N.E.E.'s for population Class 1, Class 2 and Class 3 were 38, 81, and 107

respectively. However, the medians suggest that the experiences of the small and medium sized towns were not as different as the means imply.

There appeared to be a positive correlation between the activity of local development groups, as measured by the Organizational Activity (O.A.) index, and a community's Net Employment Effect (N.E.E.). Both the median N.E.E.'s and the mean N.E.E.'s, calculated with the two extreme cases excluded, of the O.A. index classes discussed previously provided evidence of such an association. The medians of the five groupings--0 to 49 (least active), 50 to 65, 66 to 79, 80 to 99, and 100 or more--were 26, 32, 42, 71, and 64 while the averages for the same classes were 36, 55, 70, 92 and 94 respectively.¹ This relationship, however, could have simply been a reflection of the common correlation of both variables with town size.

Differences in the Net Employment Effect of industrialization among the survey towns did not seem to be related to variations in the industrial and living facilities available in these communities. Even when the extreme cases are excluded, the means of the I.+L. index classes--33 to 100 (least facilities), 101 to 125, 126 to 137, and 138 or more--show no definite trend. The averages characterizing these groupings were 72, 54, 53, and 99 respectively.

Likewise, the relative closeness of a town to large urban centers did not appear to be associated with its absolute level of success in industrial development. The means of the five E.U.I. classes--6 to 29 (most

¹The O.A. of the most successful community (N.E.E.=700) was between 50 and 65 while that of the least successful town (N.E.E.= -213) was greater than 100. When the N.E.E.'s of these towns are included in the mean calculations, the averages for their respective O.A. classes were 80 and 76 compared to the adjusted values of 55 and 94 given above.

isolated), 30 to 59, 60 to 109, 110 to 179, and 180 or more--calculated without the extreme values were 72, 73, 58, 88 and 48.

Two aspects of the relation between relative isolation and increases in local employment opportunities deserve note. First, towns closest to large urban areas, i.e. those communities with E.U.I.'s of 180 or more, generally experienced considerably less net employment growth than did more isolated communities. This situation may have arisen because these towns could rely upon nearby cities for service personnel which would be provided locally in communities more removed from urban centers. Another possible explanation of this finding is that many of the least isolated towns were small communities which, as noted above, tended to experience less industrialization.

Second, towns which were somewhat isolated, i.e. having E.U.I.'s of 110 to 179, experienced more industrialization success as measured by either the Net Employment Effect or the number of firms locating and expanding compared with either the hinderland communities, E.U.I.'s of 6 to 29, or the least isolated communities. This result may have arisen because these towns are favorably located for both industrial and service industry growth; they are near enough to markets and labor pools but far enough to require a substantial local service base. When detailed information collected by the study is analyzed, perhaps this hypothesis can be tested.

The average N.E.E.'s for East-West Zones 1, 2, and 3 when all towns were considered, were quite similar, 73, 72, and 78 respectively, and the mean for Zone 4 was notably low at 59. If the extreme N.E.E. values are excluded, however, the industrial development in Zone 2 (mid-eastern Iowa)

communities appears to have been somewhat more successful in an absolute sense than that of towns in other parts of the state. Their adjusted mean N.E.E. of 81 is nearly nine jobs greater than that of the next highest division, Zone 1 (eastern Iowa).

The concentrative impact of industrialization

In order to determine if a disproportionate amount of the net employment from industrialization accrued to rural communities within a certain size range or located in a particular part of the state, the distribution of the total N.E.E.'s among the population classes and East-West zones was compared to distribution of total employment among these groupings. The 1965 base employment in each of the surveyed towns was estimated as discussed in the next section of this report. The total number of workers in Classes 1, 2, and 3 and Zones 1, 2, 3, and 4 were also estimated, and these sums were divided by the total employment in all communities. Likewise, the total N.E.E. for each classification was expressed as a ratio of the total N.E.E. for all towns. Each of these calculations were performed with and without the extreme N.E.E. cases and the resulting four sets of quotients are shown in Table 36.

Considering all the survey towns, industrialization appears to have concentrated new employment in towns with populations between 2,500 and 4,499; Class 2 towns had only 28 percent of the base employment, but received 35 percent of the new net jobs. Communities in Zones 1 and 3 seem to have gained a disproportionate share of the total net employment--16 percent and 35 percent compared to 14 percent and 29 percent of the base employment respectively.

Table 36. The net employment effect ratios and the base employment ratios of two community groupings

Classifying Criteria	With Extreme Values		Without Extreme Values	
	$\frac{N.E.E._i}{\sum N.E.E._i}$	$\frac{Base_i}{\sum Base_i}$	$\frac{N.E.E._i}{\sum N.E.E._i}$	$\frac{Base_i}{\sum Base_i}$
Population				
Towns 1,600 to 2,499	0.221	0.232	0.235	0.239
Towns 2,500 to 4,499	0.347	0.276	0.275	0.275
Towns 4,500 to 8,499	0.433	0.492	0.490	0.486
East-West Location				
Zone 1 (eastern Iowa)	0.160	0.144	0.171	0.148
Zone 2 (mid-eastern Iowa)	0.292	0.312	0.339	0.300
Zone 3 (mid-western Iowa)	0.346	0.294	0.275	0.294
Zone 4 (western Iowa)	0.202	0.251	0.215	0.258

When the extreme N.E.E. values are excluded, there is little evidence of concentration occurring in towns of a particular size. Rural communities in the eastern half of the state, particularly those in Zone 2, did offer more new jobs than they might be expected to if employment patterns had remained unchanged from the base period.

The Relative Success of Industrial Development

Obviously, the addition of 100 workers to company payrolls in a town of 2,500 has a different effect on the local state of affairs than does the same absolute increase in a community of 3,500 people. While the Net Employment Effect provides a measure of the absolute success of industrialization in the survey towns, it fails to give much insight into the impact of these net jobs on the local economic situation. A gauge of

relative success was needed for measuring this impact, for assessing the success of local development organizations in furthering employment growth and for appraising the importance of other community characteristics in the process of industrialization.

The measure of relative success

The Index of Relative Success (I.R.S.) was the measure developed to meet the needs mentioned above. As a first step in compiling this gauge for each of the survey towns, a base on measurement was chosen--the estimated 1965 employment of these communities. Employment was used instead of other alternatives such as population, because the interest of this study was focused on the expansion of nonfarm job opportunities in the state's rural communities. Actual 1960 employment statistics were available from census reports for all towns with populations (1960) greater than 2,500. Using this data a regression was run to determine the proportion of the 1960 residents working during April of that year. A model of the form $\text{Employment} = A (\text{Population}) + e$ was fitted and the coefficient "A" was found to be 0.48 with an R^2 of 0.99. The number of employed citizens in towns less than 2,500 was then determined by multiplying each community's Population by 0.48. Since actual 1970 employment statistics for April of 1970 were unavailable for any of the communities, the above estimation procedure was used to determine the 1970 working force in all towns in the universe. The 1965 base employment for each of these communities was found linearly interpolating between their 1960 and 1970 employment levels. After a town's N.E.E. was added to its base employment, its Index of Relative Success (I.R.S.) was computed by dividing this sum by

the base employment and multiplying the quotient by 100.

The set of I.R.S.'s determined by the method described above was made up of values ranging from 93.0 to 156; these two values corresponded to the two extreme N.E.E. cases noted in the previous section and are excluded from calculations where noted. A mean value of 105.4 and a standard deviation of 6.9 also characterized the array of I.R.S.'s; these statistics became 105.1 and 4.6 when the extreme values were eliminated. On the average then, industrialization enlarged the estimated 1965 employment base of the communities surveyed by 5.4 percent.

The relation of the I.R.S. to other community characteristics

Table 37 shows the distribution of the Index of Relative Success among towns of different sizes. It is readily apparent from the means of the three population classes, especially when the extreme values are excluded, that simply being large (or small) did not guarantee a community a disproportionate amount of relative "success" from industrial development.

From Table 38, which shows the distribution of the Index of Relative Success according to the O.A.'s of various towns, a positive correlation between these two variables can be seen. The mean Indices of Relative Success for the first four Organizational Activity index classes, especially the set which excludes the extreme values, indicate a strong upward trend. Those communities with organizational activity ratings greater than 100 had notably less success, on the average, as measured by the I.R.S. than towns whose O.A.'s fell in the 66 to 99 range. This fact suggests that either there is a point of diminishing returns to development organization efforts or perhaps improper weights were given to the various

Table 37. Distribution of the Index of Relative Success, by town size

Index of Relative Success	Towns 1,600 to 2,499		Towns 2,500 to 4,499		Towns 4,500 to 8,499		Total	
	No.	%	No.	%	No.	%	No.	%
93 to 100	7	14.9	2	5.7	3	9.1	12	10.4
101 to 102	8	17.0	13	37.1	10	30.3	31	27.0
103 to 104	15	31.9	7	20.0	1	3.0	23	20.0
105 to 108	5	10.7	5	14.3	14	42.4	24	20.9
109 or more	12	25.5	8	22.9	5	15.2	25	21.7
Total	47	100.0	35	100.0	33	100.0	115	100.0
Mean (with extremes)	105.1		106.3		104.7		105.4	
Mean (without extremes)	105.1		105.0		105.1		105.1	

types of group activities when the O.A. index was constructed.

Communities with an abundance of industrial facilities, as gauged by the I.F. index, were also those which had less "success" in increasing local employment opportunities, on the average. Within all three population classes, communities with I.F.'s of 150 or less had mean I.R.S.'s equal to or greater than towns with index values of 151 or more; even with the extreme case of 156 excluded from the calculations, the average I.R.S. for the first I.F. grouping in Class 2 was 105.1 compared to a mean of 103.7 for the second I.F. grouping. Overall, for the 66 towns with I.F.'s of 150 or less, the mean Index of Relative Success was 105.9, which was 1.3 higher than the average I.R.S. of the forty-nine communities with

Table 38. Distribution of the Index of Relative Success, by the organizational activity index

Index of Relative Success	Organizational Activity Index											
	0 to 49		50 to 65		66 to 79		80 to 99		100 or more		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
93 to 100	6	27.3	4	15.4	0	0.0	1	4.4	1	5.9	12	10.4
101 to 102	7	31.8	5	19.2	9	33.3	6	26.1	4	23.5	31	27.0
103 to 104	3	13.6	7	26.9	7	25.9	2	8.7	4	23.4	23	20.0
105 to 108	2	9.1	4	15.4	4	14.9	7	30.4	7	41.3	24	20.9
109 or more	4	18.2	6	23.1	7	25.9	7	30.4	1	5.9	25	21.7
Total	22	100.0	26	100.0	27	100.0	23	100.0	17	100.0	115	100.0
Mean (with extremes)	103.6		106.4		105.9		106.3		104.2		105.4	
Mean (without extremes)	103.6		104.4		105.9		106.3		104.9		105.1	

I.F.'s greater than 150. It should be noted that the above difference is not monumental and the measure of industrial facilities does not reflect any quality differences among towns.

Bountiful living facilities appeared to have been positively associated with the level of a community's I.R.S., particularly if its population was greater than 2,500. The fifty-six communities with L.F.'s of 75.0 or less averaged an Index of Relative Success of 104.7 while the fifty-nine towns whose L.F.'s were 76.0 or more had a mean I.R.S. of 106.0. Within population Classes 2 and 3, the latter L.F. grouping had an average I.R.S. which was 1.0 higher than the former grouping when the

extreme values are eliminated. Towns in Class 1 with L.F.'s of 75.0 or less, on the other hand, had a mean I.R.S. of 105.2 compared to one of 104.8 for small towns with L.F.'s of 76.0 or more. Again, it should be cautioned that the gauge of living facilities assumes constant quality of its components among all communities.

The relative isolation of a community did not generally seem to be related to relative expansion of its work force. The means of the five E.U.I. classes discussed several times above--6 to 29 (most isolated), 30 to 59, 60 to 109, 110 to 179, and 180 or more--were 105.0, 105.7, 106.3, 105.9, and 103.6 respectively. As was the situation with N.E.E., the least isolated communities, i.e. those with E.U.I.'s of more than 180, showed considerably less success in increasing nonfarm jobs than the towns located farther from large cities.

In terms of the east to west positioning of the communities surveyed, the mean I.R.S.'s for the towns in each of the four East-West zones, excluding the extreme values, were 105.2, 105.4, 105.3, and 104.1 for Zones 1 (eastern Iowa), 2, 3, and 4 respectively. While the absolute measure of "success" suggested that the more eastern a town, the higher its chances of being favored by industrialization, the Index of Relative Success indicates that only the communities in the western quarter of Iowa experienced notably less relative employment expansion than those located elsewhere in the state.

The importance of new and expanded business employment

Previously, the relative importance of new firm employment (N.F.E.) and expanded firm employment (E.F.E.) to the total positive employment

effect of industrialization (P.E.E.) was discussed. A further question in the vein of the earlier inquiries might arise at this point--did communities experiencing a high level of relative "success" in industrial development, on the average, receive a larger proportion of their additional jobs from new or expanded businesses.

Table 39 below shows the mean N.F.E./P.E.E. and E.F.E./P.E.E. ratios for towns with various levels of I.R.S. It can readily be seen from this table that even when the extreme value is excluded in calculations, there is a strong negative relation between the N.F.E./P.E.E. quotient and the Index of Relative Success.¹ This suggests that old business expansion was the primary source of new nonfarm job opportunities in towns where industrialization was highly "successful". However, evidence presented earlier in this chapter indicated that local development organizations made little definite effort to assist these firms in the expansion.

Table 39. The importance of new and expanded firm employment in towns with different I.R.S.'s Index of Relative Success

Mean Ratios	Index of Relative Success					Total
	100 or Less	101-102	103-104	105-108	109 or More	
With Extreme Values						
N.F.E./P.E.E.	0.609	0.580	0.484	0.539	0.333	0.450
E.F.E./P.E.E.	0.301	0.420	0.516	0.461	0.667	0.550
Without Extreme Value						
N.F.E./P.E.E.	0.609	0.580	0.484	0.539	0.390	0.480
E.F.E./P.E.E.	0.301	0.420	0.5.6	0.461	0.610	0.520

¹It will be remembered that the town which experienced an E.F.E. of 700 was judged atypical in the earlier discussion of the P.E.E.

Analysis of the Variability in Industrial Development Success

Thus far, this report has described various community characteristics, particularly local development organization activity, that might be expected to effect the industrial development of rural towns. The associations of these factors with each other and with the measures of industrialization success have been discussed. In this section, regression analysis is employed to analyze the variability in those gauges of success among the survey towns. Through use of this tool, inferences are made concerning the relative importance of several different community characteristics in explaining a town's industrial success.

The variables

The first community characteristic discussed in this report was population, and therefore it seemed appropriate that this factor be considered first as an independent variable effecting industrial development. A large number of local residents gives new or expanding firms a bigger native labor force with more skills from which to draw employees. Further, a large community generally has more adequate and diverse service sectors, both business and personal, on which companies and their employees can rely. Finally, a big town offers a better market to service firms than a small town does. Thus, it was assumed that population had a positive effect on a community's industrial development.

Local development organizations aim to make company decision makers aware of their community and its industrial opportunities. Further, they try to make settling in their town easier for new firms. Finally, some groups attempt to make the terms of location in their community favorable

by offering special inducements. Presumably, the more active these groups are, the more new firms their town will attract. Therefore, it was assumed that organizational activity, as measured by the O.A. index, had a positive effect on a community's industrial development.

The more types of industrial facilities a town has to offer, the better its chances of meeting the needs of new and expanding firms. Further, the greater the quantity of each type of input it can make available, the more likely that these needs can be met without adversely affecting prices and costs. Presumably, a town with relatively more industrial facilities will attract more new firms and keep more growing firms from leaving. Thus, it was assumed that the relative level of community's industrial facilities, as measured by the I.F. index, had a positive effect on its industrial development.

A town which has many of the living facilities discussed earlier presumably is a relatively attractive place to reside. This characteristic makes it easier for new and expanding firms to attract skilled workers from outside that community. Further, native workers will perhaps be willing to give up some income, i.e. accept lower wages, to remain in a pleasant community. Finally, if local living facilities include a vocationally oriented instruction of higher learning, a means exists for training or retraining workers. Thus, it was assumed that the relative level of a community's living facilities, as measured by the L.F. index, had a positive effect on its industrial development.

Being located close to urban centers places new and expanding firms near a source of skilled labor and special business services. Further, such proximity puts some firms nearer to output markets. Thus, it was

assumed that a community's relative isolation, as reflected by the External Urban Influence (E.U.I.) index, had a positive effect on its industrial development.

The more time local development leaders devote toward furthering their town's industrialization, the more projects aimed at this goal that are likely to be initiated and the more prospects that are likely to be contacted. Further, the better trained and more experienced the local leaders are, the more skill and expertise they can bring to bear in their negotiations with prospective new firm owners, town councilmen, and members of other groups. Thus, it was assumed that the relative level of a community's development leadership, as measured by the Developmental Leadership (D.L.) index, had a positive effect upon its industrial development.

To review, six independent variables were identified: 1) 1960 town population; 2) the Organization Activity (O.A.) index; 3) the Industrial Facilities (I.F.) index; 4) the Living Facilities index; 5) the External Urban Influence (E.U.I.); and the Developmental Leadership (D.L.) index. It was hypothesized that each of the factors had a positive effect on a town's industrial development success.

Three measures of industrial development success were used as the dependent variables of various regression equations: 1) the Net Employment Effect (N.E.E.); 2) the New Firm Employment Effect (N.F.E.); and 3) the Index of Relative Success (I.R.S.).

Analysis of the variability in the net employment effect

Regression analysis was employed to test the belief that variations

in the six community characteristics discussed above positively affected the Net Employment Effect (N.E.E.) of the survey towns. The measure which represented each characteristic was used as the independent variables in an equation of the form:

$$N.E.E. = B_0 + B_1(1960 \text{ Pop.}) + B_2(O.A.) + B_3(I.F.) + B_4(L.F.) + B_5(E.U.I.) + B_6(D.L.) + e$$

Using a least squares procedure, the B_j 's and other related statistics were estimated on the basis of data from all 115 towns in the universe, designated Case 1, and also from the 113 communities whose N.E.E.'s fell between the two extreme cases, entitled Case 2.

The large impact of the two extreme towns on the relationships indicated by the statistics developed in this study is very evident if the two sets of regression results (Cases 1 and 2) shown in Table 40 are compared. Only 9 percent of the variability in the dependent variable was explained, and the standard error of the estimate was 97.21 when all towns were considered. Removal of the indices determined for towns Number 36 and Number 80 from the computations notably improves the fit as measured by the coefficient of determination and lowers the standard error by 27.33.

Half the coefficients estimated in Case 1 bear positive signs as postulated while B_3 , B_5 , and B_6 are negative quantities; both B_1 and B_4 may be considered significantly different from zero at a 90 percent level of confidence. The Beta statistics indicate that the Living Facilities (L.F.) index is relatively more important in predicting the Net Employment Effect found in a community than other independent variables in the model. This same statistic also indicates that organizational activity is the least important variable.

When the extreme N.E.E. values were removed, the Case 2 regression,

Table 40. Summary of the Net Employment Effect regression results

	Constant	1960 Pop.	O.A. B ₂	I.F. B ₃	L.F. B ₄	E.U.I. B ₅	D.L. B ₆	R ²	F	Std. Error
	B ₀	B ₁								
Case 1: Regression results <u>with</u> extreme towns' data included										
Coefficients	-22.85	0.011	0.03	-0.048	1.219	-0.056	-0.435	0.09 ^a	2.96	97.21
t-statistic	1.39	0.07	-0.22	2.57	-0.44	-1.23				
Beta (Standard partial regression coefficient)	0.210	0.008	-0.020	0.261	-0.042	-0.128				
Case 2: Regression <u>without</u> extreme values included										
Coefficients	-8.610	0.019	0.343	-0.180	0.098	0.015	0.016	0.20 ^a	5.77	69.88
t-statistic	4.22	1.16	-1.12	0.27	0.16	0.06				
Beta	0.440	0.118	-0.099	0.027	0.015	0.006				

^aSignificantly different from 0 at the 97.5 percent level of confidence.

all the coefficients except B_3 were positive as hypothesized. However, it appears that only B_1 , the coefficient of population, can be considered significantly different from zero, except at very low levels of confidence. Additionally, town size was the most important independent variable in predicting its N.E.E. In light of the fact that some of the increases in employment came from location or expansion of personal service firms whose growth is heavily dependent upon the size of the population base to be served, the model may explain very little of the variability in manufacturing employment increases among the communities surveyed. On the other hand, the Beta corresponding to B_2 shows that the Organizational Activity (O.A.) index was the second most important variable in estimating the N.E.E. of a town.

Analysis of the variability in the new firm employment effect of industrialization

Most local development organizations spent the majority of their time working to bring new industry to the town. Therefore, an attempt to determine the significance and relative importance of this effort in explaining differences in the level of new firm employment (N.F.E.) found in the surveyed communities seemed appropriate. It was hypothesized that a town's N.F.E. was a linear function of its 1960 population, its development organization activity, its development effort leadership, its industrial facilities, its living facilities, and its location relative to large urban centers. To test this presumption, a regression was run to estimate the coefficients of the following model known as Case 3:

$$N.F.E. = C_0 + C_1(1960 \text{ Pop.}) + C_2(O.A.) + C_3(I.F.) + C_4(L.F.) + C_5(E.U.I.) + C_6(D.L.) + e$$

The Case 3 regression results are summarized in Table 41; several points regarding the statistics presented there should be noted. First, the coefficient of determination (R^2) indicates that the specified equation failed to explain 91 percent of the variability in the dependent variable. This same proportion of the variation in the Net Employment Effect remained unexplained in Case 1. Second, three of the six coefficients had positive signs as hypothesized. Third, the coefficient of town size, C_1 , appeared to be significantly different from zero at a level of confidence greater than 90 percent; Case 1 and Case 2 regressions resulted in similar findings. Fourth, population was the most important independent variable among those considered in predicting a community's N.F.E.; in fact, a regression based on the model:

$$N.F.E. = C_0 + C_1(1960 \text{ Pop.}) + e$$

resulted in a slightly higher R^2 and a slightly lower standard deviation than the Case 3 regression. Finally, the coefficient C_2 was significantly different than zero at an 80 percent level of confidence, and the Organizational Activity (O.A.) index to which it corresponded was the second most important variable in estimating a community's N.F.E.

Taken together, the Case 1, 2 and 3 regression results presented above indicate that:

- 1) the specified equations could explain only a small portion of the success of industrialization experienced by rural Iowa communities;
- 2) the 1960 population of a town was the only independent variable among those considered exhibiting a consistently significant, positive influence on the level of the measures absolute success,

Table 41. Case 3: Summary of New Firm Employment regression results

	Constant	1960 Pop. C ₁	O.A. C ₂	I.F. C ₃	L.F. C ₄	E.U.I. C ₅	D.L. C ₆	R ²	F	Std. Error
Coefficients	20.262	0.011	0.315	-0.130	-0.184	0.010	-0.124	0.09 ^a	2.95	56.36
t-statistic		3.21	1.32	-1.01	-0.67	0.13	-0.61			
Beta		0.357	0.145	-0.094	-0.068	0.013	-0.063			

^aSignificantly different from zero at the 97.5 percent level of confidence.

i.e. N.E.E. and N.F.E., and in two instances this same variable was most important in estimating these dependent variables;

- 3) while the coefficient attached to the O.A., which gauges development group activity, was significant only at fairly low levels of confidence, this variable was shown to be second most important among those considered in predicting the Net Employment Effect on the New Firm Employment.

Analysis of the variability in the index of relative success

As noted earlier, little definite association was evident between the Index of Relative Success (I.R.S.) and the various community characteristics studied. However, for the reasons discussed earlier in this section, it seemed reasonable to hypothesize that a town's relative success would be a positive function of its relative level of attributes such as population and organizational activity. Therefore, the I.R.S. was made the dependent variable in a regression equation of the same general form as those used in the preceding analysis, i.e.

$$I.R.S. = D_0 + D_1(1960 \text{ Pop.}) + D_2(O.A.) + D_3(I.F.) + D_4(L.F.) + D_5(E.U.I.) + D_6(D.L.) + e$$

Via the least squares technique, two sets of regression coefficients and related statistics were estimated; the results of both regressions are summarized in Table 42. The results of the first fit, known as Case 4 results, were based on data from all 115 towns while the results of the second fit, known as Case 5 results, were based on information about the 113 towns which had I.R.S. values between the upper and lower extremes.

From the results presented, it is apparent that none of the variability in the I.R.S. among the survey communities could be explained by the

Table 42. Summary of the Index of Relative Success regression results

Constant	1960 Pop. D ₁	O.A. D ₂	I.F. D ₃	L.F. D ₄	E.U.I. D ₅	D.L. D ₆	R ²	F	Std. Error
Case 4: Regression <u>with</u> extreme values included									
Coefficient	103.118	-0.001	0.019	-0.003	0.064	-0.004	...	^a 0.96	6.94
t-statistic	-1.07	0.66	-0.21	1.88	-0.48	-0.88			
Beta (standard partial regression coefficient)									
	-0.125	0.076	-0.020	0.201	-0.048	-0.096			
Case 5: Regression <u>without</u> extreme values included									
Coefficient	104.731	...	0.041	-0.007	-0.012	^a 0.79	4.98
t-statistic	-0.21	1.96	-0.62	-0.47	-0.07	-0.23			
Beta	-0.025	0.225	-0.062	-0.052	-0.007	-0.025			

^a ... = |D_j| or R² less than 0.0005

independent variables chosen. The coefficients of determination in both Case 4 and Case 5 were less than 0.0005. Further, the absolute values of the partial correlation coefficients between the I.R.S. and the various indices were less than 0.10 except in two instances. Finally, all the regression coefficients, with two exceptions, could be considered significantly different from zero only at very low levels of confidence.

The two exceptional regression coefficients were D_4 in Case 4 and D_2 in Case 5. These statistics were found to be significantly different from zero at levels of confidence greater than 90 percent. Also, the partial correlation between the variables to which D_4 and D_2 related--the L.F. and O.A. indices respectively--and the I.R.S. were greater than 0.10; however, both values were less than 0.30.

Implications of the results

Several implications might be drawn from the regression findings; some of these being basically methodological and others being more substantive. First, it could be concluded that the gauges of local characteristics used as independent variables failed to adequately reflect the situations in some communities. This could have been a result of: 1) incomplete or inaccurate data being related by the respondent; 2) sufficient information being unavailable; or 3) improper weights being applied to some of the various component indices when summary measures were developed. However, with the present state of knowledge and the available data, the indices developed in this report are probably the best derivable measures of the community characteristics of interest.

A second possible implication might be that the functional

relationships between the variables was misrepresented. Perhaps a different equational form, e.g. logarithmic might have described the relation better. Or, it might have been appropriate to include one or more lagged variables in the proposed relation. Such terms would reflect possible gestation periods necessary before development organization activity bears fruit in the form of new business locations and employment. While the explanatory power of alternative equations can be examined, the available information is not documented by data sufficiently to check the effect of lagged variables.

The final implication to be discussed here is that the characteristics measured in the indices used as independent variables were generally of little importance in determining the growth of nonfarm employment opportunities in Iowa's rural communities. In other words, alternative variables need to be found to explain the variability in industrial development success among the survey towns. Possible causes of differential business location experience might be variations in natural resources, wage levels, or transportation rates. Differences in business expansion experience might be attributed to exogenous changes in the demands for various products or services, or in variations in the skill of company managers. These and other factors must be investigated before definitive statements can be made regarding the causes of rural industrialization.

Whatever further study shows, several points seem clear from the investigation up to this point. First, being relatively large does not guarantee that a rural community will successfully develop its nonfarm employment base. Second, increases in the amount of local resources invested in industrial promotion efforts are not likely to provide a

corresponding return in the form of new job opportunities. Third, it would seem preferable for those local, state and federal agencies interested in rural industrialization to channel their resources into living facility improvement efforts. The results of such projects not only benefit present citizens, but also appear to have a positive influence on both absolute and relative industrial development success. Finally, it also seems clear that government aid, beyond loans and grants to improve the rural infrastructure will be needed if rural industrialization is deemed socially desirable and beneficial. Tax credits and interest subsidies might stimulate firms to move away from the cities and thereby disperse earning opportunities into nonmetropolitan regions.

CONCLUSION

Because the area with which it deals is relatively unexplored, this report has covered a large amount of ground; some of the discussion has been at a rather general level since all data collected in the source survey has not been fully analyzed yet. In this chapter, the significant findings previously noted are reviewed in relation to the objectives of the study. Also, some suggestions for further study and some thoughts on how the present analytical work might be improved are presented.

Review of the Findings

As discussed in the first chapter, one of the two principal objectives of this report was to describe certain factors thought to affect the industrialization of Iowa's rural communities. The primary community characteristic of interest was local development organization activity; other characteristics investigated were development group leaders, citizen attitudes, and community "assets". The second objective of the study was to analyze 1) the differences in the level of local industrial promotion activities and 2) the variability in expansion of local employment opportunities through industrial development.

The activities of local development organizations in rural Iowa's communities

In the third chapter of this report, the characteristics of the local industrial development organizations in Iowa's rural towns were discussed. Among the discoveries noted there were: 1) on the average, 2.5 groups are actively involved in the industrialization efforts of these towns;

2) of the nine kinds of organizations found, the three types most commonly found were Chambers of Commerce, nonprofit development corporations, profit development corporations, and 3) "dues for members", "proceeds from stock sales", and "donations from local citizens" provided operating funds for more than three-fourths of the groups identified by the survey.

Ten different kinds of work were identified as those activities in which development groups might be involved: media advertising, mass distribution advertising, personal contact activity, firm contact activity, property acquisition activity, working capital acquisition activity, fact book activity, community betterment activity, community informative activity, and "other" activity. The findings regarding some of these efforts are summarized below.

First, an average of \$425 was spent during the 1968-70 period to purchase advertising in newspapers, magazines and radio. Chambers of Commerce, nonprofit development corporations and profit corporations sponsored nearly 90 percent of these media ads.

Second, the firm contacts made by nonprofit development corporations, profit development corporations or Chambers of Commerce accounted for 80 percent of those identified by this study. However, regional development organizations were able to convince a higher proportion of the companies with whom they negotiated to locate in a survey town than were other types of groups.

Third, development groups in 70 percent of the towns studied held land which could be offered to firms who would locate in their communities. Usually this land was officially held by a development corporation. However, less than 20 percent of the surveyed towns had working capital

available as a special inducement.

Finally, community betterment project work was part of the promotional efforts of development organizations in 84 percent of the towns studied. Inducing medical personnel to come to their communities was one kind of activity in which many groups engaged.

Analysis of the variability in the level of local industrial promotion efforts

Organizations in larger towns were generally found to be more active than those in smaller communities according to the measure of group effort developed in this report - the Organizational Activity (O.A.) index. For example, groups in Class 3 towns spent an average of twice as much on media advertising activity as Class 1 towns did; Class 2 towns spent an average of one-and-one-half times as much. Such results undoubtedly reflect the impact of the greater resource bases on which organizations in larger communities can draw. However, in no community were the development groups very active in all kinds of promotional efforts; the upper range on the O.A. distribution was 133, while at least one town scored 200 in terms of the components making up the O.A. index.

The characteristics of local development organization leaders

The leaders of Iowa's rural development organizations, both the respondents and the most active persons, were virtually all regularly employed in "professional, technical" or "manager, officer, proprietor (other than farm)" occupations. These individuals spent an average of 345 hours and 263 hours respectively working on industrial development during 1970. Also, there was some evidence to suggest that larger towns

were more likely to rely on professionals from the field of industrial development as local leaders.

The attitudes of local citizens toward industrial development

Results of the questioning about community attitudes toward industrial development showed that: 1) a majority of the citizens in most rural towns want industrialization; 2) the majority in a few felt the costs of industrialization in terms of increases in congestion, crime, social tension, and damage to local recreation opportunities outweighed its benefits; 3) many people who wanted it preferred nonpolluting firms as new industries; and 4) some people recognized the necessity of using it to diversify the local employment base and sought to avoid the dangers of basing their town's economies on one or two large employers.

The assets and characteristics of Iowa's rural communities

Several of the communities studied were reportedly not equipped to meet a 25 percent increase in the usage of some vital utility services, particularly sewage treatment. However, the principal difference in the industrial facilities of the surveyed towns was the variation in the types of transportation services available.

The measure developed in this report to gauge the relative availability of industrial facilities, i.e. the Industrial Facilities (I.F.) index, indicates that larger towns tend to be slightly better endowed. However, because the number of lines offering a particular transportation service was not used in compiling a community's I.F., an additional source of variability between towns exists which is not reflected in the summary measure.

Living Facilities appeared to vary considerably from town to town and their relationship to community size differed by type. The per capita housing stock improvement was less in larger towns; the medical personnel available per capita was unrelated to town size; the type of recreational facilities and public improvement expenditures per capita rose with community size.

On balance, larger towns were relatively better endowed in the area of living facilities according to the Living Facilities (L.F.) index developed in this report. As in the case of organizational activity, however, no community had everything in this area - the upper boundary on the L.F. distribution was 139 while the component indices each had at least one town which scored 200.

Analysis of the variability in the expansion of local employment opportunities through industrial development

The larger a community was, the better its chances of experiencing new firm locations and the greater the number of new companies which were likely to set up operations within its borders. Also, businesses settling in larger towns were more likely to be aided in some way by local development organizations. Further, the more active a town's development groups, the greater the probable number of locations.

Firm expansions were more likely to occur in larger communities than in smaller ones and the number of expansions were likewise positively related to town size. Regardless of town size, expanding companies were unlikely to be assisted by local development organizations.

The levels of employment of new firms and the additional employment

by expanded firms were both positively related to town size. Further, expanded additional employment, on the average, accounted for more than 50 percent of the employment growth in the communities studied.

While larger towns were favored by firm locations and expansions, they also tended to experience greater job losses due to business failures. This trend mitigated some of the positive effect of industrialization in the bigger towns.

No evidence gathered in this survey would support the hypothesis that the employment resulting from industrial development has tended to concentrate job opportunities in towns of a particular size. The results do, however, indicate that the trend in employment opportunities over the past three years would lead to a concentration of jobs in the eastern half of the state.

It was hypothesized that the variations in the net change in non-farm employment opportunities among Iowa's rural communities were a function of population, organizational activity, industrial facilities, living facilities, development leadership and relative influence of large urban centers. Regression analysis indicated that the differences in the levels of these factors could explain very little (less than 10 percent) of the variability in the Net Employment Effect (N.E.E.) of industrialization. However, a community's 1960 population and its level of living facilities, but not its development organization activity, appeared to have a significant positive effect on the dependent variable.

It was noted that local development organizations directed their promotion efforts almost exclusively toward bringing new firms to their towns. Therefore, it was suggested that the O.A. index might be more

important in explaining the variability in new firm employment (N.F.E.) opportunities than differences in net job opportunities. Regression analysis of this hypothesis showed that organizational activity was second most important among the variables considered in predicting a town's new firm employment. However, very little of the total variability in the dependent variable was explained by the independent factors and the regression coefficient of the O.A. index was significant only at an 80 percent level of confidence.

An attempt was also made to describe the Indices of Relative Success (I.R.S.) of the survey communities as a linear function of their O.A.'s, I.F.'s, L.F.'s, D.L.'s, E.U.I.'s and 1960 populations. Regression analysis indicated that none of the variability in the relative measure of success could be explained by these six factors.

In light of the various regression results, it was suggested that other factors not investigated by this study were important in determining the extent of nonfarm employment expansion in different rural communities. New firms might have been drawn to a particular town because of 1) its relatively low wage levels or transportation cost, 2) its relatively large and skillful labor force, or 3) its relatively weak union organizations. Further, since industrial development success was in part dependent on business expansions and business failures, it might also have been a function of 1) changes in consumer demands, 2) the kinds of products and services the town's existing firms provided and 3) the skill of local entrepreneurs.

Also as a result of the regression analysis performed, several suggestions relevant to public policy were made. First, it appeared as

though large increases in the local resources invested in development organization efforts would not provide corresponding returns in the form of new nonfarm job opportunities. Second, continued efforts by all levels of government to improve the living facilities of rural communities were deemed desirable because they produce results which not only provide immediate benefits to present citizens, but also appeared to have some positive influence on net job growth. However, it seemed as though other kinds of incentives such as tax credits or subsidies would be needed to weigh company decision makers in favor of rural towns as plant sites.

Suggestions for Further Study

More study in the area of rural industrializations is needed in order to better determine: 1) what factors affect the choice of a particular site for new facilities among competing rural towns; and 2) what kinds of incentives might induce both growing urban and rural companies to look at farming communities as places to locate new or expanded operations. Several directions that such investigations might follow are suggested below.

On the basis of the survey data, the overall level of local development organization activity proved to be less important in furthering industrialization of rural communities than was expected. However, some of the eleven kinds of promotion efforts identified may have had considerably more effect upon new firm location and employment than others. By analyzing the relations between the individual components of the Organizational Activity (O.A.) index and the measures of development success, it might be possible to: 1) improve the summary measure through weighting of the components according to their relative impact on industrial

development; and 2) suggest the kinds of activities development leaders should stress to obtain the maximum benefit from the resources they employ.

Also, deserving further examination is the employment of the firms which were aided by local development organizations. Such an investigation would require further processing of data collected in the source survey. Attempts should be made to answer questions regarding these jobs, such as: 1) what proportion of the total new firm employment did they constitute; 2) did firms receiving aid in the form of land or plant buildings create more jobs than those otherwise helped; and 3) did the kinds of job opportunities created by aided firms differ from those created by other new firms.

In order to answer the last question mentioned above, it would be necessary to classify the new firms listed by the respondents according to their primary business, i.e. the main product or service they produce or provide. Such a categorizing of both new and expanded firms would seem desirable for at least three additional reasons. First, it may make it possible to identify particular types of firms which were attracted to Iowa's rural towns. Second, analysis could be carried out to discover if certain types of industrial promotion efforts affected particular kinds of firms. Third, some judgement might be made on the stability of the new job opportunities and the prospects for further employment increases based on information about future markets.

Since the community characteristics chosen in this report failed to explain much of the variability in the measures of industrial development success, i.e. the N.E.E., the N.F.E., and the I.R.S., other alternatives should be investigated. Data from the Census Bureau and other sources

could be studied to determine if variations in wage levels, transportation rates, and union strength among the survey towns could explain differences in the industrialization they experienced.

Finally, part of the effort in this study was aimed at determining why firms located in a particular town among a group of communities which were homogeneous in at least one respect - they were all "rural". A logical extension of the portion of the present work would call for a survey of new and recently expanded companies in the towns of the study universe. Data should be collected on their employment levels, capital expenditures related to location, and their reasons for choosing the site picked. Particular attention should be paid to the inducements received by these firms from the communities in which they did locate and those offered by towns in which they did not. Analysis of this kind of information complimented by that gathered in this report, would hopefully lead to results and recommendations which would better direct local development organization activity and public policy related to rural industrialization.

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APPENDICES

Appendix A: The Questionnaire

IOWA STATE UNIVERSITY
Department of Economics
and
Statistical Laboratory

Questionnaire for Rural
Industrial Development Study
(Ag. Exp. Sta. - Project 1873)

Town _____ No. _____ Date _____

Name of Respondent _____

Address _____

Phone Number _____

Organization _____

Position _____

Enumerator _____

Starting Time _____

I. Industrial development preferences

A. In your judgment, do most of the people in your community want industrial development and business expansion?

Yes _____

No _____

Don't know _____

If yes or no, ask why?

B. People favoring

1) What kinds of people in your community are most in favor of industrial development and business expansion?

2) Of the different kinds just named, which one is most in favor of industrial development?

C. People opposed

1) What kinds of people in your community are least in favor or oppose industrial development and business expansion?

2) Of the different kinds just named, which one is least in favor or most opposed to industrial development?

D. In your judgment do the groups that favor industrial development and business expansion have any preferences regarding the kinds of businesses that locate in your community?

Yes _____

No _____ (Skip to II)

Don't know _____ (Skip to II)

If yes,

- 1) What would you say are the main characteristics of the businesses that these groups would most prefer to have locate in your community?

II. Considerations in business location

On this card (hand respondent blue card) is a list of things which business firms might consider in deciding where to locate new production facilities. Please look them over.

- 1) How would your organization rank these things in terms of their importance to manufacturing firms in deciding where to locate new business facilities?
(Enumerator: Assign 1 to the most important and 12 or 13 to the least important.)
- 2) How would your organization rank these things in terms of their importance to non-manufacturing firms in deciding where to locate new business facilities.
(Enumerator: Assign 1 to the most important and 12 or 13 to the least important.)

Things that might be considered	Ranking for	
	Mfg. Firms	Non-Mfg. Firms
1) Nearness of markets for outputs		
2) Nearness of markets for raw materials		
3) Skills, availability and wages of needed labor		
4) Strength of labor unions in community		
5) Transportation facilities		
6) Local property taxes		
7) Quality and availability of local public services (e.g. schools, fire and police protection, water and sewer, etc.)		
8) Quality and availability of retail shopping services (e.g. supermarkets, medical, clothing, etc.)		
9) Quality and availability of local housing		
10) Attitude of local residents toward industrial development		
11) Availability of higher educational facilities and opportunities		
12) Availability of recreational facilities and opportunities		
13) Other (specify _____)		

III. During the 1968-1970 period, has there been any organized effort in your community to encourage industrial development and business expansion?

Yes _____

No _____ (Skip to page 8, IV)

If yes,

- A. What organizations in the community have been involved in this effort? (List in table below.)
- 1) How would you rank these organizations in terms of their effort to encourage industrial development; that is, which has been most involved, next most involved, etc.?
(For each group or organization listed, ask questions 2 and 3)
 - 2) How many years has the (insert name of organization) been involved in the effort to encourage industrial development?
 - 3) How has the (insert name of group) financed its effort to encourage industrial development?

(A) Organization Involved	(1) Rank	(2) Years Involved	(3) How Effort Was Financed

B. During the 1968-1970 period did any of these organizations purchase advertizing space in newspapers or magazines and/or time on television or radio for the purpose of creating interest by firms in locating or expanding business facilities in your community?

Yes _____

No _____ (Skip to page 4, C)

If yes, ask questions 1 to 4 and insert in appropriate columns.

- 1) In what media was advertizing?
- 2) What organization purchased time or space in (insert media for Col. 1)?
- 3) How much time or space was bought in (insert media)?
- 4) What was approximate total expenditure for time or space in (insert media)?

(1) Media Used	(2) Organization	(3) Amt. of space or time	(4) Total Cost
			\$

C. During the 1968-1970 period, did any of these organizations distribute any materials (e.g. brochures or newsletters) for the purpose of creating interest by firms in locating or expanding business facilities in your community?

Yes _____

No _____ (Skip to D)

If yes,

- 1) What kinds of materials were distributed? (List below and obtain a copy of each item, if possible.)
- 2) What organization was responsible for distributing (insert item from Col. 1)
- 3) How many copies of (insert item) were prepared?
- 4) To whom was (insert item) distributed?
- 5) How many copies of (insert item) were distributed?
- 6) What was the estimated total cost of preparing and distributing (insert item)?

(1) Item	(2) Organization	(3) No. Prepared	(4) To Whom Distributed	(5) Copies Distri- buted	(6) Est. Total Cost*	(7) Copy Obtained	
						Yes	No
					\$		

*Include estimated value of printing, supplies or labor for which no charge was made.

D. During the 1968-1970 period, did any of these organizations make any effort to keep the people of your community informed about and interested in industrial development?

Yes _____

No _____ (Skip to E)

If yes,

- 1) Please briefly describe the nature of each effort made and indicate the organization involved.

Organization

E. During the 1968-1970 period, did any of these organizations send any representatives to meetings (e.g. industrial fairs, conventions) offering opportunities to contact business leaders and encourage location of new businesses in your community?

Yes _____

No _____ (Skip to page 5, F)

If yes, complete the following table for each meeting, beginning with those attended in 1970.

Name of meeting	Location of meeting	Organization Sponsoring attendance	Year Attended	No. of Representatives sent

F. Has there been a "basic fact book" compiled about your community which can be used for reference in supplying specific information wanted by firms in deciding where to locate or expand business facilities?

Yes _____

No _____ (Skip to G)

If yes,

1) What organization sponsored the book preparation? _____

2) In what year was it prepared? _____

3) Has it been revised?

Yes _____

No _____

G. During the 1968-1970 period, have any of these organizations made any contacts with specific firms regarding location or expansion of business facilities in your community?

Yes _____

No _____ (Skip to page 6, H)

If yes,

1) What firms or types of businesses were contacted? (List in Col. 1 below.)

(Enumerator: ask questions 2 through 5 of each firm identified in Col. 1 below.)

2) What organization made the contact with (insert firm)?

3) How did the organization find out about this firm's interest in locating new business facilities?

4) Did this firm send a representative to the community?

5) Did this firm finally decide to locate or expand facilities here?

(1) Firm name	(2) Organization making contact	(3) Source of information	(4) Sent representative		(5) Decide to locate	
			Yes	No	Yes	No

IV. New business enterprises in the community

A. During the 1968-1970 period have any new business firms, employing 3 or more people, located and started operating in your community?

Yes _____

No _____ (Skip to page 10, V)

If yes,

- 1) What are the names of these new businesses? (List in Col. 1, Table A, below.) (Starting with the first firm listed in Col. 1, ask questions 2 through 9 below and insert answers in appropriate columns in Table A.)
- 2) When (month and year) did (insert name of firm) start operating?
- 3) What kind of business is carried on by this firm?
- 4) Approximately how many people were employed by this firm in July 1970?
- 5) Approximately how many people were employed by this firm in December 1970?
- 6) What is the approximate current market value of the land and buildings occupied by this firm?
- 7) If buildings were remodeled or constructed for use by this firm, what was the total cost of this remodeling or construction?
- 8) Does this firm distribute most of its goods and/or services (1) in the community, (2) outside the community but in Iowa, or (3) outside of Iowa? (Code number in Col. 8)
- 9) Did any of the organizations involved in encouraging industrial development help in any way to encourage this firm to locate in the community?

(Enumerator: If there is a "yes" answer for the firm in question 9, ask questions 10 through 13 about the same firm; enter answers in appropriate column in Table B, below.)

- 10) What organization helped to encourage (insert firm name) to locate in your community?
- 11) What did the organization do that encouraged this firm to locate here?
- 12) How did the organization finance its activities that encouraged this firm to locate in your community?
- 13) (Enumerator: If answer in 11 involved making land and/or buildings available to this firm, ask "a" and "b" below and insert answer in Col. 13.)
 - a) How did the organization acquire the property?
 - b) How did the organization make the property available to this firm?

V. Expansion of old businesses in community

A. During the 1968-1970 period, have any old business firms in the community expanded their operations significantly, i.e. added at least 3 people to the payroll?

Yes _____

No _____ (Skip to page 12, VI)

If yes,

- 1) What firms have expanded their operations significantly? (List in Col. 1 below.)
(Starting with the first firm listed in Col. 1 ask questions 2 through 7 below entering answers in Table A below.)
- 2) When (month and year) did the expanded portion of (insert name of firm) business start operating?
- 3) What kind of business is carried on by this firm?
- 4) About how many additional workers were employed in December 1970 as a result of the expansion?
- 5) If buildings were remodeled or constructed in the expansion, what was the total cost?
- 6) Does the firm distribute most of its goods or services: 1 = in the community; 2 = outside the community but in Iowa; 3 = outside of Iowa. (Record code no. in Col. 6)
- 7) Did any group or organization involved in encouraging industrial development in the community in any way encourage this firm to expand?

(Enumerator: If there is a "yes" to question 7 for the firm, ask questions 8 through 11 about the same firm; enter answers in Table B below.)

- 8) What organization helped (insert firm name) to expand its operations?
- 9) What did the organization do that helped this firm to expand?
- 10) How did the organization finance its activities that encouraged this firm to expand?
- 11) (Enumerator: if answer 9 involved making land and/or buildings available to this firm, ask "a" and "b" and insert answer in Col. 11.)
 - a) How did the organization acquire the property?
 - b) How did the organization make the property available to the firm?

VI. A. For the firms which located or expanded during 1970, did your town provide any special municipal services (e.g. paving of road to plant, extra sewer or water facilities, etc.) (By special municipal services we mean services that would not have been provided if they had not been used by these firms.)

Yes _____

No _____ (Skip to B below.)

If yes,

- a) What special municipal services were provided? (List in table)
- b) How many firms received the benefits of these services?
- c) Who paid the cost of these services?

(a)	(b)	(c)
<u>Special services provided</u>	<u>Number receiving</u>	<u>Who paid the cost</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

B. Have these groups or organizations encouraging industrial development in your community received any help from the Iowa Development Commission?

Yes _____

No _____ (Skip to C below)

If yes,

- 1) What kind of help have they received?

C. In your judgment what could the Iowa Development Commission do to be of more help in encouraging industrial development in your community?

VII. Firms going out of business

A. During the 1968-1970 period, have any firms, employing 3 or more people, gone out of business in your community?

Enumerator note: Do not include firms that have been sold to new owners.)

Yes _____

No _____ (Skip to VIII, page 13)

If yes,

- 1) What are the names or kinds of firms that have gone out of business? (List in Col. 1 below.)

(Enumerator note: Starting with the first firm listed in Col. 1, ask questions 2 through 5 and record answers in corresponding columns of table below.)

- 2) In what month and year did (insert firm) go out of business?
- 3) Approximately how many people were employed at (insert firm) 12 months before liquidation?
- 4) What happened to the land and buildings occupied by (insert firm) after liquidation?
- 5) In the six months following the closing of this firm did most of the workers laid off:
 - a) find other jobs easily?
 - b) find other jobs with difficulty?
 - c) not find other jobs? (check answer below)

(1) Firm designation	(2)		(3) No. of workers	(4) Disposition of land and buildings	(5)		
	Mo.	Year			Jobs easy (a)	Jobs hard (b)	No jobs (c)

VIII. Personal Activity

A. Respondent

- 1) What is your primary occupation? _____
- 2) Please tell me what year you were born. _____
- 3) Thinking of your work to encourage industrial development in your community during 1970, about how many hours per week did you work on the average? _____ hr./wk.
- 4) How many years have you lived in this community? _____
- 5) How long have you been active in industrial development work? _____
- 6) Have you had any training which has been helpful in performing your role in community industrial development?

Yes _____

No _____

If yes, please describe this training.

- 7) During the period 1968-1970 what offices have you held in city government, church, service organizations, fraternal organizations, etc.?

<u>Organization</u>	<u>Office Held</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Among the people of your community other than yourself, think of the person who spends the most time encouraging industrial development.

- 1) What is this person's name? _____
- 2) What is this person's primary occupation? _____
- 3) How old is this person approximately? _____
- 4) How long has this person lived in the community? _____
- 5) To which of the organizations involved in industrial development does he or she belong? (Answer in table below.)
- 6) Thinking of his work to encourage industrial development during 1970, about how many hours per week did he work on the average? _____ hr./wk.
- 7) During the 1968-1970 period what offices has this person held in industrial development organizations, city government, church, service organizations, fraternal organizations, etc.

<u>Organization</u>	<u>Office Held</u>
_____	_____
_____	_____
_____	_____
_____	_____

IX. Selected community characteristics

- A. What form of city government does your town have? (check one)

- 1) Mayor and Council with City Manager _____
- 2) Mayor and Council without City Manager _____
- 3) Mayor and Commission with City Manager _____
- 4) Mayor and Commission without City Manager _____
- 5) Other (explain _____) _____

B. Transportation facilities

Does your town have _____ facilities?
(insert item 1 to 5)

1) Rail service:

Yes _____

No _____

If yes, number of lines _____

2) Commercial air services:

Yes _____

No _____

If yes, number of lines _____

3) Does the town own or support an airport?

Yes _____

No _____

4) Barge or water carrier service:

Yes _____

No _____

If yes, number of lines _____

5) Bus service:

Yes _____

No _____

If yes, number of lines _____

6) How many state highways connect your town? _____

7) How many federal highways connect your town? _____

C. Post high school education facilities

1) Are there any post-high school education institutions operating in your town?

Yes _____

No _____ (Skip to D)

If yes, complete the table below:

Name of institution	Type*	Enrollment	Does it offer vocational training	
			Yes	No

* 4 year college, Jr. college, vocational school, community college, etc.

D. Power, water and sewage

1) With present resources and facilities, could your community supply 25 percent more usage of:

a) Water:

Yes _____

No _____

Don't know _____

b) Electric power:

Yes _____

No _____

Don't know _____

c) Sewage treatment/disposal:

Yes _____

No _____

Don't know _____

(Enumerator note: If the answer is no in a, b, or c, above ask: No. 2 below for each case of a no answer.)

2) Would you say that the cost of providing for this additional usage would be a) prohibitive, b) quite large but could be managed, or c) relatively small? (Check appropriate answer in table below)

	Water	Power	Sewage
a) Prohibitive	_____	_____	_____
b) Quite large but could be managed	_____	_____	_____
c) Relatively small	_____	_____	_____

E. Health facilities

1) How many M.D.'s are there in your town? _____

2) How many dentists are there in your town? _____

3) Is there a hospital in your town?

Yes _____

No _____

If yes,

a) What is the bed capacity of the hospital? _____ beds

If no,

a) Where is the nearest hospital? (Town: _____)

b) How many miles away? _____ miles

c) What is its bed capacity? _____ beds

F. Recreational and cultural facilities

Does your town have, within its incorporated limits:

	Yes	No	If <u>yes</u> , number
1) a public outdoor swimming pool	_____	_____	_____
2) a public indoor heated swimming pool	_____	_____	_____
3) a bowling alley	_____	_____	_____
4) a sponsored summer recreational program for young people	_____	_____	_____
5) a year-around youth center (YMCA)	_____	_____	_____
6) a motion picture theater	_____	_____	_____
7) a public library outside of school	_____	_____	_____

Does your town have or is there within 25 miles of your community:

	Yes	No	If <u>yes</u> , number
8) an outdoor recreational area providing opportunities for boating, camping, or picnicing	_____	_____	_____
9) a public trap and/or skeet range	_____	_____	_____
10) a public golf course	_____	_____	_____
11) a sponsored musical organization	_____	_____	_____
12) an organization sponsoring legitimate plays	_____	_____	_____

G. Industrial promotion

1) Since 1963 has your town issued industrial revenue bonds?

Yes _____

No _____

If yes,

a) How much money was raised? \$ _____

b) What were the proceeds used for? _____

2) Does your town have an area designated as an "industrial park"?

Yes _____

No _____

If yes,

a) How many acres does it contain? _____

b) Who holds title to the property? _____

H. Fire and police protection

1) How many full-time employees are on the police force in your town? _____

2) How many paid and/or volunteer firemen does your town have?

No. paid _____

No. volunteer _____

I. Housing

- 1) Approximately how many new single dwelling housing units were constructed in your town in 1970? _____
- 2) Approximately how many multiple dwelling housing units were constructed in your town in 1970? _____
- 3) Does your town have a zoning ordinance which restricts the location of business activities in residential areas?

Yes _____

No _____

Don't know _____

J. Streets and other public improvements

- 1) Approximately what proportion (percentage) of the streets within the town's borders is hard surfaced (concrete or blacktop)?
_____ %
- 2) During the past three years, has the town made any major improvement in its facilities for providing public services?

Yes _____

No _____

Don't know _____

If yes, complete the table below:

<u>Improvement</u>	<u>Year</u>	<u>Estimated Cost</u>
_____	_____	\$ _____
_____	_____	_____
_____	_____	_____

K. Would you like a copy of the report from this survey?

Yes _____

No _____

(Interviewer: time finished _____)

Appendix B: The Telephone Screening Sheet

170
INDUSTRIAL DEVELOPMENT STUDY
Telephone Screening Sheet

Calls made

Person name _____ No. _____ Date _____
Phone _____ Time _____
Town _____ Interviewer _____

This is _____ from Iowa State University at Ames. The
University is making a study of development corporations in Iowa and your name has been
given to us as _____ of _____
(office) (name of organization)

Do you still hold this position?

Yes A. How long have you been involved in this organization? _____ Years

B. We would like to talk with you about your organization for the years 1968,
1969 and 1970 regarding:

- (a) the activities of this organization during that period
- (b) new business firms that have started in your town during these three years
- (c) business firms that have expanded during this time and
- (d) firms that have gone out of business

Do you think you could give me this type of information? "or"

_____ Yes _____ No would you suggest some
other person?

C. When would be a convenient time for you
to talk with me?

Date & time _____

Place _____

(name)

(position in organization)

(address) (phone)

I. No A. How long has it been since you held this office? _____ Years

(ENUMERATOR: If less than one year, go back and ask Ques. I. B and C as
if still holding the position.

If more than one year, continue with II. B)

B. Who would you say is the person that ¹⁷¹ could best help us with this project?
 We will be asking about your organization for the three years 1968, 1969
 and 1970 regarding:

- (a) the activities of this organization during that period
- (b) new business firms that have started in your town during these three years
- (c) business firms that have expanded during this time and
- (d) firms that have gone out of business

_____ (name)

_____ (position in organization)

_____ (address) _____ (phone)

C. Then you think he is the person who could best give me this information?

Yes _____ No _____

How long would you estimate that he has been involved in the organization?

_____ years

Appendix C: List of Towns Surveyed

Towns Included in the 1970
Rural Industrial Development Survey

<u>Town No.</u>	<u>Town Name</u>	<u>County</u>	<u>1970 Population</u>
1	Ackley	Hardin	1,794
2	Adel	Dallas	2,419
3	Albia	Monroe	4,151
4	Algona	Kossuth	6,032
5	Alta	Buena Vista	1,717
6	Anamosa	Jones	4,389
7	Atlantic	Cass	7,306
8	Audubon	Audubon	2,907
9	Bedford	Taylor	1,733
10	Belle Plaine	Benton	2,810
11	Bellevue	Jackson	2,336
12	Belmond	Wright	2,358
13	Bloomfield	Davis	2,718
14	Britt	Hancock	2,069
15	Cascade	Dubuque	1,744
16	Centerville	Appanoose	6,531
17	Chariton	Lucas	5,009
18	Cherokee	Cherokee	7,272
19	Clarinda	Page	5,420
20	Clarion	Wright	2,972
21	Clear Lake	Cerro Grodo	6,430
22	Colfax	Jasper	2,293
23	Corning	Adams	2,059
24	Corydon	Wayne	1,745

<u>Town No.</u>	<u>Town Name</u>	<u>County</u>	<u>1970 Population</u>
25	Cresco	Howard	3,927
26	Creston	Union	8,234
27	Decorah	Winneshiek	7,458
28	Denison	Crawford	5,882
29	Dewitt	Clinton	3,647
30	Dyersville	Dubuque	3,437
31	Eagle Grove	Wright	4,489
32	Eldora	Hardin	3,223
33	Emmetsburg	Palo Alto	4,150
34	Estherville	Emmett	8,108
35	Fairfield	Jefferson	8,715
36	Forest City	Winnebago	3,841
37	Garner	Hancock	2,217
38	Glenwood	Mills	4,195
39	Greenfield	Adair	2,212
40	Grinnell	Poweshiek	8,402
41	Grundy Center	Grundy	2,712
42	Guthrie Center	Guthrie	1,834
43	Guttenberg	Clayton	2,177
44	Hamburg	Fremont	1,649
45	Hampton	Franklin	4,376
46	Harlan	Shelby	5,049
47	Hartley	O'Brien	1,694
48	Hawarden	Sioux	2,789
49	Humboldt	Humboldt	4,665
50	Ida Grove	Ida	2,261
51	Independence	Buchanan	5,910

<u>Town No.</u>	<u>Town Name</u>	<u>County</u>	<u>1970 Population</u>
52	Iowa Falls	Harden	6,454
53	Jefferson	Greene	4,735
54	Jesup	Buchanan	1,662
55	Knoxville	Marion	7,755
56	Lake City	Calhoun	1,910
57	Lake Mills	Winnebago	2,124
58	Lamoni	Decatur	2,540
59	LaPorte City	Black Hawk	2,256
60	Laurens	Pocahontas	1,756
61	Le Mars	Plymouth	8,159
62	Leon	Decatur	2,142
63	Madrid	Boone	2,448
64	Manchester	Delaware	4,641
65	Manning	Carroll	1,656
66	Manson	Calhoun	1,993
67	Mapleton	Monona	1,647
68	Maquoketa	Jackson	5,677
69	Marengo	Iowa	2,235
70	Milford	Dickinson	1,668
71	Missouri Valley	Harrison	3,519
72	Monticello	Jones	3,509
73	Mount Ayr	Ringgold	1,762
74	Mt. Pleasant	Henry	7,007
75	Mt. Vernon	Linn	3,018
76	Nevada	Story	4,952
77	New Hampton	Chickasaw	3,621
78	New London	Henry	1,900

<u>Town No.</u>	<u>Town Name</u>	<u>County</u>	<u>1970 Population</u>
79	Northwood	Worth	1,950
80	Oelwein	Fayette	7,735
81	Onawa	Monona	3,154
82	Orange City	Sioux	3,572
83	Osage	Mitchell	3,815
84	Osceola	Clarke	3,124
85	Parkersburg	Butler	1,631
86	Pella	Marion	6,668
87	Perry	Dallas	6,906
88	Pocahontas	Pocahontas	2,338
89	Red Oak	Montgomery	6,210
90	Reinbeck	Grundy	1,711
91	Rock Rapids	Lyon	2,632
92	Rock Valley	Sioux	2,205
93	Rockwell City	Calhoun	2,396
94	Sac City	Sac	3,268
95	Sheldon	O'Brien	4,535
96	Shenandoah	Page	5,968
97	Sibley	Osceola	2,749
98	Sigourney	Keokuk	2,319
99	Sioux Center	Sioux	3,450
100	Spirit Lake	Dickinson	3,014
101	Story City	Story	2,104
102	Sumner	Bremer	2,174
103	Tama	Tama	3,000
104	Tipton	Cedar	2,877
105	Toledo	Tama	2,361

<u>Town No.</u>	<u>Town Name</u>	<u>County</u>	<u>1970 Population</u>
106	Traer	Tama	1,682
107	Vinton	Benton	4,845
108	Wapello	Louisa	1,873
109	Washington	Washington	6,317
110	Waukon	Dallas	3,883
111	Waverly	Bremer	7,205
112	W. Liberty	Muscatine	2,296
113	W. Union	Fayette	2,624
114	Wilton Junction	Muscatine	1,873
115	Winterset	Madison	3,654

Appendix D: Computation of Indices

Index of Organizational Activity (O.A.)

As a first step in building the Organizational Activity (O.A.) index, a key quantity such as total dollars spent for media advertising during 1968-70 was chosen to reflect the resources that a town committed to seven types of promotional activities. These key measures were taken from information collected regarding development organization media advertising activity, mass distribution activity, personal contact activity, firm contact activity, special inducement activity (divided into property acquisition and capital acquisition components, community betterment activity, and "other" activity.¹ Gauges for fact book and community information activities were not included in the calculations because the answers to questions concerning them provided no quantifiable measure of local input.

The means of each key quantity was determined and the values characterizing every community were expressed as a relative of the averages, e.g. $\frac{\text{Total \$ for Media Advertising in town no. } i}{\text{Mean \$ for Media Advertising in all towns}}$. Then the relatives were multiplied by 100 to form indices of media advertising activity, etc.

Another component of the O.A. index based on the number of development organizations involved in these different activities was also

¹Key items were: media advertising = total dollars spent; mass distribution advertising = three times the number of industrial promotion type materials distributed plus the number of tourist promotion materials; personal contact = total number of representatives sent; firm contact = total number firms contacted; property acquisition = number of properties held; working capital = total working capital available; community betterment = total number of projects worked on; "other" = 1 if involved in some kind of "other" work or 0 if not.

If a "Don't know" answer appeared as a key quantity for a town, it was assigned a value equal the mean key quantity of towns with similar related responses. For example, if a group in town X had purchased $\frac{1}{4}$ page of advertising in a national newspaper, X would be assigned the mean dollars spent by all other communities who bought $\frac{1}{4}$ or less pages.

computed following the same general procedures outlined above, i.e.

$\frac{\text{Number of development organizations in the town no. } j}{\text{Mean number of organizations in all towns}} \times 100$. This index

was included as a gauge of the general level of organizational participation in local industrial promotion efforts.

Due to their varying ranges, it was necessary to transform the nine component indices described above into a standard form to equalize the effect of an incremental change in all indices. This was accomplished by defining a new index, $Z_i = aY_i^b$, for each component index Y_i specifying a maximum value for Z_i , 200 when Y_i was a maximum, and requiring Z_i to equal Y_i when $Y_i = 100$.

Since there seems to be no available evidence to indicate the relative effectiveness of the various types of activity in fostering industrialization, no bases existed for assigning weights to the component indices prior to summing them to form a single standard of comparison. Therefore, the Organization Activity Index for any town was defined as the unweighted average of the community's Z_i 's, i.e. $\sum Z_{ij}/9 = O.A.j$.

Index of Development Leadership (D.L.)

The quantity and quality of leadership could be important in explaining the degree of success of industrial development organizations. Thus, it was felt that some rough gauge of the development leadership input in the towns studied was necessary. However, such a factor is difficult to measure due to the lack of any standard set of attributes characteristic of good leaders.

From the data gathered about the respondent and the "most active person", three quantities were selected as components of Development

Leadership (D.L.) index. The "estimated hours spent working on industrial development" by both individuals were included as a yardstick of the quantity of local leadership input. The formal training of the respondents, weighted according to its type, was included to reflect the knowledgeableness of the local leadership.¹ The number of "other offices" held by the two subjects was included as an indicator of the leadership roles assigned to them by other people.

The Development Leadership (D.L.) index was computed for each community by first adding the formal training quantity plus 1.0 to the number of "other offices" held by the respondent. Second, 1.0 was added to the number of "other offices" held by the most active person. Next, each of these sums was then multiplied by the hours spent by the respondent or the most active person. Then these products were divided by 10.0. Fifth, these quotients were added together and the average of the 115 sums was calculated. Finally, the value corresponding to each town was stated as a relative of this mean and the D.L. index was formed by multiplying the relatives by 100.

Index of Industrial Facilities (I.F.)

From the information gathered about the characteristics of the communities studied, two gauges of their potential to offer inputs needed by most industries--transportation and utility services--were constructed.

The number of types of transportation service available in a town,

¹Weights used were: No training = 0, college training = 1, Iowa Development Commission, Chamber of Commerce or company industrial development course = 2, and Sales training = 3.

e.g. rail service, was added to the number of State and Federal highways connecting that community to give a "facilities count". After the average of the "facilities counts" was determined, the Transportation Facilities index was calculated by expressing the count of each town as a relative of this mean $\frac{\text{facilities count of town no. } i}{\text{mean facilities count for all towns}}$ and multiplying this quantity by 100.

A Power-Water-Sewage (P-W-S) count for each community was derived by assigning a weight of 3.0, 2.0, 1.0 or 0.0 to the answers to each question concerning the capacity of its facilities to accommodate a 25 percent increase in the demand for a vital service.¹ These weights were summed to give the community a P-W-S score and the mean P-W-S count for all towns was then found. The individual values were then expressed as a relative of this average-- $\frac{\text{P-W-S count for town no. } i}{\text{mean P-W-S count for all towns}}$. Multiplying these relatives by 100 produced the P-W-S Facilities index.

In order to combine the above measures into an aggregate standard of comparison, it was necessary to transform the above indices to equate the effects of a unit change in both via the method described in the discussion of the O.A. index above. Since existing evidence again provided no basis on which to assign differential weights to the two transformed components, the Industrial Facilities index (I.F.) was formed by adding them together and dividing this sum by 2.

¹Weights were assigned according to the following criterion: 0.0, if the town could not accommodate 25 percent more usage because of prohibitive cost; 1.0, if the town could accommodate 25 percent more usage at relatively little cost; 3.0, if the town could accommodate 25 percent more usage with present facilities.

Index of Living Facilities (L.F.)

An aggregate measure of the relative availability of living facilities in each community surveyed was obtained by averaging four component indices—the Health Facilities (H.F.) index, the Recreational-Cultural Facilities (R.C.F.) index, the New Housing Facilities (N.H.F.) index, and the Public Improvements (P.I.) index.

The H.F. index was computed by 1) finding the number of M.D.'s, Dentists, and hospital beds per 1000 population in each town; 2) computing the mean M.D.'s, D.D.S.'s, and beds for all towns; 3) expressing all values from 1 above as a relative of the corresponding average, e.g. $\frac{\text{M.D.'s per 1000 in town no. } i}{\text{Mean M.D.'s per 1000 in all towns}}$; 4) adding the three relatives for a community together, dividing the sum by 3 and multiplying the quotient by 100 to obtain the H.F. index.

From the number of "yes" answers to the questions about recreational and cultural opportunities in and near these communities, an index of these facilities was derived. First, the positive responses in each town were counted and the mean number for all towns found. Then all individual totals were expressed as a relative of that average. Finally, this ratio was multiplied by 100 to form the R.C.F. index.

An index of New Housing Facilities was computed by first multiplying the number of new multiple dwelling units by 3 (assuming this to be the average number of single-family units made available in this way). After this quantity was added to the total new single family homes and new permanent trailers in a community, the sum was divided 0.001 times the town's 1970 population. After this was done, the average single dwelling equivalents per 1000 was computed. The N.H.F. index could then be

determined by expressing a town's single dwelling equivalents per 1000 as a relative of this mean and multiplying by 100.

A fourth index gauging relative improvements in capacity to provide public services was formed by expressing a community's expenditure per 1000 population for major betterments during 1968-70 as a relative of the mean outlay per 1000 population for all towns and multiplying the resulting fraction by 100.

These four components were transformed using the procedure discussed in Appendix D, Part 1 above. With the effects of a unit change equalized, the towns for component indices were added together and the sum divided by 4 to form the Living Facilities (L.F.) index.

Industrial plus Living Facilities Index (I.+L.)

A single measure of the relative attractiveness of the local environment of a surveyed community was constructed by multiplying the community's I.F. by 2, adding this product to its L.F., and dividing the sum by 3. The index thus formed is known as the town's I.+L. in this report.

Index of External Urban Influence (E.U.I.)

The following cities whose 1970 populations fall within the stated bounds were within eighty miles of at least one surveyed community:

a. Population class 20,000 to 39,999

Ames; Burlington; Clinton; Fort Dodge; Marshalltown; Mason City; Muscatine; Ottumwa; Hannibal, Mo.; Austin, Minn.; Albert Lea, Minn.; Freeport, Ill.

b. Population class 40,000 to 59,999

Iowa City; LaCrosse, Wisc.; Galesburg, Ill.; Quincy, Ill.

c. Population Class 60,000 or more

Cedar Falls-Waterloo; Davenport-Bettendorf-Rock Island; Omaha-Council Bluffs; Sioux City; Dubuque; and Cedar Rapids

The following weights were assigned to all cities in the population classes indicated:

- a. Class 20,000 to 39,999 - size weight equals 1.0
- b. Class 40,000 to 59,999 - size weight equals 2.0
- c. Class 60,000 or more - size weight equals 3.0

The following weights were given to the distance intervals indicated:

- a. Under 20.0 miles - distance weights equals 8.0
- b. 20.0 to 39.9 miles - distance weight equals 4.0
- c. 40.0 to 59.9 miles - distance weight equals 2.0
- d. 60.0 to 79.9 miles - distance weight equals 1.0
- e. 80 or more miles - distance weight equals 0.0

From the above weighting scheme, the following table was derived for assigning an index number to reflect the presumed impact of a city on a town in the universe of study:

Distance	Population (1000's)		
	20 to 39	40 to 59	60 or more
Under 20 miles	8	16	24
20 to 39.9 miles	4	8	12
40 to 59.9 miles	2	4	6
60 to 79.9 miles	1	2	3
80 or more miles	0	0	0

For example: since Ames, population 39,400 is twelve miles from Nevada, the "impact index" of the former on the latter would be 8.0.

As stated in the text, the total influence of all urban places over 20,000 on a town in the universe was represented by the sum of all "impact" indices corresponding to that community. This sum was divided by the mean total impact value and the resulting quotient multiplied by 100 to obtain the community's E.U.I.