

JOB CREATION IN OKLAHOMA BY NEW AND EXPANDED MANUFACTURING PLANTS 1963 THROUGH 1975

BULLETIN B-738

JULY 1978

Agricultural Experiment Station

Oklahoma State University

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Job Creation In Oklahoma By New And Expanded Manufacturing Plants 1963 Through 1975

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The structure of the Oklahoma economy has changed dramatically since the early 1960's. Employment in manufacturing has increased while employment in agriculture and mining has declined. In many cases, this has resulted in migration from the farm to a city where more employment opportunities exist. Many small communities are trying to attract industry to provide jobs for new entrants into the labor force and for those people who have been freed from agricultural employment by technological change.

This study will examine trends in manufacturing plant location and expansion in Oklahoma over the years 1963 through 1975. This will generate information concerning the types of plants which have been locating in Oklahoma and the types of communities in which they have been locating. This information may reduce the uncertainty in regional planners' and community leaders' search for industry. Hopefully, this may allow them to concentrate their initial efforts on the types of manufacturing plants which located in similar communities or regions in the recent past.

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The Study

Objective

The overall objective of this study is to analyze job creation in the manufacturing sector in Oklahoma and to specify the number and types of manufacturing plants which either located or expanded in Oklahoma from 1963 through 1975.¹ More specifically, the objectives of this study are:

1. to examine manufacturing job creation across various community sizes;
2. to identify those manufacturing industries which were most important in creating new jobs in the various community sizes in Oklahoma over this time period; and
3. to determine which industries were most important in creating jobs in the eleven sub-state planning districts over this time period.

Jobs created by new plants and expansions are presented for each objective. The geographic incidence of jobs from new plants is a more sensitive indication of the current community characteristics that influence plant location. On the other hand, new jobs from plant expansions would indicate a previous pattern of plant locations and community characteristics that may not currently attract new plants.

Data and Classification

The major data source is the Listing of New and Expanded Manufacturers and Processors published by the Oklahoma Department of Industrial Development. This publication presents verified observations of jobs created by new and expanded manufacturing plants in Oklahoma since 1963 [5]. The plants are grouped on the basis of their major products into the Standard Industrial Classifications of the 1972 Census of Manufacturers.

Census of Population data are used to place the communities into size classification. The population intervals used are 0-2,499; 2,500-4,999; 5,000-9,999; 10,000-24,999; 25,000-49,999; 50,000-99,999; 100,000 and greater. These are the standard intervals from the Census of Population. The eleven sub-state planning districts are used to divide the state into geographic regions in this study.

The 0-2,499 population interval is made up of 460 communities whose populations summed to 281,650 in 1970. The 2,500-4,999 population interval was composed of 43 communities whose combined population was 147,539. The 5,000-9,999 interval contained 194,794 people in 27 communities. The 10,000-24,999 interval contained 295,022 people in 18 communities. The 25,000-49,999 interval had a population of 268,410 in 8 communities. The

¹Other recent studies which have examined trends in industrial location are [1], [2], [3], [4], [6], and [7].

50,000-99,999 interval and the 100,000 and over interval were made up of two cities each. The population of these two intervals were 123,097 and 687,070, respectively.

Change In The Structure Of The Oklahoma Economy

The sectors of an economy can be placed into three broad categories. First are the basic industries which are tied to the natural resources of the area. These basic industries include such activities as farming and mining. The second category is made up of primary industries which process the output of the basic industries. The manufacturing industries are included in the category. The third category includes secondary industries which service the basic and primary sectors. The secondary industries include such sectors as the financial, construction, retail and wholesale trade, transportation and communication, personal services, and government.

Since these secondary industries provide services to the basic and primary industries, the level of economic activity in the secondary industries is largely determined by the level of activity in the basic and primary sectors. For example, the opening of a new manufacturing plant in a community will probably be followed by increased construction employment to provide housing for the new workers and increased employment in the retail and wholesale trade sector and the personal services sector to provide goods and services to the new workers.

The basic industries, mining and agriculture, have not experienced a large growth in employment over the years 1963 through 1974. Mining sector employment has actually fallen as shown in Table 1.

It is doubtful that this trend will continue. Rapidly rising energy prices and new mining technology have made production economically favorable in many marginal gas, oil, and coal fields. This will most likely result in increases in mining employment in the state.

Data in Table 1 also show a major decrease in agricultural employment over the time period, but most of this is accounted for by a change in data reporting which removes a substantial amount of double counting. Once this change in reporting has been accounted for, there still appears to be a trend toward decreasing total agricultural employment.

The primary industries which coincide with the manufacturing sector have experienced strong growth in employment from 1963 through 1975. The manufacturing sector grew more in terms of employment than any other single sector over this time period. This employment growth was great enough to raise the manufacturing sector from the rank of fifth in total employment in Oklahoma in 1963 to the rank of third in 1974.

Each of the secondary industries sectors experienced an increase in employment. Within this broad category, the wholesale and retail trade sector

Table 1. Employment and Personal Income in Oklahoma, 1963-1974

Sector	1963 Employment in Thousands	1974 Employment in Thousands	% Change in Employment	1963 Income in Millions	1974 Income in Millions	% Change in Income
Farms	116.0 ¹	50.2 ¹	NA ¹	246	554	152.2
Mining	42.6	36.9	-13.4	298	519	74.1
Manufacturing	87.8	154.4	75.8	552	1,671	202.7
Durable	49.6	92.9	87.3	313	1,048	234.8
Nondurable	38.2	61.5	61.0	239	623	160.6
Contract Construction	31.6	44.3	40.2	227	595	162.1
Trade	138.1	196.0	41.9	692	1,590	130.1
Wholesale	35.4	43.8	23.7	241	555	130.2
Retail	102.7	152.2	48.2	450	1,035	130.0
Finance, Insurance and Real Estate	28.5	43.7	53.3	188	451	139.8
Transportation, Communication and Public Utilities	45.5	55.9	22.8	302	755	150.8
Services	79.4	132.3	66.6	492	1,257	155.4
Other Industries ²	113.6	128.4	13.1	13	35	169.2
Government	141.6	197.4	39.4	811	1,960	141.6
Federal	47.9	53.5	11.7	464	1,002	115.9
State and Local	93.7	143.9	53.6	346	958	176.8
Total ³	824.7	1,039.5	26.0	3,818	9,387	145.8

¹Employment data for 1963 overstate agricultural employment by counting operators, family members, and hired workers even when these individuals main employment was in some other sector. This double counting was corrected in 1972. For this reason, farm employment data for 1963 and 1974 are not comparable.

²Includes domestic service, self-employed, and unpaid family workers in employment data.

³Individual entries may not sum to column totals due to rounding.

Source: Department of Commerce, *Survey of Current Business*, Table 49, August, 1965 and August, 1976. Oklahoma Employment Security Commission, Research and Planning Division, *Oklahoma Labor Market*, February, 1964 and February, 1975.

experienced the greatest total growth in employment. The government sector remained the state's largest employer and experienced the second largest absolute increase in employment. The services sector which includes hotels, restaurants, medical services, and personal services experienced the third largest absolute growth in employment of all the secondary industries.

Total personal income in Oklahoma has more than doubled over the years 1963 through 1975 (Table 1). The government sector has led in income generation in Oklahoma. The manufacturing sector ranks second in income generation and has had the greatest percentage growth in income generated. The trade sector ranks third in income generation in Oklahoma and the services sector ranks fourth.

Data in Table 1 show that the manufacturing sector has shown the most vitality of all the sectors in the Oklahoma economy from 1963 through 1975. More jobs have been created in the manufacturing sector than in any other sector. The absolute increase in income earned in manufacturing was exceeded only by the increase in income earned in the government sector. The manufacturing sector experienced a higher percentage increase in employment and income than any other sector of the state's economy over these years. The remainder of this paper will examine in detail employment creation by new and expanded manufacturing plants in Oklahoma from 1963 through 1975.

Jobs Created By Manufacturing Plants in Oklahoma

From 1963 through 1975, 91,820 new jobs were created in Oklahoma by manufacturing activity, (Table 2). Fewer new manufacturing plants were created than the number of plants which expanded, but the new plants were responsible for creating more jobs in Oklahoma than were plant expansions. In fact, the 680 new plants created 47,380 new jobs for an average of 69.7 jobs per plant while the 938 plant expansions created 44,000 jobs for an average of 47.4 jobs per plant. In total, the new plants created 51.7 percent of all the new jobs in Oklahoma over this time period, and the expanded plants created 48.3 percent of the new jobs.

The 100,000 and over population interval which contains Tulsa and Oklahoma City, received 38.1 percent of all the jobs (Table 2). These two cities comprise the population interval 100,000 and more. The communities of less than 10,000 population received 35.9 percent of all the new jobs. Communities of 0 to 2,499 population received 9.9 percent of the state's total, those communities of 2,500 to 4,999 accounted for 7.0 percent of the jobs, and communities between 5,000 and 9,999 received 19.0 percent of the total. Communities between 10,000 and 99,999 received the remaining 26.0 percent of the states new manufacturing jobs. Communities in the 10,000 to 24,999

Table 2. Job Creation by New and Expanded Manufacturing Plants in Oklahoma, 1963 through 1975

Size Interval	New Manufacturing Plants			Expanded Manufacturing Plants			Total Jobs Created	Percent of Total	Percent Communities Population in Interval of Total (1970)
	Number of Plants	Number of Jobs	Jobs per Plant	Number of Plants	Number of Jobs	Jobs per Plant			
0 - 2,499	144	6,618	46.0	70	2,509	35.8	9,127	9.9	14.1
2,500 - 4,999	91	4,464	49.1	59	1,932	32.7	6,396	7.0	7.4
5,000 - 9,999	131	11,339	86.6	140	6,077	43.4	17,416	19.0	9.7
10,000 - 24,999	102	7,243	71.0	146	7,724	52.9	14,967	16.3	14.8
25,000 - 49,999	47	4,561	97.0	59	2,709	45.9	7,270	7.9	13.4
50,000 - 99,999	15	1,163	77.5	9	450	50.0	1,613	1.8	6.2
	150	11,992	79.9	455	23,039	50.6	35,020	38.1	34.4
Total	680	47,380	69.7	938	44,440	47.4	91,820	100.0	100.0

population interval received 16.3 percent of the jobs, those communities of population 25,000 to 49,999 accounted for 7.9 percent of the jobs, and those communities of 50,000 to 99,999 population received 1.8 percent of the state's total new manufacturing jobs.

Jobs Created by New Manufacturing Plants

More new jobs were created in the 100,000 and over population interval than in any other interval. This interval contains 34.4 percent of the state's total nonfarm population. These two largest cities received 22.1 percent of the new plants and 25.3 percent of all the jobs created by new manufacturing plants. Communities in the population interval 5,000 to 9,999 received almost as many jobs as did the two largest cities. These communities received 23.1 percent of the jobs created by new plants and 19.3 percent of the new plants. Since this population interval accounts for only 9.7 percent of the state's nonfarm population, communities in this size interval received more than three times the jobs per capita of the largest cities. The next most important community sizes were the 10,000 to 24,999 interval with 15.3 percent of the new jobs and 15.0 percent of the new plants, and communities of less than 2,500 population which received 14.0 percent of the new jobs and 21.1 percent of the new manufacturing plants.

A more understandable picture of industrialization may be presented by comparing three broader size classes of communities. The size class composed of cities in excess of 100,000 population contained 687,070 people or 34.4 percent of the nonfarm population and received 25.3 percent of the jobs created by new manufacturers. Those cities of population between 10,000 and 99,999 had a combined population of 686,529 or 34.4 percent of the state's total and received 27.4 percent of the new manufacturing jobs. The cities in the smallest interval of 0-9,999 people accounted for the smallest proportion of the state's population with 31.2 percent or 623,983 people, but received the largest share of the jobs created by new manufacturing plants, 47.3 percent. This serves as evidence that manufacturing plants in general were more attracted to communities in the lower end of the size distribution of cities than those large metropolitan centers which compose the upper end of this distribution.

Jobs Created by Plant Expansion

A total of 44,440 jobs were created by manufacturing plant expansions in Oklahoma from 1963 through 1975 (Table 2). The very largest cities, Oklahoma City and Tulsa, accounted for more than half of all jobs created by plant expansions. They received 23,039 new jobs or 51.8 percent of the total. The

small and medium sized cities shared the remaining 48.2 percent almost equally. Those cities of less than 10,000 population received 10,518 jobs or 23.6 percent of the total while those cities between 10,000 and 99,999 received 10,883 jobs or 24.5 percent of the total. This heavy concentration of jobs created in the metropolitan areas by plant expansion is to be expected since it is in these cities where most existing manufacturing plants were located at the beginning of the study period.

Jobs Created by New Manufacturing Plants by Industrial Type

In total, 680 new plants which located in Oklahoma from 1963 through 1975 created 47,380 jobs. The number of new plants which are located and the number of jobs created are presented by industry and community size in Tables 3 and 4.

The industry groups opening the largest number of new plants (Table 3) were apparel (SIC 23), transportation equipment (SIC 37), fabricated metal products (SIC 34) and machinery except electrical (SIC 35). The industry groups creating the most jobs (Table 4) were apparel (SIC 23), rubber and miscellaneous plastics (SIC 30) electrical and electronic machinery (SIC 37), and machinery except electrical (SIC 35). About half of the new jobs created were in these five industry groups.

When job creation by new plants is examined over time, it is apparent that there has been more activity in recent years than there was in the early years of the thirteen year time period covered by this study. (Appendix Table 1) Omitting 1975, the data may be divided into quarters, the first quarter provided 12.4 percent of the state's total jobs from these plants, the second quarter provided 19.7 percent, the third quarter accounted for 29.1 percent and the last quarter accounted for 35.0 percent.

Jobs Created by Expanded Manufacturing Plants by Industry Type

A total of 44,440 jobs were created by the 938 manufacturing plants which expanded their physical capacity in Oklahoma from 1963 through 1975. The number of plants expanding and jobs created by industry type and community size are presented in Tables 5 and 6.

The industry groups with the most expansions were food and kindred products (SIC 20), apparel (SIC 23), fabricated metal products except machinery (SIC 34), machinery except electrical (SIC 35), and transportation (SIC 37). The industry groups creating the most jobs were transportation equipment (SIC 37), machinery except electrical (SIC 25), apparel (SIC 23),

Table 3. New Plants in Oklahoma Classified by City Size and Industry Group 1963 Through 1975

SIC Code	Industry Group	0-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000+	Total	% of Total
20	Food and Kindred Prod.	9	4	10	6	5	1	7	42	6.2
21	Tobacco Manufacturers	-	-	-	-	-	-	-	0	0
22	Textile Mill Products	3	6	7	4	2	-	-	22	3.2
23	Apparel	11	14	15	5	-	1	4	50	7.4
24	Lumber & Wood Prod. except Furniture	10	6	10	12	3	-	4	45	6.6
25	Furniture & Fixtures	11	2	10	5	2	-	5	35	5.2
26	Paper & Allied Prod.	5	-	2	3	1	-	4	15	2.2
27	Printing, Publishing	-	-	-	1	1	-	8	10	1.5
28	Chemicals & Allied Pr.	10	6	10	4	3	-	11	44	6.5
29	Petroleum Refining & Related Industries	5	1	4	1	2	-	2	15	2.2
30	Rubber & Misc. Plastic Products	2	2	2	5	5	1	13	30	4.4
31	Leather & Leather Prod.	3	-	1	2	-	-	1	7	1.0
32	Stone, Clay, Glass & Concrete Products	10	10	6	4	6	1	11	48	7.1
33	Primary Metal Ind.	5	7	8	2	4	-	9	35	5.2
34	Fabricated Metal Prod. except Machinery	9	8	8	15	6	2	23	71	10.4
35	Machinery, except Elec. & Trans.	17	6	21	10	3	3	14	74	10.8
36	Electrical & Electronic Mach. & Equip.	9	6	7	4	1	1	15	43	6.3
37	Transportation Equip.	14	7	5	12	3	4	13	58	8.5
38	Instruments & Related Products	2	1	2	4	-	-	4	13	1.9
39	Misc. Manu. Ind.	9	5	3	3	-	1	2	23	3.4
	Total	144	91	131	102	47	15	150	680	100.0
	% of Total	21.1	13.4	19.3	15.0	6.9	2.2	22.1	100.0	

Table 4. Plant Expansions in Oklahoma Classified by City Size and Industry Group 1963 Through 1975

SIC Code	Industry Group	0-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000+	Total	% of Total
20	Food and Kindred Prod.	7	2	12	15	3	2	42	83	8.9
21	Tobacco Manufacturers	-	-	-	-	-	-	-	0	0
22	Textile Mill Products	2	3	6	4	-	-	1	16	1.7
23	Apparel	6	17	24	14	4	1	10	76	8.1
24	Lumber & Wood Prod. except Furniture	5	6	10	6	-	-	5	32	3.4
25	Furniture & Fixtures	2	2	4	-	2	1	5	16	1.7
26	Paper & Allied Prod.	2	-	-	3	-	-	6	11	1.2
27	Printing, Publishing	-	3	2	1	2	1	26	35	3.7
28	Chemicals & Allied Pr.	1	3	8	2	1	-	18	33	3.5
29	Petroleum Refining & Related Industries	6	3	1	6	7	-	7	30	3.2
30	Rubber & Misc. Plastic Products	-	1	9	14	1	-	19	44	4.7
31	Leather & Leather Prod.	1	-	5	1	-	-	1	8	0.9
32	Stone, Clay, Glass & Concrete Products	6	1	8	11	5	-	28	59	6.3
33	Primary Metal Ind.	2	3	3	5	4	-	16	33	3.5
34	Fabricated Metal Prod. except Machinery	3	2	10	18	5	-	97	135	14.4
35	Machinery, except Elec. & Trans.	13	5	19	19	15	1	78	150	16.0
36	Electrical & Electronic Mach. & Equip.	6	1	6	10	5	2	26	56	6.0
37	Transportation Equip.	7	6	7	12	3	1	48	84	8.9
38	Instruments & Related Products	1	-	3	2	1	-	10	17	1.8
39	Misc. Manu. Ind.	-	1	3	3	1	-	12	20	2.1
	Total	70	59	140	146	59	9	455	938	100.0
	% of Total	7.5	6.3	14.9	15.5	6.3	1.0	48.5	100.0	

Table 5. Plant Expansions in Oklahoma Classified by City Size and Industry Group 1963-1975

Sic Code	Industry Group	0-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000+	Total	% of Total
20	Food and Kindred Prod.	7	2	12	15	3	2	42	83	8.9
21	Tobacco Manufacturers	-	-	-	-	-	-	-	0	0
22	Textile Mill Products	2	3	6	4	-	-	1	16	1.7
23	Apparel	6	17	24	14	4	1	10	76	8.1
24	Lumber & Wood Prod. except Furniture	5	6	10	6	-	-	5	32	3.4
25	Furniture & Fixtures	2	2	4	-	2	1	5	16	1.7
26	Paper & Allied Prod.	2	-	-	3	-	-	6	11	1.2
27	Printing, Publishing	-	3	2	1	2	1	26	35	3.7
28	Chemicals & Allied Pr.	1	3	8	2	1	-	18	33	3.5
29	Petroleum Refining & Related Industries	6	3	1	6	7	-	7	30	3.2
30	Rubber and Misc. Plastic Products	-	1	9	14	1	-	19	44	4.7
31	Leather & Leather Prod.	1	-	5	1	-	-	1	8	0.9
32	Stone, Clay, Glass & Concrete Products	6	1	8	11	5	-	28	59	6.3
33	Primary Metal Ind.	2	3	3	5	4	-	16	33	3.5
34	Fabricated Metal Prod. except Machinery	3	2	10	18	5	-	97	135	14.4
35	Machinery, except Elec. & Trans.	13	5	19	19	15	1	78	150	6.0
36	Electrical & Electronic Mach. & Equip.	6	1	6	10	5	2	26	56	6.0
37	Transportation Equip.	7	6	7	12	3	1	48	84	8.9
38	Instruments & Related Prod.	1	-	3	2	1	-	10	17	1.8
39	Misc. Manu. Ind.	-	1	3	3	1	-	12	20	2.1
	Total	70	59	140	146	59	9	455	938	100.0
	% of Total	7.5	6.3	14.9	15.5	6.3	1.0	48.5	100.0	

Table 6. Job Creation by Manufacturing Plant Expansions in Oklahoma 1963-1975 Classified by Industry Group and City Size

SIC Code	Industry Group	0-2,499	2,500-4,999	5,000-9,999	10,000-24,999	25,000-49,999	50,000-99,999	100,000+	Total	% of Total
20	Food and Kindred Prod.	57	145	177	145	10	32	613	1,179	2.7
21	Tobacco Manufacturers	0	0	0	0	0	0	0	0	0
22	Textile Mill Products	225	220	590	320	0	0	32	1,387	3.1
23	Apparel	405	699	2,175	1,263	660	60	701	5,963	13.4
24	Lumber & Wood Prod. except Furniture	303	151	401	145	0	0	60	1,060	2.4
25	Furniture & Fixtures	65	210	80	0	40	6	100	501	1.1
26	Paper & Allied Prod.	41	0	0	27	0	0	66	134	0.3
27	Printing, Publishing	0	27	4	0	0	0	174	205	0.5
28	Chemicals & Allied Pr.	2	50	46	0	6	0	156	260	0.6
29	Petroleum Refining & Related Industries	38	80	0	27	261	0	108	514	1.2
30	Rubber & Misc. Plastic Products	0	2	144	925	10	0	1,243	2,324	5.2
31	Leather & Leather Prod.	10	0	470	25	0	0	10	515	1.2
32	Stone, Clay, Glass & Concrete Products	111	26	15	186	90	0	521	949	2.1
33	Primary Metal Ind.	4	122	110	430	148	0	309	1,123	2.5
34	Fabricated Metal Prod. except Machinery	72	22	180	1,062	73	0	3,022	4,431	10.0
35	Machinery, except Elec. & Trans.	478	61	529	604	588	12	3,956	6,228	14.0
36	Electrical & Electronic Mach. & Equip.	368	35	531	1,364	563	90	2,500	5,451	12.3
37	Transportation Equip.	330	62	372	1,107	245	250	9,109	11,475	25.8
38	Instruments & Related Products	0	0	180	25	2	0	230	437	1.0
39	Misc. Manu. Ind.	0	20	73	69	13	0	129	304	0.6
	Total	2,509	1,932	6,077	7,724	2,709	450	23,028	44,440	100.0
	% of Total	5.6	4.3	13.7	17.4	6.1	1.0	51.8	100	

and electrical and electronic machinery (SIC 36). The jobs created by plant expansions were concentrated into fewer industries than were jobs at new plants. The four largest industry groups accounted for 65 percent of the total jobs created by expansions.

The jobs at expanded plants were also much more concentrated in the cities over 100,000 population than were the jobs at new plants. This community size interval received over half of the jobs created by plant expansions. The mid-sized communities of 10,000 to 99,999 and the communities of less than 10,000 each received just under a quarter of the jobs created by expanded plants.

Creation of jobs from plants expanding has not increased over time as the creation of jobs by new plants. (Appendix Table 2) If 1975 is omitted the first three years of the study accounted for 18.5 percent of the jobs created by plant expansions, the next three years accounted for 28.4 percent, the next three 23.6 percent and the final three years 27.4 percent of the jobs.

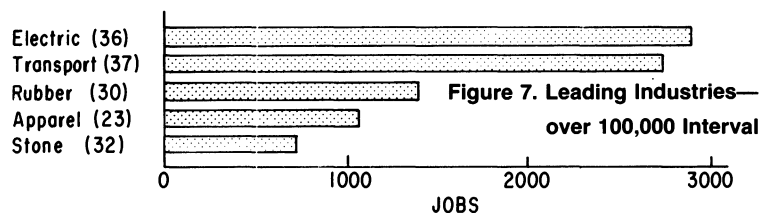
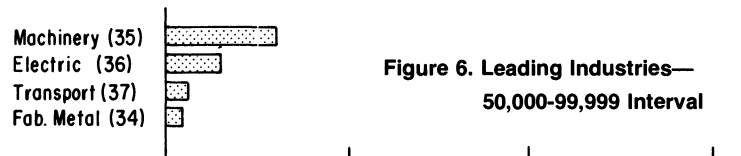
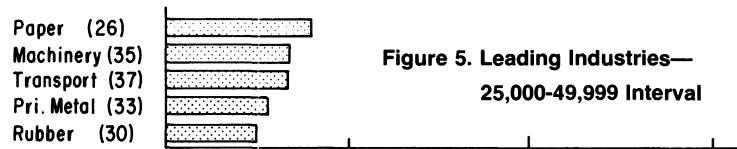
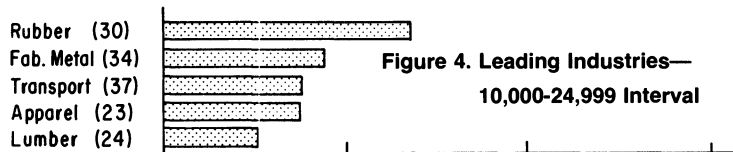
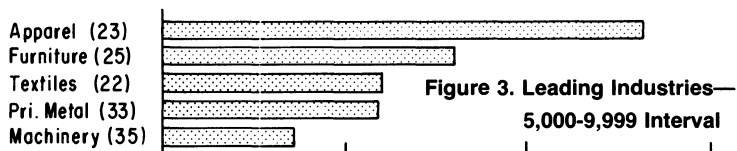
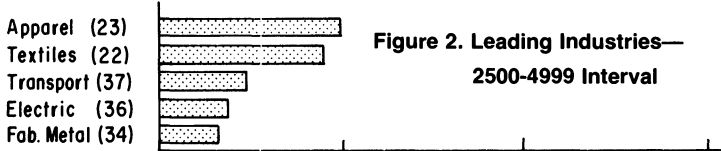
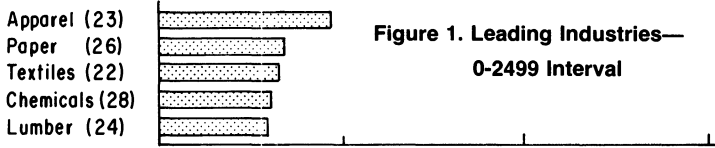
Types of Industries and Number of Jobs Created by Community Size

The type of manufacturing industries locating in various size communities in Oklahoma is another important aspect to consider. Overall, each community size interval attracted a wide variety of industrial types, some were more prominent among certain sizes than others. Data in Figures 1 through 7 indicate the five most important industrial groupings by community size interval. Apparel (SIC 23) was the most popular industry grouping for creating jobs in the 0-2,499, 2,500-4,999, and 5,000-9,999 community size intervals. Also popular in these three intervals was textile mill products (SIC 22).

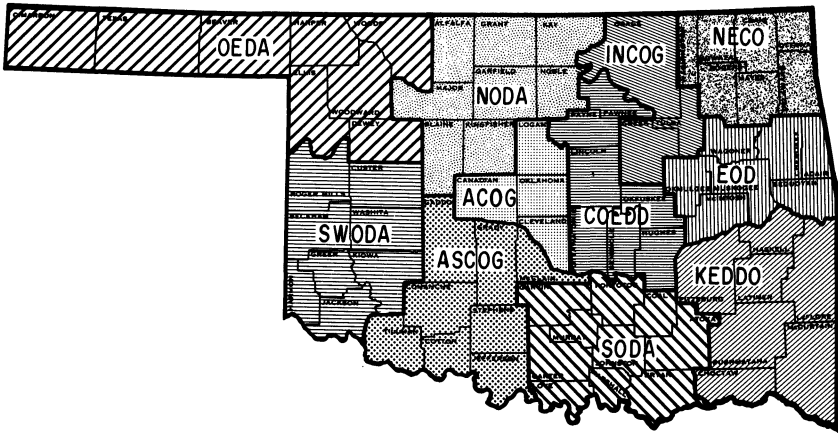
In communities ranging from 10,000 to 24,999, the rubber industry groups (SIC 30) was the most popular. Paper and allied products (SIC 26), machinery, except electrical (SIC 35) and transportation equipment (SIC 37) were the most popular industry groupings for communities ranging from 25,000-49,999 population. In the interval from 50,000 through 99,999, the machinery except electrical group (SIC 35) was the most popular, whereas the electrical equipment (SIC 36) and transportation equipment (SIC 37) were by far the most popular industry groups in the communities above 100,000 populations.

Job Creation by Manufacturing Plants Classified by Sub-State Planning Districts

The eleven sub-state planning districts in Oklahoma are multicounty areas delineated by the Oklahoma Industrial Development and Park Com-



mission. They were created in 1971 by Executive order of the Governor to provide a means for coordinating functional planning and for delivery federal and state services to the cooperating governmental units which compose them. A delineation of the sub-state planning districts is found on Figure 8. Detailed information on number of new plants locating in each district is found in Appendix Table 3, jobs created by new plants in Appendix Table 4, and jobs created by plants expansions in Appendix Table 5.



- NECO**-Northeast Counties of Oklahoma Economic Development Association
- EODD**-Eastern Oklahoma Development District
- KEDDO** - Kiamichi Economic Development District of Oklahoma
- SODA** - Southern Oklahoma Development Association
- COEED** - Central Oklahoma Economic Development District
- INCOG** - Indian Nations Council of Governments
- NODA** - Northern Oklahoma Development Association
- ACOG** - Association of Central Oklahoma Governments
- ASCOG** - Association of South Central Oklahoma Governments
- SWODA** - South Western Oklahoma Development Authority
- OEDA** - Oklahoma Economic Development Association

Figure 8. Substate Planning Districts of Oklahoma.

District 1 - NECO

The Northeast Counties of Oklahoma Economic Development Association (NECO) is composed of Ottawa, Delaware, Mayes, Craig, Nowata, Rogers and Washington Counties. This district received 7,387 new jobs from the manufacturing sector, 4,512 of these jobs were created by the sixty-eight new plants, and 2,875 were created by the sixty-nine (Table 12) plants which expanded their operations in this district.

The primary metal industry accounted for 1,027 jobs created at new plants in this district, while the fabricated metal products except machinery industry created 568 jobs at its new plants, (Figure 9). The chemicals and allied products industry opened six new plants in this district to create 544 new jobs.

Those existing firms which generated the greatest amount of new jobs by expanding their plants were in the electrical and electronic machinery and equipment industry, the rubber and miscellaneous plastic products industry, and the textile mill products industry.

District 2 - EODD

The Eastern Oklahoma Development District (EODD) is made up of Adair, Sequoyah, Muskogee, Cherokee, Wagoner, McIntosh, and Okmulgee Counties. The manufacturing sector created 4,613 new jobs in this district from 1963 through 1975. Forty-eight new plants located here to create 3,557 jobs, and forty-six existing plants expanded over this time period to create 1,056 jobs.

Firms in the paper and allied products industry created 800 new jobs by locating new plants in EODD to make them the single most important source of jobs from new firms for this district, (Figure 10). Firms in the electrical and electronics equipment industry, the stone, clay, glass and concrete products industry, and the food and kindred products industry were also important to EODD in that they created 373, 333 and 301 jobs respectively. These four industries created slightly over half of the jobs from new plants in this district. Firms in the electrical and electronic equipment industry were responsible for creating over half of the jobs that were created by expanding manufacturing plants.

District 3 - KEDDO

The Kiamichi Economic Development District of Oklahoma (KEDDO) was formed by the joining together of LeFlore, McCurtain, Choctaw, Pushmataha, Latimer, Haskell, and Pittsburg Counties. Of the 6,652 new

jobs, 3,640 were from forty-four new plants, 3,012 were from forty-five expanded plants.

The textile mill products industry created 675 jobs at its two new plants to make it the most important source of jobs at new plants in this district, Figure 11. The paper and allied products industry created 600 new jobs at its two plants, and the apparel industry created 550 new jobs at its five new plants. Firms in these three industries were responsible for creating more than half of the jobs created by new plants in this district over the last thirteen years.

The most important firms which expanded in this district were firms in the apparel industry, the fabricated metal products except machinery industry, and the lumber and wood products except furniture industry. Respectively, these industries created 748,471, and 384 new jobs and together they accounted for 53.2 percent of the jobs created by expanding manufacturing plants.

District 4 - SODA

The Southern Oklahoma Development Association (SODA) is made up of Atoka, Coal, Bryan, Marshall, Johnston, Pontotoc, Murray, Love, Carter, and Garvin Counties.

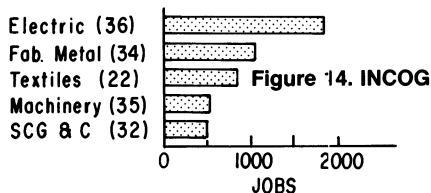
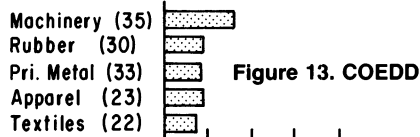
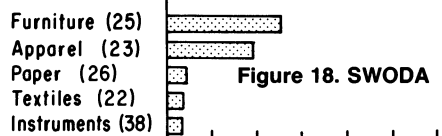
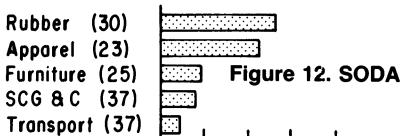
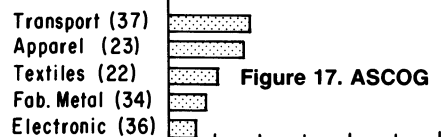
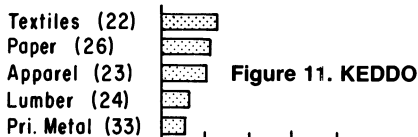
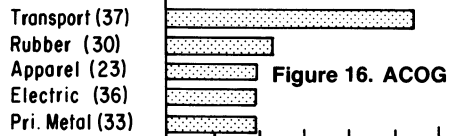
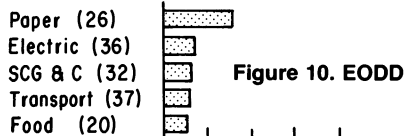
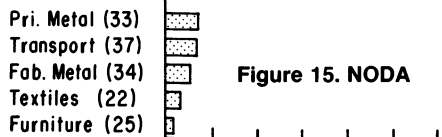
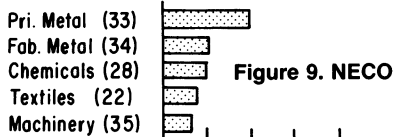
Sixty-three new plants were opened in this district to create 4,737 jobs and sixty-eight plants expanded to create 3,121 new jobs. The rubber and miscellaneous plastic products industry was the largest single source of jobs from new plants (Figure 12) the apparel manufacturers followed by creating 1,143 jobs in five new plants in this district. These two industries account for more than half of the jobs created by new plants in SODA.

Producers in the electrical and electronic machinery and equipment industry expanded their plants to create 1,166 new jobs, and the apparel producers created 1,010 new jobs here by expanding their plants. These two industries account for more than two thirds of the jobs created by expanded plants.

District 5 - COEDD

This district, the Central Oklahoma Economic Development District (COEDD), is composed of Pottawatomie, Seminole, Hughes, Okfuskee, Lincoln, Payne and Pawnee Counties.

This district received 3,638 jobs from forty-nine new plants and 2,142 jobs from forty-four expanded plants. The machinery, except electrical and transportation equipment machinery industry created 820 jobs at its five new plants, the rubber and miscellaneous plastic products industry created 475



jobs in two new plastics, and the apparel industry opened five new plants to create 448 jobs, (Figure 13).

Of the 2,142 jobs created by 44 expanding manufacturing plants, more than half, 1,352 were created by the expanding apparel industry. Other expanding industries which were important in COEDD were the electrical and electronic equipment producers and the rubber and miscellaneous plastics products producers.

District 6 - INCOG

The Indian Nations Council of Governments (INCOG) is made up of Osage, Tulsa, and Creek Counties. INCOG received more jobs over this time period than any other sub-state planning district in Oklahoma. Plant expansions were a more important source of jobs in INCOG than were new plant openings. Two hundred and ninety plants expanded to create 16,802 jobs, and one hundred and three new plants opened to create 6,802 jobs.

Of the new firms locating here, those in the electrical and electronic machinery and equipment industry were most important in that they created 1,839 new jobs, (Figure 14). Firms in the fabricated metal products except machinery industry created 1,073 new jobs by locating here, and textile mill products producers created 865 new jobs.

The single most important source of jobs was the expansion of the transportation equipment industry in INCOG. The expansion of firms in this single industry created 7,722 jobs. This exceeds the total number of jobs created by all new manufacturing over this time period. Other expanding industry groups which were important in this district were the fabricated metal products except machinery industry with 2,896 jobs, and the machinery, except electrical and transportation equipment industry which created 2,202 jobs.

District 7 - NODA

The counties of Alfalfa, Grant, Kay, Noble, Garfield, Major, Blaine and Kingfisher comprise the Northern Oklahoma Development Association (NODA). This sub-state planning district received 3,237 jobs over this thirteen year time period. 1,990 of these were created by forty-seven new plants and 1,247 were created by thirty-nine expanded plants.

The primary metal industry created 405 new jobs at its two new plants to make it the most important source of new jobs, (Figure 15). The transportation equipment industry was also important since it created 400 jobs at its

three new plants. The fabricated metal products except machinery industry created 317 new jobs at five new plants.

Expanded plants in the machinery, except electrical and transportation equipment industry created 630 jobs. Plants in the transportation equipment industry expanded their operations to produce 251 new jobs, and plants in the petroleum refining industry expanded to create 223 new jobs.

District 8 - ACOG

The Association of Central Oklahoma Governments (ACOG) is made up of Logan, Canadian, Cleveland, and Oklahoma Counties. This district was the second largest recipient of manufacturing jobs. Of the 20,685 jobs created here, 9,855 were created by 125 new plants and 10,830 were created by 251 plant expansions.

The transportation equipment industry created 2,818 jobs at its new plants in this district, (Figure 16). The rubber and miscellaneous plastics products industry created 1,235 jobs and the apparel industry created 1,078 new jobs. These three groups of manufacturers were responsible for 52 percent of the jobs created by new plants in this district.

The transportation equipment industry was also responsible for creating the largest number of jobs by plant expansions. Firms in the transportation equipment industry created 2,491 jobs by enlarging their plants. Other industries whose firms expanded to create new jobs were the machinery, except electrical and the electrical machinery and equipment industry. They created 2,215 and 1,751 jobs respectively.

District 9 - ASCOG

ASCOG, The Association of South Central Oklahoma Governments contains Caddo, Grady, Stephens, Jefferson, Cotton, Tillman and Comanche Counties. This district received 6.8 percent of the new jobs created by manufacturing in Oklahoma. Fifty-four new plants created 3,933 jobs and fifty-one expanding manufacturing plants created 2,343 jobs.

The transportation equipment industry created 939 jobs in this district by locating eight new plants here, (Figure 17). The apparel industry opened seven new plants to create 869 new jobs, and the textile mill products industry opened two new plants to create 585 new jobs. These three industries accounted for over half of the jobs created by new plants in this district. The lumber and wood products except furniture industry and the furniture and fixtures industry were also important to this district in that they each located seven of their new plants in ASCOG.

The textile mill products industry and the apparel industry were also quite important to this district as a source of new employment from manufacturing plant expansions. They created 525 new jobs and 489 new jobs respectively. The leather and leather products industry expanded in ASCOG to create 325 jobs. These three industries account for more than half the jobs created by expanded manufacturing plants in this district.

District 10 - SWODA

Roger Mills, Custer, Beckham, Washita, Greer, Kiowa, Harmon, and Jackson counties make up the South Western Oklahoma Development Authority (SWODA). This district was the recipient of 4 percent of the state's manufacturing jobs.

Forty-nine new plants located in SWODA to create 3,642 new jobs, and twenty plants expanded to create 559 new jobs. The most important source of new jobs was the furniture and fixtures industry which created 1,300 jobs at three new plants, (Figure 18). The industry group creating the second largest number of jobs was the apparel industry with 992 jobs. The apparel industry expanded seven of its plants to create 471 of the 559 jobs created by plant expansions in this district.

District 11 - OEDA

This development district, the Oklahoma Economic Development Association is composed of Cimarron, Texas, Beaver, Harper, Woods, Ellis and Woodward Counties. OEDA received the smallest proportion of the State's industrial development. Only 1,471 or 1.6 percent of the state's total new manufacturing jobs were created here over the thirteen years of this study. 1,074 jobs were brought into existence by new plants and 397 jobs were generated by plant expansion.

The apparel industry was the largest source of new jobs for this district. Two new apparel plants located here to create 527 new jobs, (Figure 19). The second largest source of jobs was the chemical and allied products industry which opened five plants in OEDA to create 197 new jobs. The food and kindred products industry opened three new plants to create forty new jobs. This industry was also the most important source of jobs from plant expansion in this district since it expanded six plants and created 223 of the 397 total jobs from plant expansions.

Summary

The manufacturing sector of the Oklahoma economy created 91,820 jobs from 1963 to 1975. New manufacturing plants which expanded their operations over this time period created an additional 44,440 jobs. There were 680 new plants and 938 plants which expanded.

The industries which were most important at sources of new jobs in new plants were the apparel industry, the transportation equipment industry, the electrical and electronic machinery and equipment industry, the rubber and miscellaneous plastic products industry, the machinery except electrical and transportation equipment industry and the textile mill products industry. These six industries were responsible for creating over half of the jobs created new plants in Oklahoma.

Those industries which have expanded their plants by the greatest amounts of employment are the transportation equipment industry, the machinery except electrical and transportation equipment industry, the apparel industry and the electrical and electronic machinery and equipment industry. These four industries expanded their plants to create almost two-thirds of the jobs created by plant expansions.

The cities in excess of 100,000 population, Oklahoma City and Tulsa, received the largest share of the employment created by new plants. The electrical and electronic machinery and equipment industry, the transportation equipment industry, the rubber and miscellaneous plastic products industry, and the apparel industry were these cities greatest sources of jobs from new plants. These metropolitan areas received 25.3 percent of the states new jobs and contain 24.4 percent of the non-farm population.

Communities in the 5,000 to 9,999 population interval received almost as many jobs from new manufacturing plants as the metropolitan centers. These smaller communities accounted for 23.9 percent of the state's jobs from new plants and contain only 9.7 percent of the non-farm population. The most important sources of jobs from new plants in these communities were the apparel industry, the textile mill products industry, the transportation equipment industry and the machinery except electrical and transportation equipment industry.

Communities of 10,000 to 24,999 population received 15.3 percent of the jobs created at new plants. The rubber and miscellaneous plastic products industry, the fabricated metal products except machinery industry, the transportation equipment industry and the apparel industry located plants in communities in this population interval to create over half of the jobs created by new plants.

The smallest communities, those under 2,500 population, received 14.0 percent of the state's jobs created at new plants. The most important industries to created employment by locating new plants in these cities were the

apparel industry, the paper and allied products industry, the textile mill products industry, and the lumber and wood products except furniture industry.

The towns of less than 10,000 accounted for less total population than those communities in the 10,000 to 100,000 interval or the over 100,000 population interval, but received more jobs. Those communities of less than 10,000 received 47.3 percent of the jobs created by new plants. Mid-sized communities between 10,000 and 100,000 received 25.3 percent of these jobs created by new plants.

The sub-state planning district which received the largest number of new jobs from new manufacturing plants was ACOG, the Association of Central Oklahoma Governments. This district received 20.8 percent of the jobs created by new plants. The majority of these plants were opened in Oklahoma City. The Indian Nations Council of Governments where Tulsa is located, accounted for 14.3 percent of the state's jobs created at new plants. The southeast corner which is made up of KEDDO and SODA received 17.7 percent of the jobs. The central section of the state composed of ACOG and COEDD accounted for 28.5 percent of these new jobs. The southwest corner of the state SWODA and ASCOG, received 16.0 percent and the northwest corner which is made up of NODA and OEDA received 6.5 percent of the jobs.

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Appendix Table 1. Jobs Created in Oklahoma by New Manufacturing Plants Classified by City Size

City Size	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	Total	% Total
0 - 2,499	282	288	11	307	613	682	1,007	791	437	1,142	624	162	272	6,618	14.0
2,500 - 4,999	80	16	109	86	362	498	620	537	105	322	1,230	391	108	4,464	9.4
5,000 - 9,999	248	29	343	1,286	998	687	1,219	826	1,336	1,072	1,238	1,452	605	11,339	23.9
10,000 - 24,999	176	59	318	530	557	682	1,960	160	695	550	326	555	675	7,243	15.3
25,000 - 49,999	26	164	98	134		417	478	140	32	631	1,440	1,001		4,561	9.6
50,000 - 99,999			60	47	8	35	65	500	26		305	57	60	1,163	2.5
100,000+	2,809	386	372	410	773	250	1,337	432	1,005	350	2,934	822	50	11,992	25.3
Total	3,621	942	1,311	2,800	3,311	3,251	6,686	3,386	3,696	4,067	8,099	4,440	1,770	47,380	100.0
% of Total	7.6	2.0	2.8	5.9	7.0	6.9	14.1	7.1	7.8	8.6	17.1	9.4	3.7	1,000	100.0

Appendix Table 2. Jobs Created in Oklahoma by Expanded Manufacturing Plants Classified by City Size

City Size	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	Total	% Total
0 - 2,499	103	3	34	186	224	200	154	411	294	138	466	274	22	2,509	5.6
2,500 - 4,999		35	88	92	80	60	233	105	76	420	185	483	75	1,932	4.3
5,000 - 9,999	315	529	190	515	751	723	195	634	561	426	697	478	63	6,077	13.7
10,000 - 24,999	720	230	762	956	687	428	582	1,020	475	575	761	528		7,724	17.4
25,000 - 49,999	3	86	224	187	456	177	50	184	7	11	838	291	195	2,709	6.1
50,000 - 99,999			27	12	65		250	5	60	6			25	450	1.0
100,000+	188	4,461	232	2,963	1,406	2,455	2,562	2,202	441	2,072	2,779	767	511	23,039	51.8
Total	1,329	5,344	1,557	4,911	3,669	4,043	4,026	4,561	1,914	3,648	5,726	2,821	891	44,440	100.0
% of Total	3.0	12.0	3.5	11.1	8.3	9.1	9.1	10.2	4.3	8.2	12.9	6.3	2.0	100.0	100.0

Appendix Table 3. Number of New Plants Classified by Sub-State Planning Districts

SIC Code	Industry Group	NECO	EODD	KEDDO	SODA	COEDD	INCOG	NODA	ACOG	ASCOG	SWODA	OEDA	Total	% of Total
20	Food and Kindred Prod.	5	4	3	6	3	3	2	6	3	4	3	42	6.2
21	Tobacco Manufacturers	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Textile Mill Products	4	0	2	0	2	8	2	1	2	1	0	22	3.2
23	Apparel	3	3	5	9	5	3	1	4	7	8	2	50	7.4
24	Lumber & Wood Prod. except Furniture	5	2	7	2	3	7	3	7	7	2	0	45	6.6
25	Furniture & Fixtures	2	3	3	4	0	1	4	0	7	3	2	35	5.2
26	Paper & Allied Prod.	4	1	2	1	1	1	0	4	0	1	0	15	2.2
27	Printing, Publishing	0	0	0	0	0	4	0	5	1	0	0	10	1.5
28	Chemicals & Allied Pr.	6	2	2	1	2	4	5	9	6	2	5	44	6.5
29	Petroleum Refining & Related Industries	1	1	0	2	2	1	4	3	0	0	1	15	2.2
30	Rubber & Misc. Plastic Products	1	2	1	4	2	6	2	9	1	2	0	30	4.4
31	Leather & Leather Prod.	1	0	0	2	1	2	1	0	0	0	0	7	1.0
32	Stone, Clay, Glass & Concrete Products	3	9	4	6	8	5	1	8	1	3	0	48	7.1
33	Primary Metal Ind.	7	5	1	0	4	5	2	7	2	2	0	35	5.2
34	Fabricated Metal Prod. except Machinery	9	2	3	1	3	26	5	15	6	1	0	71	10.4
35	Machinery, except Elec. & Trans.	10	3	4	6	5	10	9	15	4	5	3	74	10.8
36	Electrical & Elec. Mach. & Equip.	3	4	4	3	3	6	2	9	6	3	0	43	6.3
37	Transportation Equip.	4	2	2	7	4	9	3	10	8	7	2	58	8.5
38	Instruments & Related Products	0	0	1	3	0	2	0	3	1	3	0	13	1.9
39	Misc. Manu. Ind.	0	5	0	6	1	0	1	4	2	2	2	23	3.4
	Total	68	48	44	63	49	103	47	125	64	49	20	680	100.0
	% of Total	10.0	7.1	6.5	9.3	7.2	15.1	6.9	18.4	9.4	7.2	2.9	100.0	

Appendix Table 4. Jobs Created by New Manufacturing Plants in Oklahoma 1963-1975 Classified by Sub-State Planning District

SIC Code	Industry Group	NECO	EODD	KEDDO	SODA	COEDD	INCOG	NODA	ACOG	ASCOG	SWODA	OEDA	Total	% of Total
20	Food and Kindred Prod.	182	301	268	178	41	93	17	216	34	16	145	1,491	3.1
21	Tobacco Manufacturers													0.0
22	Textile Mill Products	410	0	675	0	375	865	222	75	585	200	0	3,407	7.2
23	Apparel	92	272	550	1,143	448	395	35	1,078	869	992	527	6,401	13.5
24	Lumber & Wood Prod. except Furniture	272	260	350	225	123	292	57	119	244	108	0	2,050	4.3
25	Furniture & Fixtures	300	180	280	460	0	30	134	61	121	1,300	123	2,989	6.3
26	Paper & Allied Prod.	210	800	600	7	13	200	0	93	0	213	0	2,136	4.5
27	Printing, Publishing	0	0	0	0	0	71	0	213	10	0	0	294	0.6
28	Chemicals & Allied Pr.	544	133	8	5	13	50	127	237	30	122	197	1,466	3.1
29	Petroleum Refining & Related Industries	20	20	0	3	28	4	38	265	0	0	4	382	0.8
30	Rubber & Misc. Plastic Products	7	75	65	1,334	475	184	20	1,235	25	80	0	3,500	7.4
31	Leather & Leather Prod.	11	0	0	23	25	27	40	0	0	0	0	126	0.3
32	Stone, Clay, Glass & Concrete Products	23	333	49	418	347	532	8	229	1	32	0	1,972	4.2
33	Primary Metal Ind.	1,027	266	300	0	453	265	405	67	68	43	0	2,894	6.1
34	Fabricated Metal Prod. except Machinery	568	122	75	50	105	1,073	317	300	433	4	0	3,047	6.4
35	Machinery, except Elec. & Trans.	354	59	61	230	820	551	91	1,069	128	82	41	3,486	7.4
36	Electrical & Elec. Mach. & Equip.	302	373	260	166	170	1,839	79	1,070	329	59	0	4,647	9.8
37	Transportation Equip.	190	310	93	255	102	324	400	2,818	939	179	23	5,633	11.9
38	Instruments & Related Products	0	0	6	43	0	7	0	622	100	194	0	972	2.1
39	Misc. Manu. Ind.	0	53	0	197	100	0	0	88	17	18	14	487	1.0
	Total	4,512	3,557	3,640	4,737	3,638	6,802	1,990	9,855	3,933	3,642	1,074	47,380	100.0
	% of Total	9.5	7.5	7.7	10.0	7.7	14.3	4.2	20.8	8.3	7.7	2.3	100.0	

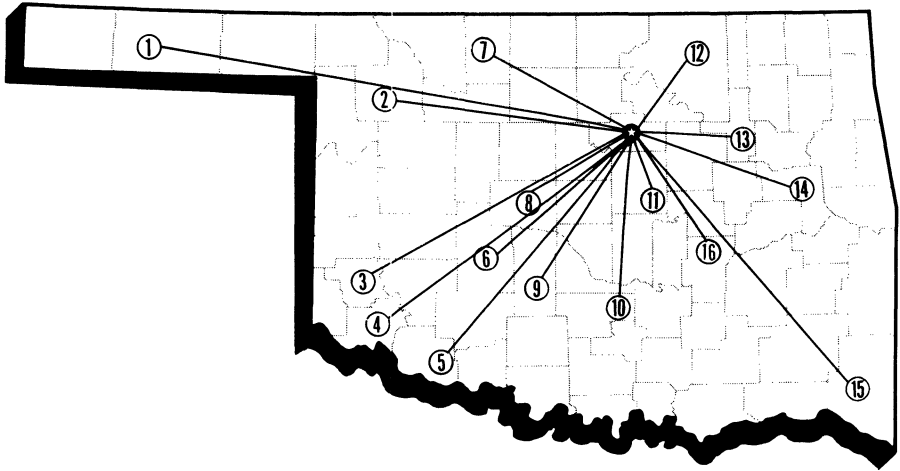
Appendix Table 5. Jobs Created by Manufacturing Plant Expansions in Oklahoma 1963-1975 Classified by Industry and Sub-State Planning District

SIC Code	Industry Group	NECO	EODD	KEDDO	SODA	COEDD	INCOG	NODA	ACOG	ASCOG	SWODA	OEDA	Total	% of Total
20	Food and Kindred Prod.	88	68	185	24	20	178	1	498	99	3	15	1,179	2.7
21	Tobacco Manufacturers	0	0	0	0	0	0	0	0	0	0	0	0	0.0
22	Textile Mill Products	340	0	200	0	0	140	80	102	525	0	0	1,387	3.1
23	Apparel	197	40	748	1,010	1,352	365	0	1,191	489	471	100	5,963	13.4
24	Lumber & Wood Prod. except Furniture	106	0	384	98	60	44	50	45	273	0	0	1,060	2.4
25	Furniture & Fixtures	0	50	50	225	0	50	0	70	6	0	50	501	1.1
26	Paper & Allied Prod.	0	0	30	0	11	67	0	26	0	0	0	134	0.3
27	Printing, Publishing	20	0	0	0	2	27	0	147	0	7	2	205	0.5
28	Chemicals & Allied Pr.	40	0	0	0	6	113	2	49	0	50	0	260	0.6
29	Petroleum Refining & Related Industries	50	0	0	25	80	98	223	32	6	0	0	514	1.2
30	Rubber & Misc. Plastic Products	482	0	195	235	119	237	0	1,056	0	0	0	2,324	5.2
31	Leather & Leather Prod.	25	10	145	0	0	0	0	10	325	0	0	515	1.2
32	Stone, Clay, Glass & Concrete Products	75	50	3	145	50	458	0	136	28	4	0	949	2.1
33	Primary Metal Ind.	242	135	0	0	3	535	4	204	0	0	0	1,123	2.5
34	Fabricated Metal Prod. except Machinery	143	83	471	50	0	2,896	0	698	80	10	0	4,431	10.0
35	Machinery, except Elec. & Trans.	264	241	123	163	44	2,202	630	2,215	117	6	223	6,228	14.0
36	Electrical & Elec. Mach. & Equip.	718	266	308	1,166	75	876	6	1,751	285	0	0	5,451	12.3
37	Transportation Equip.	85	25	70	401	320	7,722	251	2,491	95	8	7	11,475	25.8
38	Instruments & Related Products	0	2	100	90	0	125	0	105	15	0	0	437	1.0
39	Misc. Manu. Ind.	0	86	0	89	0	125	0	4	0	0	0	304	3.6
	Total	2,875	1,056	3,012	3,121	2,142	16,258	1,247	10,830	2,343	559	397	44,440	100.0
	% of Total	6.4	2.4	6.8	8.4	4.8	36.6	2.8	24.4	5.3	1.2	0.9	100.0	

OKLAHOMA

Agricultural Experiment Station

System Covers the State



Main Station — Stillwater, Perkins and Lake Carl Blackwell

1. Panhandle Research Station — Goodwell
2. Southern Great Plains Field Station — Woodward
3. Sandyland Research Station — Mangum
4. Irrigation Research Station — Altus
5. Southwest Agronomy Research Station — Tipton
6. Caddo Research Station — Ft. Cobb
7. North Central Research Station — Lahoma
8. Southwestern Livestock and Forage Research Station — El Reno
9. South Central Research Station — Chickasha
10. Agronomy Research Station — Stratford
11. Pecan Research Station — Sparks
12. Veterinary Research Station — Pawhuska
13. Vegetable Research Station — Bixby
14. Eastern Research Station — Haskell
15. Kiamichi Field Station — Idabel
16. Sarkeys Research and Demonstration Project — Lamar