A GEOGRAPHIC-ECONOMIC BASE STUDY OF SALINA, KANSAS

by

ELDOR C. QUANDT, JR.

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Approved by:

/Herbert L. Pan Jr.

Major Professor

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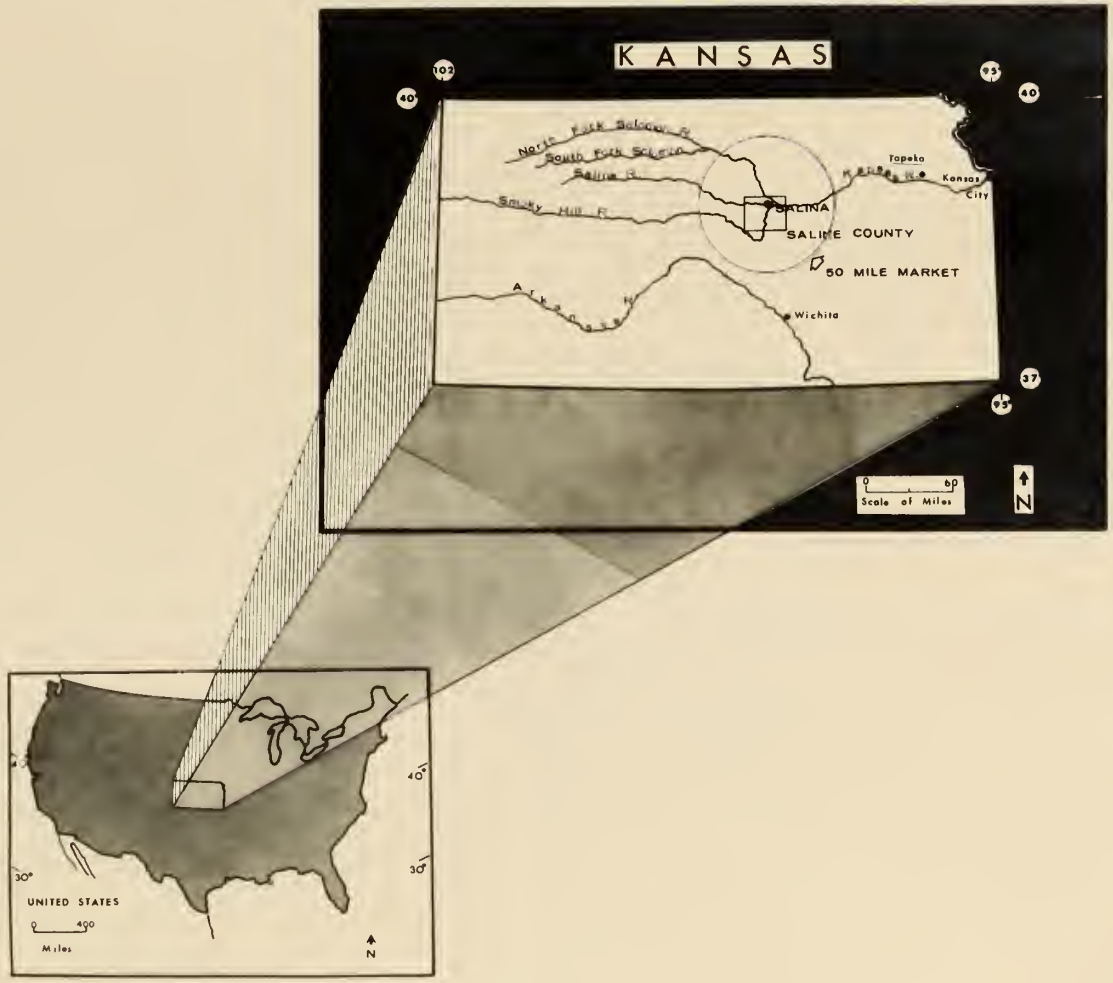
PLATE I

SALINA AND SALINE COUNTY



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INTRODUCTION

Salina, a prosperous agricultural and service city, is situated on the eastern margin of the Great Plains Winter Wheat Belt of North America and on the western margin of the Flint Hills beef cattle range land region. Until the early 1940's, the commodities from these two agricultural regions provided a raw material base around which commercial, manufacturing, and service activities developed in the city (Plate I).

Salina was founded as an agricultural service center in 1856, and the economic life of the community focused on the evolution of agricultural and livestock industries in these two adjacent regions. The prosperity of the city reflected the business cycles of these basic enonomic activities.

The city grew at the confluence of the Saline and Smoky Hill Rivers, along the route of the old Sante Fe Trail, where its elevated position situated on a river terrace protected it from the dangers of occasional, seasonal flooding.

Following the natural avenue of the Kansas River valley from Kansas City, the Union Pacific Railroad reached through Salina, up the valley of the Smoky Hill River, and westward across the Great Plains to the Rocky Mountains. In the decades that followed, the Rock Island, Sante Fe, and Missouri Pacific Railroads reached out in other directions (Plate II).

In the second and third decades of the twentieth Century, major transcontinental highways were completed from Kansas City through Salina westward to the Rocky Mountains, and an important

north-south highway was constructed from the northern plain states south to Texas.

During this period of time, the site of the city experienced limited expansion but remained well circumscribed on the terrace. Moderate population increases were evidenced during each of the decennial censuses to 1940.

With the development of the defense program and the beginning of hostilities in World War II in 1941, Salina was selected for a military installation of some size. This resulted in the construction of the Smoky Hill Air Force Base.

Over twenty years later this "temporary" military facility is still in operation, though its function and purpose have been completely transformed. The establishment of the Base brought a large population increase and caused the city to spread from the terrace to the surrounding flood plain and hillsides. The growth of new commercial activity, paralleled by the introduction and elaboration of a whole range of service activities, occurred in Salina in response to this "temporary" military facility.

Although some of this growth, as well as that of manufacturing , can be attributed to the natural increase of permanent local market and to a general increase of farm prosperity, most of it must be attributed to the present military facility. Changing military strategy, however, may be making or have already made the base obsolete.

To what extent has the economy of the city become dependent on this one economic-military enterprise?

ANALYSIS OF THE ECONOMIC FUNCTION OF SALINA, KANSAS

Statement of the Problem

Preconceived characteristics of this city were known, and were evaluated to anticipate the geographic and economic characteristics that affect Salina's prospects. In the course of the study, all of the principal urban manufacturing activities were analyzed by the investigator from data compiled through personal interviews, field survey, and mapping in the city and area of Salina. At the outset of the study, several objectives were considered to be of particular importance in the application of this method of economic analysis to a city of well-defined characteristics. The most important are the following: (a) to describe the function of Salina for the benefit of a community concerned with the present problem of employment, (b) to further the application of this method of analytical study in a region thus far foreign to its application, (c) to satisfy the investigator's personal curiosity about the characteristics of the city, (d) to incorporate into the basic employment concept methods used previously in an analytical study to describe and analyze some of the cause and effect relationships in the economic base of Salina.

The description of the growth and economic stability of Salina, within its geographic resource base and environment, are incorporated within the first and third purposes. Several of the contemporary questions which will be attacked include:

"Is Schilling Air Force Base the primary unit sustaining Salina in its present growth rate?" "Does Salina require more, or more diversified, manufacturing?" "Do industries presently situated in the urban area supply complimentary activities to others located in the state?" "How much of Salina's operating economy is supplied directly, or derived from, monies entering Kansas from other states, particularly from Federal resources?" "Is location the most important initiating resource stimulating the overall growth of the city?" "What will be the future character of economic growth, or stability, of the city if certain trends or policies already in operation continue?" These are questions that were encountered during the field research. The answers to these questions vital to the city at the present time, and of some geographic importance, are of prime interest to the citizens and leaders of the Salina community, and to those interested in the evolution of the community. Through the use of the economic base method of urban analysis, an attempt will be made to evaluate and reply to these and other questions.[1]

The aim of the second and fourth objectives is to provide more data and quantified information for those interested in the application of the economic methodology that has as its purpose

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[1]The economic base method used in this particular study analyzes basic (non-local) and non-basic (local) employment. This study is similar to the one done by: John Alexander, "An Economic Base Study of Madison, Wisconsin", Bureau of Business Research, University of Wisconsin, 1953.

to arrive at conclusions of value to supplement previous studies that have utilized this method elsewhere, as well as to assist those who at the present would want to apply this technique. The conventional pattern of economic analysis has utilized employment figures within certain manufactural activities and compared these figures to the total employment of a city. Although these figures have been adequate for a generalized report, this method does not analyze thoroughly the characteristics of a community with respect to the origin and growth of many of the functions. "The analysis of the economic base of a community requires both a cross section description, and the identification and evaluation of the forces of change."[2] To analyze sufficiently the total employment structure, it has been separated into two groups: (1) a group supporting a nonlocal market; a market which brings money into the city to support service units, is termed the city's basic support; (2) the service group, or group supporting local market requirements is the nonbasic unit. The "secondary or service functions are those activities which are mainly supported by workers in the primary industries."[3] After classification into basic and nonbasic units, all units of the urban economy are then designated according to the specific category into which they best fit (e.g., basic government, basic trade, basic manufacturing).

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[2]Richard U. Ratcliff, Urban Land Economics, p. 42.

[3]Ibid., p. 43.

Organization of the Study

The remainder of Part I is concerned with the general background of the basic-nonbasic concept and its main proponents. At the end of this section, a classification for Salina resulting from the research is presented. In addition, most of the characteristics of the Salina economy are described.

Part II deals with the socio-economic base of Salina; and Parts III and IV describe the land use and the method of the concept and systems of classification, respectively. Parts V, VI, VII and VIII introduce, respectively, each of the major basic components: government, service, trade, and manufacturing. Part IX describes the nonbasic activities, and Part X presents the summary and conclusions. The principal conclusions will be directed to: (a) the answers to contemporary questions dealing with the Salina economy and prospects for possible development of the Salina economy, and (b) the adequacy and validity of this geographic-economic method and the complimentary methods in application.

Economic Base Studies

As early as 1921, a dualistic classification of economic base evaluation was mentioned in context. "The primary occupations are those directly concerned with the function of the town. The secondary occupations are those concerned with the maintenance of the well-being of the people engaged in those of primary

industries."[4] The primary and secondary functions are relative to the two basic forms of city income. This function-income relationship is clearly identifiable in the economy of the city of Salina. One type of income is compensation from employment. This includes both salaries and wages. The second type of income is property income. This includes profits and rentals. The employment associated with the second type of income is almost wholly dependent on sources of income from outside the community; whereas, the first type of employment is primarily dependent on in-city income. Salina has some characteristics of the first type, which should not be excluded in the overall analysis. However, most of its characteristics are associated with the second type.

Although Aurousseau first expressed the dualistic concept, the first urban analysis to identify a city's dualism was completed by Frederick L. Olmstead in 1927.[5] In subsequent years, the concept received some attention in disciplines where scholars were either refining ideas or adding new concepts.

The conventional method of investigating communities is to analyze the tabulations of actual employment. The prerequisite of a breakdown of employment into categories (manufacturing, trade, service, and govenment) was essential in an analysis

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[4] M. Aurousseau, "The Distribution of Population: A Constructive Problem", Geographical Review, Vol. XI, 1921, p. 574.

[5] Frederick L. Olmsted, "Regional Survey of New York and its Environs", New York Regional Planning Committee, 1927, pp. 42-43.

conforming to the economic base method. The primary data for this study was obtained from three sources; two of the sources are Department of Commerce publications defining population characteristics,[6,7] and the third source is the State Employment Service. In each large city in Kansas a divisional office is maintained where the most recent statistics on a labor market can be obtained. All three sources classify employment by manufactural and nonmanufactural categories.

The three sources are used frequently in the analysis of the livelihood structure of a city. No attempt is made at this point to divide this material into basic and nonbasic components. The local service component which serves the need of the residents within the limits of the community cannot be distinguished easily from the more fundamental basic component which serves a market outside the local area. It was not until the study of Richard Hartshorne, the first geographer to apply the method to a city (Minneapolis - St. Paul), was it quantitatively and descriptively stated:

> "that a part of manufacturing in every industrial city produces only for local consumption and that the most meaningful map of a manufacturing region would locate concentrations of industry producing over and above local demands."[8]

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[6]U. S. Department of Commerce, Bureau of Census, General Social and Economic Characteristics, 1960.

[7]U. S. Department of Commerce, Bureau of Census, County and City Data Book, 1962

[8]John W. Alexander, from personal conversation and correspondence with Alexander and "The Basic-Nonbasic Concept of Urban Economic Functions", Readings in Urban Geography, p. 95.

The constant problem confronting some urban analysts is to identify the basic activities. Manufacturing activities are generally considered as measures of basic activities, or those primary activities serving a nonlocal market area. In some instances certain industries will be classified as manufacturers (newspapers, beverage bottling concerns, and bakeries), but still serve in the nonbasic economy. A study made in Detroit in 1944 treated all manufacturing as basic and all other employment as nonbasic.[9]

Homer Hoyt's study in 1944 contributed significantly to the division of basic and nonbasic components.[10] Later studies of Cincinnati[11] and Chicago[12] followed a similar technique. Hoyt's contribution to the development of the technique consisted of defining the nonbasic category as "a portion of national employment in each industry corresponding to the community's proportion of the national population".[13] The excess was classified as basic.

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[9]Detroit Plan Commission, Economic Base of Detroit, 1944.

[10]Regional Plan Commission of New York, The Economic Status of the New York Metropolitan Region, 1944.

[11]City Planning Commission of Cincinnati, Ohio, Economy of the Area, 1946.

[12]City Planning Commission of Chicago, Industrial and Commercial Background for Planning Chicago, 1942.

[13]John Alexander, "An Economic Base Study of Madison, Wisconsin", p. 10, Bureau of Business Research, University of Wisconsin, 1953.

Studies made in 1949 of Albuquerque, New Mexico[14] and Brocton, Massachusetts[15] represent an advanced methodological step based on the use of a questionnaire survey of representative firms in each employment category. Alexander's "Madison"[16] and "Oshkosh"[17] studies were made by a complete census of all recognizable firms.

In the analysis of Salina, all major industries were investigated thoroughly, and a random sampling of industries by employment provided data for the smaller industries. As indicated in Table 1, all studies referred to previously obtained different results.

Table 1. Basic-nonbasic ratios of various cities.

City	Year	Population	Basic-Nonbasic Ratio
New York	1944	12,500,000	100:215
Detroit	1944	2,900,000	100:170
Cincinnati	1946	907,000	100:170
Brocton	1949	119,000	100:82
Albuquerque	1949	116,000	100:103
Madison	1953	110,000	100:82
Oshkosh	1951	42,000	100:60

Source: Library research compilation of all studies.

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[14] Federal Reserve Bank, Kansas City, Missouri and Bureau of Business Research, Univ. of New Mexico, The Economy of Albuquerque, New Mexico, 1949.

[15] Homer Hoyt Associates, The Economic Base of the Brocton, Massachusetts Area, 1949.

[16] Alexander, op. cit.

[17] Bureau of Business Research, Oshkosh, Wisconsin, An Economic Base Study, 1951.

Although different techniques were applied by investigators who completed these studies, the conclusions will vary most because of differences in objectives and initial hypotheses. The great range among the ratios can be attributed primarily to the geographic-economic areas chosen, (metropolitan, wholesale, retail trade) and their national locations. Although the studies thus far have yielded primarily to speculation, (mainly because of the small number of studies applied) an understanding and appreciation of the geographic knowledge is of merit and worthy of consideration.

THE SOCIO-ECONOMIC BASE OF SALINA

Population Analysis

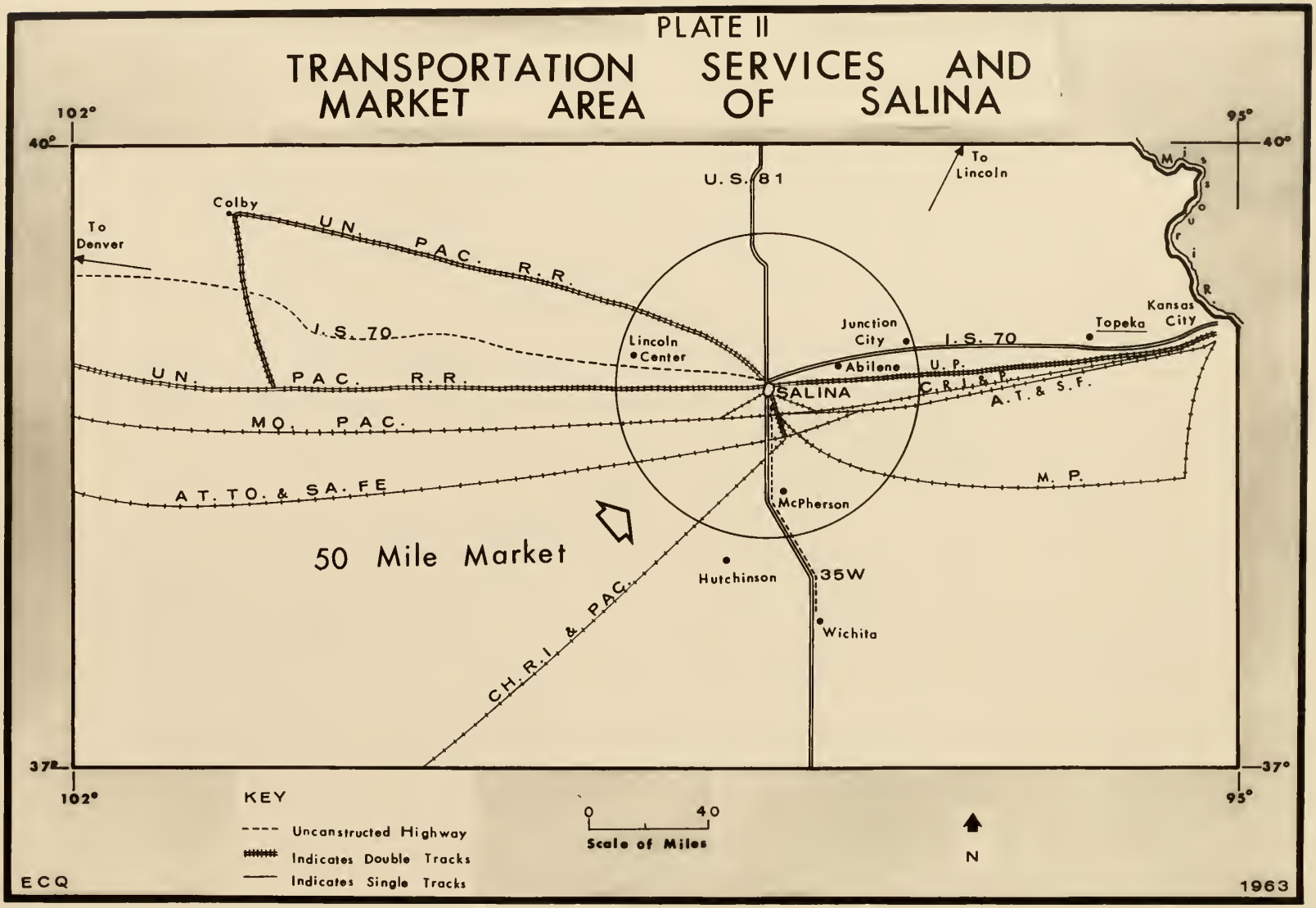
Salina, the fourth largest city in Kansas, is situated in the east-central part of the state. It is the largest urbanized area located within a region bounded by Denver, Colorado, 445 miles to the west, Wichita, the largest city in Kansas, 85 miles to the south, Topeka, the third largest city after Kansas City, 100 miles to the east, and Lincoln, Nebraska, 125 miles to the north. Salina is located centrally to the states' dispersed rural populated area, and is the most heavily populated area before the sparsely populated 250 mile western breadth of the state. The western 250 miles of Kansas has many small urban places that function as retail centers. There is no urban place of comparable importance between Salina and Denver. The Salina area is the last cluster of urban settlement to the western boundary of

EXPLANATION OF PLATE II

Transportation services within a 50 mile trade radius of Salina, Kansas.

PLATE II

TRANSPORTATION SERVICES AND MARKET AREA OF SALINA



the state, 250 miles away, and Denver, which is located 160 miles west of the Kansas-Colorado line.

This study analyzes the Saline county area, placing special emphasis on Salina, which accounts for 87 percent of the county population. The population of Schilling Air Force Base, 5,500 men, accounts for another 12 percent of the county population and is not incorporated into the city population. Of the 16 Kansas cities listed, Salina shows the greatest percentage increase in 1960 over the 1950 census of population (Table 2.) Population data for Saline County is presented in Table 2.[18]

Age-Sex and Racial Characteristics

Federal census reports will be used for a detailed and accurate analysis of the age-sex and racial characteristics. For purposes of analysis, census data for the Air Force Base will be incorporated into those of the City of Salina.

Table 3 presents age distribution figures for both Salina and Saline County in 1950 and 1960, as reported in the 1960 census. Although the table affords a means of comparing the 1950 and 1960 census, separate reports will be introduced for purposes of historical comparison.

Two significant observations can be drawn from Table 4. First, nearly 40 percent of the total population is in the

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[18] Population data material compiled up to this point has been supplied by the Salina Chamber of Commerce, a student's class report in Urban Geography, and statistical material in census reports. The following section also uses the three sources.

Table 2. Population of the 16 largest cities in Kansas.

City	1960 Population	1950 Population	Percentage Increase
Wichita	254,698	168,279	51.4
Kansas City	121,901	129,553	-5.9
Topeka	119,484	78,791	51.6
Salina	43,202	26,176	65.0
Hutchinson	37,574	33,575	11.9
Lawrence	32,858	23,351	40.7
Prairie Village	25,356	-	-
Manhattan	22,993	19,056	20.7
Leavenworth	22,052	20,579	7.2
Overland Park	21,110	-	-
Junction City	18,700	13,462	38.9
Pittsburg	18,678	19,341	-3.4
Emporia	18,190	15,669	16.1
Coffeyville	17,382	17,113	1.6
Great Bend	16,670	12,665	31.6
Newton	14,877	11,590	28.4

Source: Bureau of Census, County and City Data Book, 1962

Table 3. Population of incorporated places in Saline County.

City	1961 Population	1960 Population
New Cambria	200	198
Gypsum	518	579
Salina	40,804	39,235
Assaria	323	311
Brookville	263	233
Total City Population	42,108	40,574
Total County Population	47,856	46,459
Percent of Population in Cities	87.9	87.3

Source: Division of Engineering and Industrial Services, Salina, Survey Facts - 1962, p. 2.

Table 4. Age characteristics of Salina and Saline County.

	Salina			Saline County		
Age group	1960 Number	Percent	1950 Number	1960 Number	Percent	1950 Number
Under 5	6,686	15.5	2,740	8,009	14.6	3,515
5-9	4,275	9.9	2,088	5,460	10.0	2,785
10-14	3,234	7.5	1,718	4,267	7.8	2,290
15-19	2,293	6.8	1,903	3,944	7.2	2,403
20-24	4,218	9.8	2,158	5,794	10.5	2,562
25-29	3,868	8.9	2,174	4,565	8.4	2,627
30-34	2,866	6.6	1,955	3,569	6.5	2,434
35-39	2,722	6.3	1,875	3,621	6.6	2,335
40-44	2,235	5.2	1,768	2,943	5.4	2,221
45-49	1,966	4.5	1,560	2,447	4.5	2,031
50-54	1,818	4.2	1,396	2,239	4.1	1,818
55-59	1,639	3.8	1,263	2,005	3.7	1,663
60-64	1,357	3.1	1,145	1,651	3.0	1,527
65-69	1,194	2.8	874	1,475	2.7	1,179
70-74	963	2.2	686	1,193	2.2	893
75-Over	1,238	2.9	873	1,533	2.8	1,126
Total	43,202		26,176	54,715		33,409

Source: Department of Commerce, County and City Data Book, 1962, Bureau of Census, General Social and Economic Conditions, 1960.

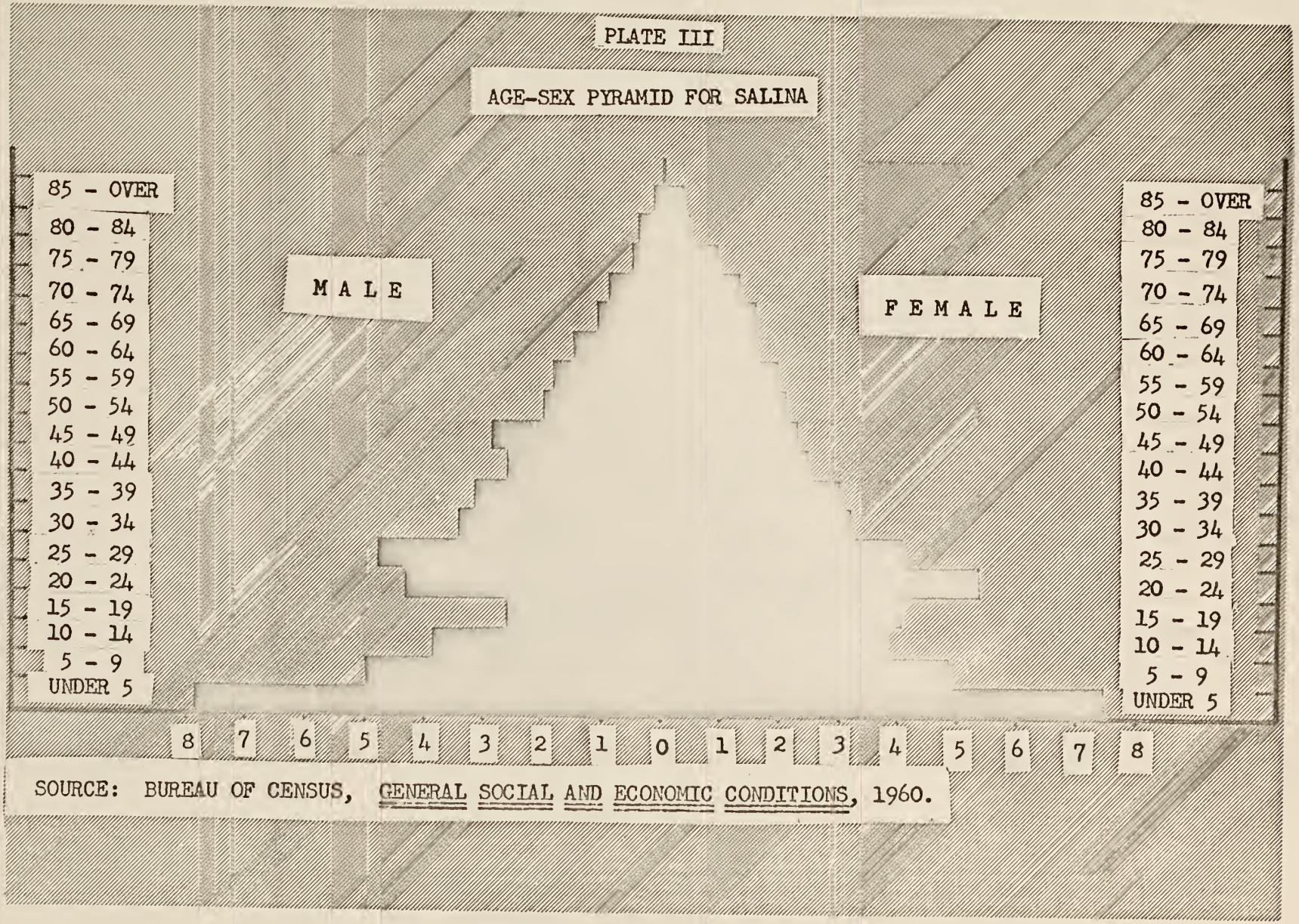
school age group of 0-19 years. Secondly, nearly 50 percent is in the working age group of 20-59 years. Both of these age groups are necessary to maintain growth within a city. The age-sex pyramid (Plate III) shows an excess beyond the average for Kansas population in both the 20-29 age group and the 0-9 age group. The pyramid also shows more women than men in every age

EXPLANATION OF PLATE III

The age-sex pyramid of population of Salina, Kansas.

PLATE III

AGE-SEX PYRAMID FOR SALINA



SOURCE: BUREAU OF CENSUS, GENERAL SOCIAL AND ECONOMIC CONDITIONS, 1960.

group over age 45. The excess of 1,438 females in the total population is normal when compared to the national average of excess of females.

The city population is 96 percent white and 99 percent American born (Table 5). Even with a growing population, many of whom are in-migrants, this distribution has remained constant over the past three decades. The city grew from 21,074 to 26,176 people in the decade 1940-1950, an increase of 25 percent. In the decade 1950-1960 the population of the city increased from 26,176 to 43,202, or 17,026, a 65 percent increase. This percentage increase of 65 percent in the 1950 decade was the largest percentage increment in population since the 1880-1890 decade.

Table 5. General population characteristics of Salina.

	Salina	Saline County	Kansas
Total Population	43,202	54,715	2,178,611
Male	20,807	27,576	1,081,377
Female	22,395	27,139	1,097,234
White	41,593	52,732	2,078,666
Negro	1,407	1,742	91,445
Other races	202	241	8,500
Percent of Total Population			
White	96.2	96.4	95.4
Negro	3.3	3.2	4.2
Other races	.5	.4	.4

Source: Bureau of Census, General Social and Economic Conditions, 1960.

The male to female ratio in Salina has remained relatively constant over the two decades from 1940 to 1960. In 1940, the male-female ratio was 1:1.10, and in 1950 it was 1:1.09 -- indicating no significant change. By 1960 however, the ratio had decreased to 1:1.07. The excess of females was centered principally in the 15-24 age group in both decades. The female excess in the 15-29 age group has remained nearly constant over the two decades. This indicates that Salina is serving the male population of its rural hinterland as a marriage port for females. Wives of military personnel also comprise a notable portion of the group. The presence of Mackie Business School and Marymount Senior College for Women have bolstered significantly the size of this group. The major factor for the 1950-1960 growth can be attributed principally to Schilling Air Force Base. Missile defense construction and a Strategic Air Force Command have been established since the early 1950's.

Migration has undoubtedly been the single outstanding factor in the growth of Salina. The age group of 0-14 years totalled 4,804 in 1940, and the 10-24 year old group totaled 5,779 in 1950. This is a net increase of 975 or about 20 percent, while the city as a whole increased 24 percent. Age group 30-34 totaled 10,952 in 1960. This is a net increase of 5,714 or about 90 percent, while the entire city increased 65 percent.

After analyzing the 0-14 age groups and succeeding groups at ten year intervals up to 1960, it is noted that a general

trend appears. The in-migration of people during the decade 1940-1950 was a positive factor through all the age groups up to the 25-29 age group category. In the next older age groups, death and out-migration were greater than any in-migration. In contrast, the in-migration during the decade 1950-1960 was a positive factor through the 45-49 age group. Net migration from 1950 to 1960 has been equal to the "natural increase" calculated according to the 1950 and 1960 populations. The principal factor causing the in-migration has been the reactivation of Schilling Air Force Base.

In 1960 the total working population (age group 20-59) comprised 50 percent of the total population. This is five percent less than the comparable age group of the nation in 1960. The working population of Salina is dominated by men in the 20-29 year age group. The age group from 30-59 age group in 1960 comprised 40 percent of the total population.

The percentage of people in the working years (20-59 years) conformed closely to the national average of the 1950 census. This age group held 54 percent of the population in comparison to 56.9 percent for the nation. The retirement age, 60 and over, accounted for 11 percent of the population in 1950 for the city of Salina. The national average for 1950 was 12.4 percent. Except for a slight increase in the national average, the above figures were similar in 1960. All age groups in the retirement age category have an excess of females.

Further population analysis underscores the impact of

Schilling Air Force Base on the changing pattern of the city's population. Most of Salina's growth during the past 10 years has been concentrated in the 0-9 and 20-29 age groups. The outstanding position of these groups will continue probably as long as the military installation remains at its present level of operation and manpower.

Although a substantial proportion of the 1950-1960 decade population growth and economic wealth of Salina have been generated by a military installation, they have created problems in planning to meet a range of social and service needs. Although the military population is located away from the city, and is not geographically or politically incorporated within Salina, the city is still responsible for providing certain activities for two important segments of this population group. Salina must provide the excess of young children and young adults with school and recreational needs. Although the adult military personnel needs are met by Salina, little or no tax is generated to support additional burdens of social, service, and educational activities of the city.

Although Schilling Air Force Base does not contribute directly to the tax base of Salina, it is, nevertheless, an indirect supporter of many activities. Its impact may be evaluated by a multiplier effect of employment. If it is assumed that the 5,500 men (the present number of personnel at Schilling Air Force Base) each have families that average three, then an estimated 16,500 people avail themselves of the retail and

other commercial service activities.[19] This is 39 percent of the total population of Salina. All service activities that are essential to and benefit the total population of the city would also be affected. Approximately 5,025 of the 12,900 people in service activities would be affected as a result of any decrease of the 16,500 people. At the present time, if the base were to be deactivated, 21,531 people could be lost potentially from Salina's total population, which would decrease revenue in these functions by almost 50 percent. In any case, the additional income that comes to the city from the Schilling personnel is greater than the expenditure of the public funds to provide service activities to these population groups.

DESCRIPTION AND ANALYSIS OF THE URBAN LAND USE

Description of Land Use

The geographic analysis of a city is incomplete without a thorough classification of the pattern land use. "A land use inventory and its analysis are essential in the preparation and administration of a comprehensive city plan."[20] Field investigation was made by thorough inspection of the land utilization.

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[19]It is obvious that not all the personnel are married. However, by assuming a smaller family size (3 as opposed to 4.5 for the U. S.), this hypothetical example helps compensate for any great margin of error. Analysis is based on interview.

[20]Harland Bartholomew, "The Land Use Survey", Readings in Urban Geography, 1959, p. 268.

During the field investigation, a more detailed base map was made. Because of the detail on the field map, the land use map presented in this study is divided into three segments and the generalized pattern is depicted (Plates IV, V, VI).[21]

The general conception of urban land occupance is that the larger the population in a service center, the greater the probable land area occupied. The "study of all urbanized areas reveals that the least population does not correlate with the least land."[22] An example of the relationship between population size and urban land area is Tyler, Texas, with 51,739 people on 18.6 square miles of land, and Champaign-Urbana, Illinois where 78,000 people occupy 12.4 square miles. All of the "nation's urbanized areas have 95,848,000 people on 25,544 square miles of land, or a ratio of 3,752 people per square mile."[23] In 1960, Salina had 43,202 people occupying 8.7 square miles of land. It had a population density of 4,977 per square mile, or 25 percent above the average for the United States. Plate VII indicates how Salina compares to other selected cities.

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[21]A more detailed explanation of the symbol classification is located in Appendix A. The detailed base map is at the disposal of the reader by request to the author.

[22]John W. Alexander, Economic Geography, 1963, p. 547.

[23]Ibid., p. 548.

Table 6. Data key for Plate 7.

City	Inhabitants per Square Mile
Arlington, Texas	1,866
Longview, Texas	2,064
Middletown, Ohio	2,945
Lakeland, Florida	3,475
Anchorage, Alaska	3,539
Moline, Illinois	4,642
Salina, Kansas	5,269
Lafayette, Indiana	6,512
Biloxi, Mississippi	7,342
Daly City, California	10,665

Source: Data for figure and table were compiled from: U. S. Department of Commerce, County and City Data Book, 1962.

Salina Land Use Analysis

The heaviest population density in Salina is located in the northern segment of the city near the railroad tracks, and along the western margin near Schilling Air Force Base (Plate VIII). Manufacturing activities are also concentrated in the northern area where there is an east-west transit of the city by four railroads (Plate IX, Fig. 1). Small metal manufacturers, grain storage elevators and grain milling units (Plate IX, Fig. 2, Plate X, Fig. 1) account for at least 75 percent of the manufacturing firms located in the northern area (Plate IV).

The Central Business District (Plate V) lies astride the east and west sides of Sante Fe Avenue (the former Sante Fe

Trail) Plate X, Fig. 2). It extends into a residential area in the south where it terminates (Plates VI, XI). A newer outlying business district is concentrated along Broadway Avenue (Highway 81 By-Pass) (Plate XI, Fig. 2).

The commercial-professional area of the city is located on East Iron Street extending to Marymount College (Plate XII, Fig. 2). Immediately to the east of Marymount College, an upper class suburbia has developed (Plate XIII).

DESCRIPTION AND EVALUATION OF TRADE AND EMPLOYMENT

The Employment Analysis

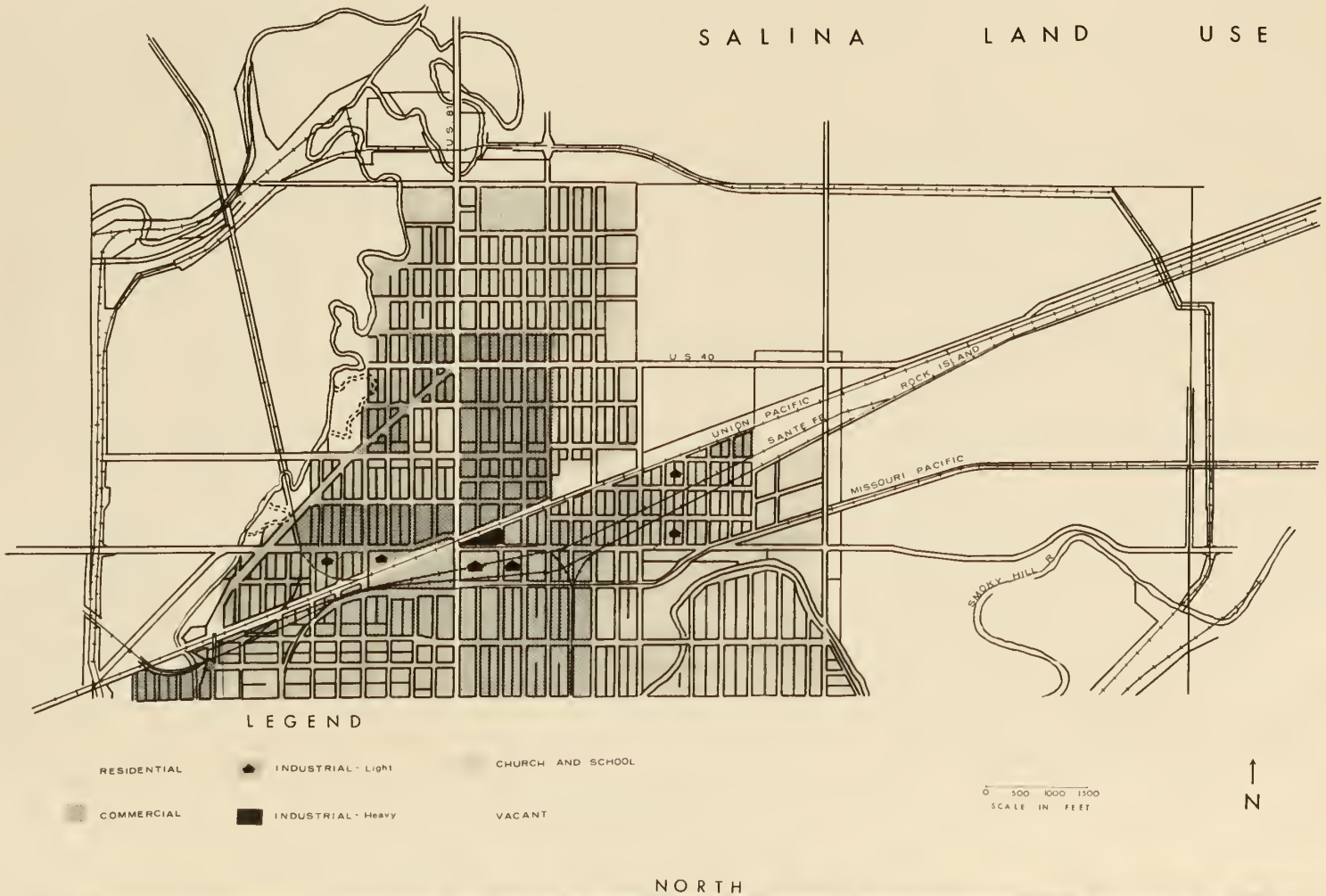
An investigation by interview of individual firms was the method used to determine the basic and nonbasic employment ratio of Salina. After employment figures were refined and altered to conform to the requirements of the study, a personal interview technique was used to obtain additional information.

Of the 112 classified manufacturers and processors, who account for 1,650 of the total manufacturing employment of all industries, thirty were interviewed personally. These thirty industries employ 1,291 people, or 80 percent of the total manufacturing employment. The average number of personnel employed by each industry interviewed was 43; while the remaining companies averaged four employees. The largest company that was interviewed was International Milling with 65 personnel; the smallest was Salina Venetian Blind with one employee.

EXPLANATION OF PLATE IV

Land use of the northern one-third of Salina, Kansas.

PLATE IV

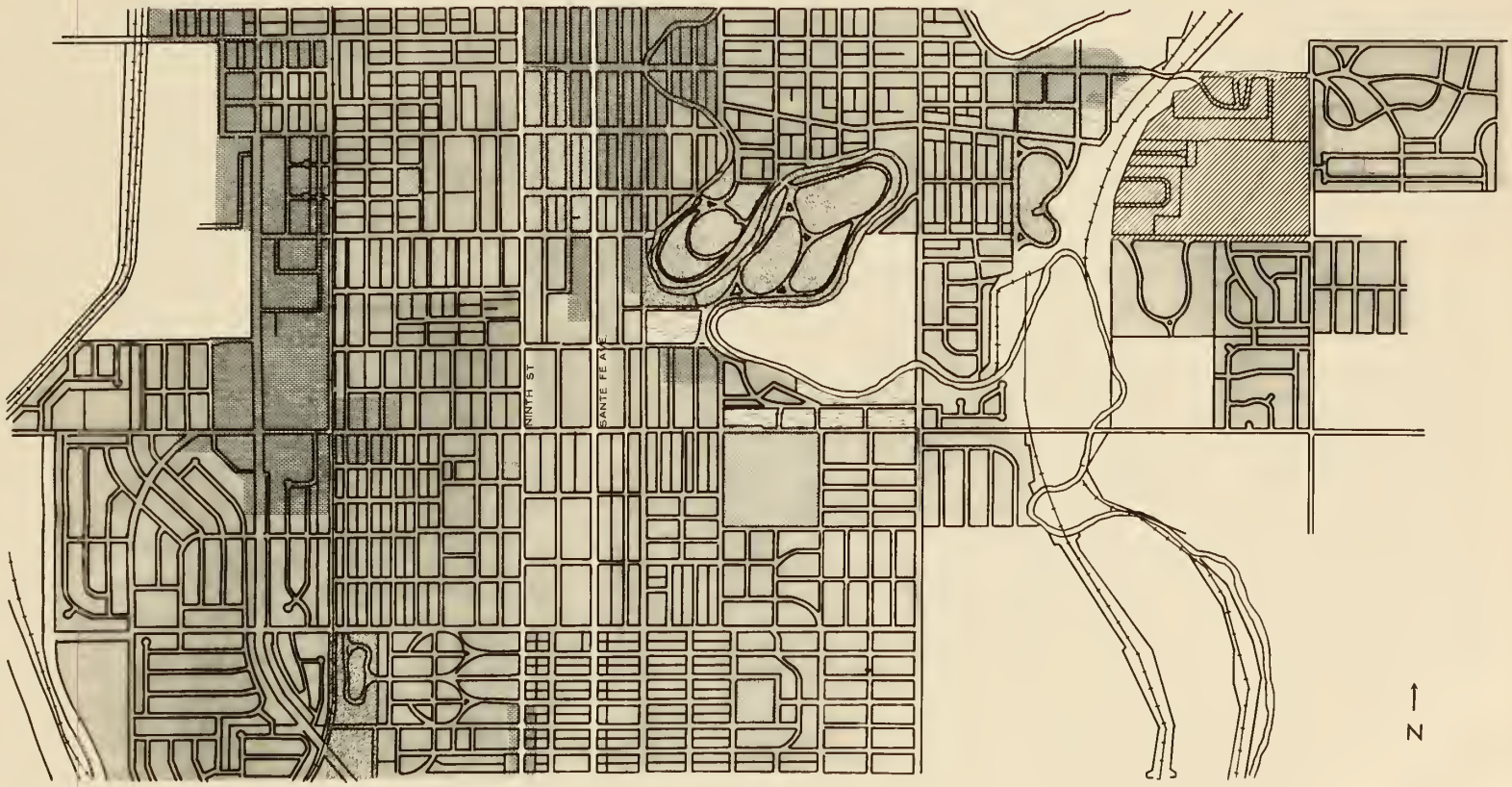

SALINA LAND USE
U S 81
U S 40
ROCK ISLAND
UNION PACIFIC
SANTE FE
MISSOURI PACIFIC
SMOKY HILL R
LEGEND
RESIDENTIAL
COMMERCIAL
INDUSTRIAL - Light
INDUSTRIAL - Heavy
CHURCH AND SCHOOL
VACANT
0 500 1000 1500
SCALE IN FEET
N
NORTH
march 1 1963

EXPLANATION OF PLATE V

Land use of the central one-third of Salina, Kansas.

PLATE V

SALINA LAND USE



CENTRAL

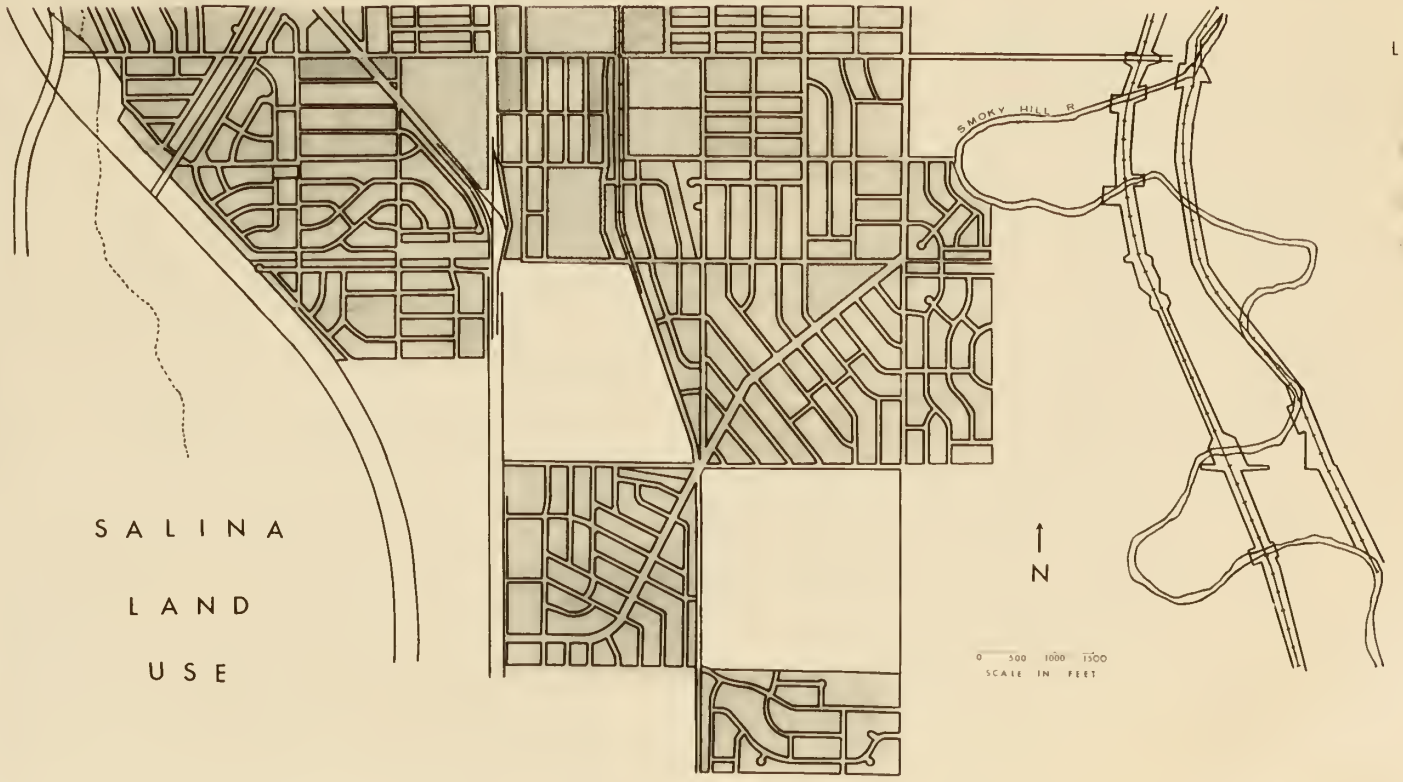
march 1, 1943

e. c. guandt

EXPLANATION OF PLATE VI

Land use of the southern one-third of Salina, Kansas.

PLATE VI



SALINA

LAND

USE

SOUTH

march 1, 1963

EXPLANATION OF PLATE VII

A scatter diagram comparing ten selected cities according to total population and area in square miles.

Source: U. S. Department of Commerce, County and City Data Book, 1962.

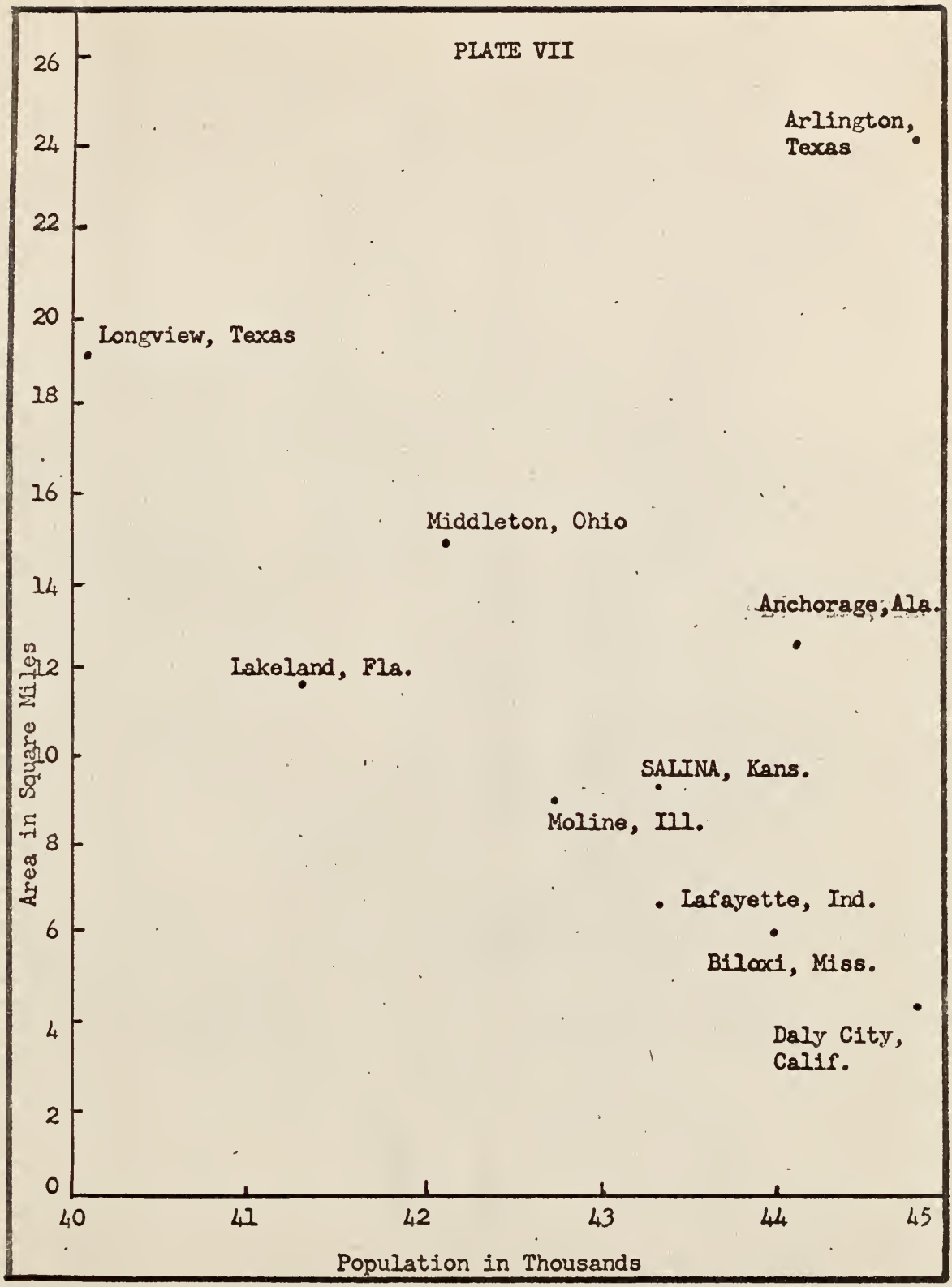


PLATE VII
Arlington, Texas
Longview, Texas
Middleton, Ohio
Anchorage, Ala.
Lakeland, Fla.
SALINA, Kans.
Moline, Ill.
Lafayette, Ind.
Biloxi, Miss.
Daly City, Calif.
Area in Square Miles
0
2
4
6
8
10
12
14
16
18
20
22
24
26
40
41
42
43
44
45
Population in Thousands

EXPLANATION OF PLATE VIII

Fig. 1. Grain elevators and grain milling units form the background profile for the densely settled central and northern neighborhoods of Salina, Kansas.

Fig. 2. A residential area bordering Schilling Air Force Base.

PLATE VIII

Figure 1.

Figure 2.

EXPLANATION OF PLATE IX

Fig. 1. Switchyards along Fourth Street in Salina, Kansas.

Fig. 2. Small metal and machine manufacturer in north Salina, Kansas.

PLATE IX

Figure 1.

Figure 2.

EXPLANATION OF PLATE X

Fig. 1. The two largest grain elevators in Salina, Kansas are bordered on the north and south sides by rail facilities.

Fig. 2. Sante Fe Avenue forms the heart of the Central Business District.

PLATE X

Figure 1.

Figure 2.

EXPLANATION OF PLATE XI

Fig. 1. New, middle class, single story homes dominate the area south of Santa Fe Avenue.

Fig. 2. An outlying business district in Salina borders the city along its western limits on Highway 81 By-pass.

PLATE XI

Figure 1.

Figure 2.

EXPLANATION OF PLATE XII

Fig. 1. The Salina Trade Union is the largest single employer of office personnel.

Fig. 2. Marymount Senior College is a nationally known Catholic institution for women.

PLATE XII

Figure 1.

Figure 2.

EXPLANATION OF PLATE XIII

Fig. 1. A well kept suburban home on Country Club Road.

Fig. 2. South of Country Club Road on Roach Street, the newer suburbia accounts for micro-residential areas.

PLATE XIII

Figure 1.

Figure 2.

In addition to information on employment and company history, each respondent was asked: (1) the radius of his market area, (2) total sales in dollars, (3) sales within a specified market area, (4) to comment on the future prospects of his company, and (5) to comment on his estimate of the future of Salina. In this method, code letters were used to classify each concern, as shown in Plate XIV. After classifying an industry, the basic and nonbasic components were tabulated to determine Salina's total employment characteristics.

Method of Trade Analysis

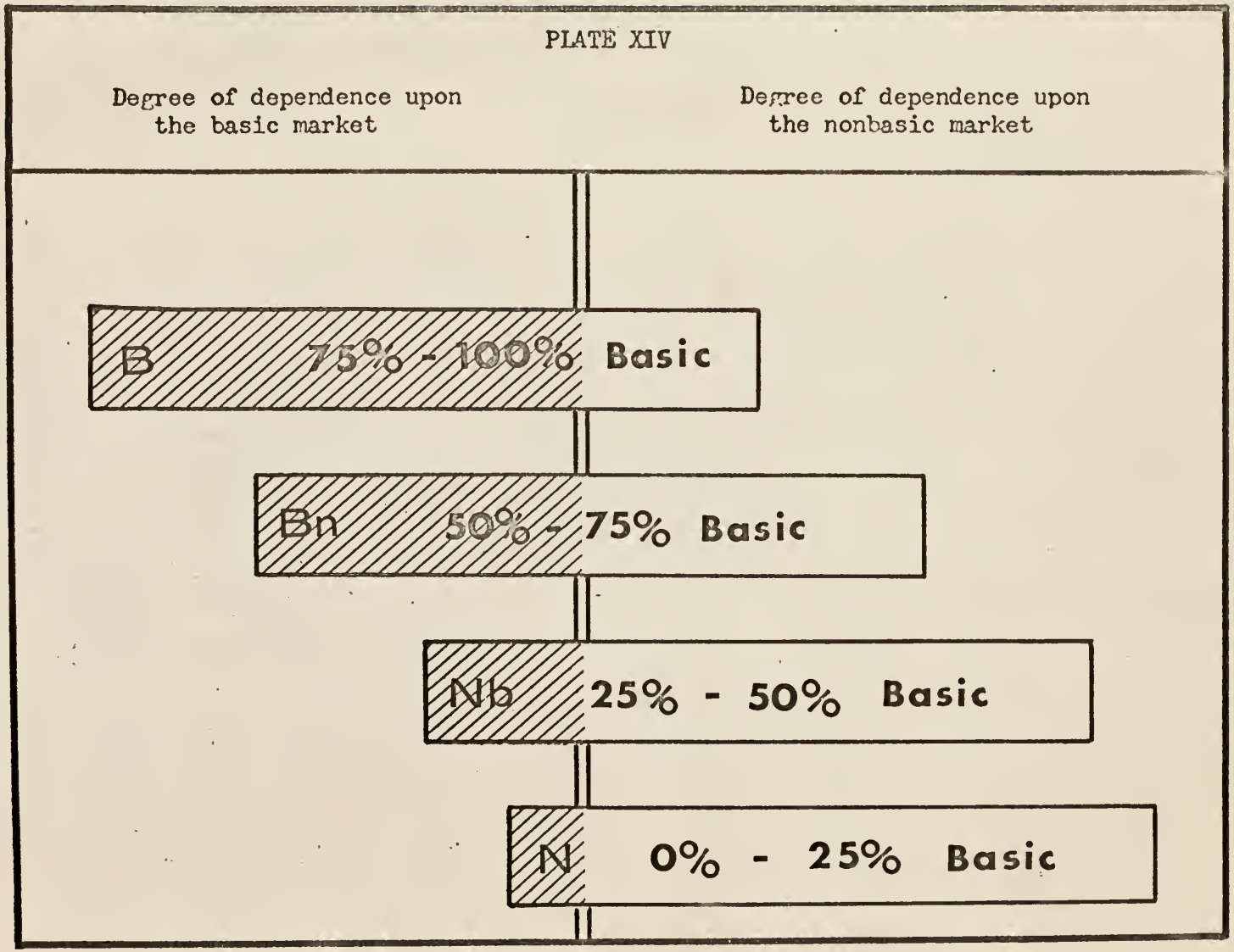
Manufacturers and processors responses to the interview schedule were of vital importance because this would distinguish between the basic and nonbasic market areas for each enterprise. The method that was used to distinguish the difference was whether the product, or a portion of the production, was marketed within a radius of 50 miles of the city (nonbasic activity), or beyond this radius (basic activity) (Plate II). Almost 40 percent of the products of the nonbasic activities are marketed within the city itself.

The very few number, and dispersion, of most cities of 15,000 to 25,000 population in north central Kansas hold large areas tributary to a few trade centers and reduces the likelihood that these trade areas will overlap into those of surrounding market cities. Information showing the degree of competition from outlying cities was gathered through the interviews.

EXPLANATION OF PLATE XIV

Code letters were used to classify basic and nonbasic activities.

PLATE XIV



Note: Basic is nonlocal

Source: Mayer and Kohn,"The Basic-Nonbasic Concept of Urban Economic Functions," Urban Geography, 1960, p. 95.

This information will justify further the selection of the 50 mile radius as the outer boundary of the local trade area (Plate II).

This investigation will utilize Alexander's method of classification of industries (Table 7) that utilizes data collected by personal interview, and further apply the broad classification of Hoyt's in an analysis of other categories (government, trade, service). In several cases, manufacturing and processing activities are classified that have not been interviewed. However, detailed census data supports the classification (Table 8). A more current report of Salina's non-agricultural manufacturing is given in Table 9.

Table 7. Classification of 30 interviewed industries in Salina.

Industry	Classification Symbol*
(Over 100 employees)	
Kansas Power and Light	BNsm-1
Holsum Bakeries	NBm-2
International Millihg	Bm-3
(50 - 100 employees)	
Jo-mar Dairies	Nm-4
Western Star Mill	Bm-5
Weber Flour Mill	Bm-6
Consolidated Print	NBm-7
Wyatt Manufacturing Company (Metals)	Bm-8
Salina Manufacturing	Nm-9
Swift and Company	Bm-10
Salina Journal	BNm-11
Gage Plumbing and Heating	Nsm-12

Table 7. (concl.)

Industry	Classification Symbol*
(25 - 50 employees)	
Beverley's Independent Packing	Bm-13
Henry Industries Incorporated	Bm-14
Coca Cola Bottling Company	Nm-15
Salina Concrete	NBm-16
Pepsi-Cola Bottling Company	NBm-17
Robinson Milling Company	Bo-18
(10 - 25 employees)	
Globe Sheet Metal	Bm-19
Grain Belt Supply	Nm-20
Beverley Wholesale	No-21
Central Kansas Electric	NBms-22
Applequist - Lagerberg Company (Metals)	Bm-23
Larson Lumber Company	Nms-24
(1 - 10 employees)	
Hale Potato Chip Company	Nm-25
Hazelwood Paperbox Company	Bm-26
Salina Venetian Blind Company	Nm-27
T. A. Kelly Incorporated (Seed processor)	BNsm-28
Western Ice Company	NBm-29
Globe-Sun County Paper	Nm-30

Source: Field interviews.

*Classification Symbol Key:

B: 75 to 100% of sales are non-local.
BN: 50 to 75% of sales are non-local.
NB: 25 to 50% of sales are non-local.
N: 0 to 25% of sales are non-local.

A more detailed classification was applied through use of the following categories:

g: government
m: manufacturing
s: service
t: trade
o: other

Table 8. Employment data for Salina, Kansas.

Category	Number Employed	Employment Classification
Agriculture	145	
Forestry and Fisheries	-	
Mining	24	
Construction	1,316	No-1
Manufacturing	1,480	BN-2
Furniture, Lumber and Wood	24	
Primary metal industries	4	
Fabricated metal industries	69	
Machinery, except electrical	159	
Electrical equipment, machinery	42	
Motor vehicles	-	
Transportation equipment	16	
Other durable goods	105	
Food and kindred products	706	
Textile mill products	-	
Apparel and other fabricates	5	
Printing, publishing	301	
Chemical and allied products	17	
Other nondurable goods	32	
Services		NB-3
Railroad and railway express	384	
Trucking service and warehousing	302	
Other transportation	103	
Communications	219	
Utilities and Sanitary service	207	
Finance, insurance, and real estate	647	
Business services	164	
Repair services	269	
Private households	637	
Other personal services	655	
Entertainment and recreation	115	
Hospitals	500	
Educational - Government	633	
- Private	410	
Other professional	567	
Trade		NB-4
Wholesale trade	829	
Food and dairy product stores	450	
Eating and drinking places	686	
Other retail trade	2,359	
Government		N-5
Public Administration	791	

Source: United States Population Census - Kansas, General Social and Economic Characteristics, 1960, p. 18-215.

Table 9. Estimated number of employees in non-agricultural establishments in the Salina, Kansas area.

Industry	1963 January	1962 November	1962 January
All industries	14,550(a)	15,125	14,425
Manufacturing	1,650	1,725	1,950
Food and Kindred	875	950	850
Other manufacturing	775	775	1,100
Non-manufacturing	12,900	13,400	12,475
Construction	1,600	1,900	1,600
Transportation, Utilities-Services	1,350	1,375	1,350
Wholesale-Retail trade	4,175	4,350	4,125
Finance, Insurance	625	625	600
Services	3,000	3,050	2,650
Government-Schools	2,100	2,050	2,100
Other manufacturing	50	50	50

(a) Excludes Schilling Air Force Base.

Source: Salina Office of the Kansas State Employment Service, The Salina Labor Market Review, February, 1963.

Table 10. A comparison of Salina to other service centers.

Employment	U. S.	Salina	Topeka	Wichita	Hibbing, Minn.	Durant, Okla.	Hollywood, Fla.	New York N. Y.
Population (as a percentage)	40.0	33.3	37.3	38.5	40.7	32.0	38.0	41.5
Percentage in all activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	1.0	.1	.6	.6	.2	2.4	2.7	.3
Forestry and Fish	.1	-	-	-	-	-	-	-
Mining	.9	-	.1	1.1	34.8	.5	-	-
Manufacturing	29.4	10.3	11.4	31.2	4.0	8.0	5.4	30.8
Transportation	6.0	5.5	9.6	3.5	5.4	4.3	2.3	5.9
Wholesale trade	4.3	5.8	3.5	4.4	2.8	5.7	3.0	5.3
Retail trade	17.6	24.3	16.0	16.2	17.1	28.4	21.8	16.0
Finance, Insurance	4.4	4.5	5.6	5.2	1.8	3.4	7.1	6.9
Private Households	3.2	4.4	2.6	2.3	2.0	3.0	3.8	2.8
Hotels, Lodging	1.1	.7	1.1	.8	1.5	1.1	13.7	1.0
Entertainment	1.2	.8	.6	.7	.9	1.4	3.2	1.3
Medical	3.5	3.3	7.2	3.4	3.5	3.0	2.5	3.3
Education	3.8	7.3	4.8	5.4	5.9	8.9	3.3	2.7
Public Administration	5.2	5.5	9.7	4.5	5.0	5.5	4.2	4.4
Other Services	16.7	-	-	-	-	-	-	-

Source: Analysis of Salina was computed from Bureau of Census, Census of Population. Other cities were taken from a table on page 542 of Economic Geography, John Alexander, 1963.

Employment Analysis Comparison

The proportion of people employed in the different occupation categories differs greatly from city to city (Table 10). Salina ranks far below the national average in numbers of people employed in manufacturing activities. It has about the same percentage in manufacturing as the state capitol Topeka; but, it is far below Wichita, a competitor to the south.

Retail trade is the most universally important economic activity, ranking first in the employment structure of most cities.[24] If it is not first, it invariably ranks second. Salina ranks seven percent above the national average in retail employment and is surpassed only by Durant, Oklahoma, which resembles Salina closely in all employment categories. Hibbing, Minnesota, and Hollywood, Florida, in contrast, indicate an unusual dominance of one employment category. Selected cities with a single dominant employment category are Conneaut, Ohio (40 percent transportation), and Kanapolis, North Carolina (70 percent wholesaling). "Altogether, the industries which produce goods dropped from 43 percent of total employment in 1950 to 39 percent in 1959."[25] This is a sizable change within the span of a decade. During this same period, industries which generate service employment, including transportation, public utilities, trade, finance, government, and other services, rose from

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[24]Alexander, op. cit., p. 543.

[25]Federal Reserve Bank of Chicago, Business Conditions, July, 1960, p. 16.

44 to 49 percent of the total. The national pattern was similar to the employment trend in Salina during this period. Nationally, except for transportation, employment in all service groups increased more rapidly than did total employment. This reflects both the shift in consumer spending to services, and the slower rate of mechanization of services as compared with goods. It is quite probable that the trend to increased service employment will continue to rise throughout the 1960's.

Employment Characertistics

The characteristics of Salina's total employment divided into basic and nonbasic components, is shown in Table 11. The table indicates that 11,150, or 55 percent of Salina's 20,300 total employment force is basic; the corresponding ratio of nonbasic employment is 0.86; indicating that each basic job supports about nine-tenths (1:0.86 ratio) of a nonbasic job.[26]

Table 11.

	Total		Basic		Nonbasic	
	Number	Percent	Number	Percent	Number	Percent
Services	6,600	32	2,900	14	3,700	18
Government (a)	6,300	31	5,500	27	800	4
Manufacturing	1,600	8	900	5	700	3
Trade	4,200	21	1,700	8	2,500	13
All other	1,600	8	150	1	1,450	7
Total	20,300	100	11,150	55	9,150	45

(a) Includes Schilling Air Force Base.

[26] This ratio should be compared to the ratios given previously on page 10. The comparison of information over a number of years is necessary for an accurate analysis.

A further analysis of employment data is presented in Table 11 and Plate XV. The table, and graph depict the percentage composition of each of the five categories for the total employment of Salina, and the composition of the five categories of the basic employment. The table, and figure indicate indicate that government activities (principally Schilling Air Force Base) and service activities are about equally important.[27]

Table 12. The percentage distribution of total employment and basic employment.

	Total employment 20,300	Basic employment 11,150
	Percent of respedtive totals	
Services	32	26
Government	31	49
Manufacturing	8	8
Trade	21	16
All other	8	1

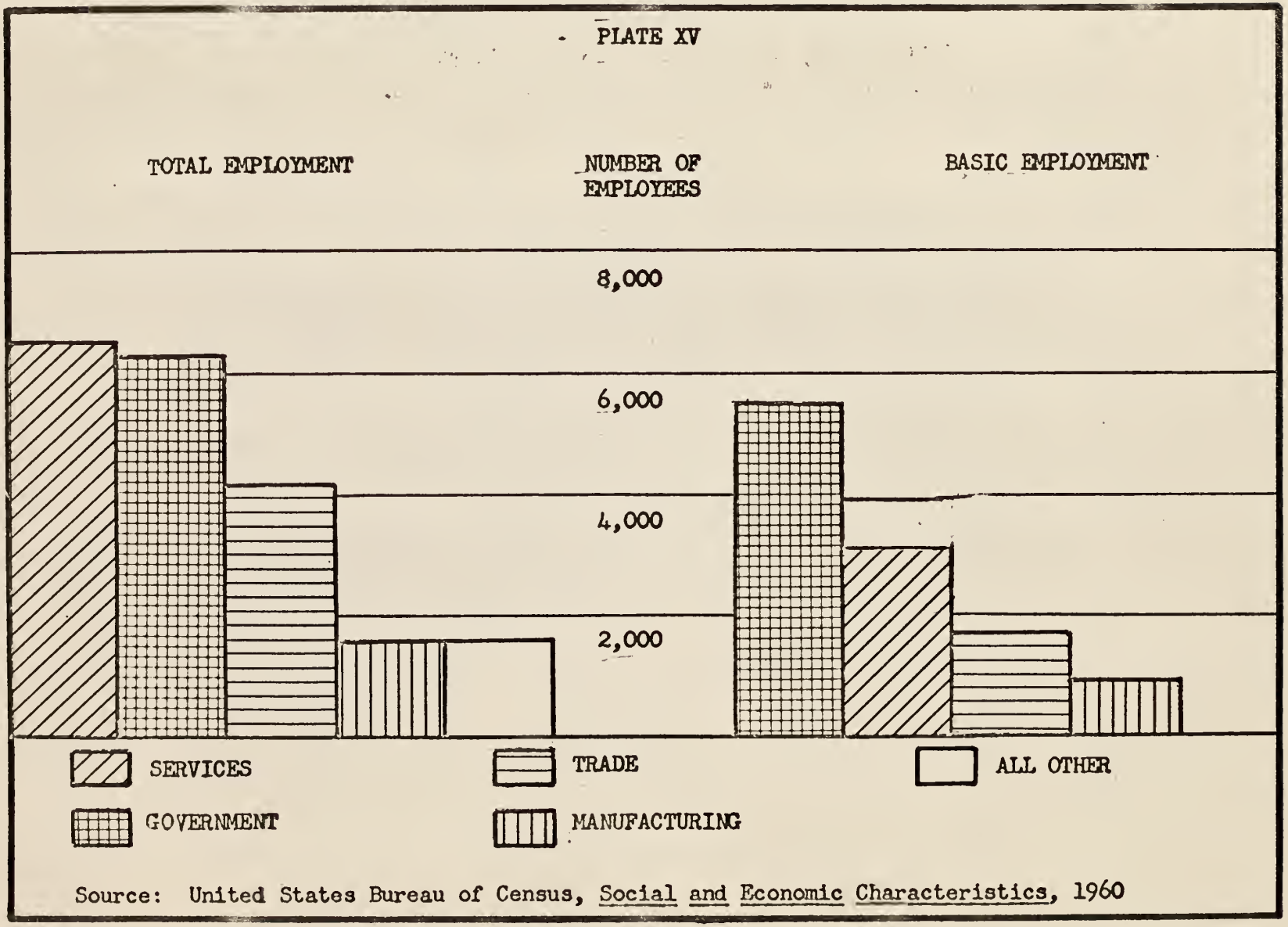
These two activity categories account for almost 65 percent of the total employment. If all trade activities were to be included, the three categories would account for 84 percent of the total labor force. Manufacturing activities account for a mere 8 percent of the city's total employment. The large percentage in the "all other" is accounted for nearly completely

[27]This is almost identical to Alexander's study of Madison. In Madison, 54 percent of the employment was in service and government.

EXPLANATION OF PLATE XV

A five category analysis of total and basic employment in Salina, Kansas.

PLATE XV



Source: United States Bureau of Census, Social and Economic Characteristics, 1960

by the total construction employment. Perhaps this indicates why, in a majority of the interviews, comments by members of the Chamber of Commerce, employment services, and government officials reflect the belief that: "Salina definitely needs more industry."

A comparison of Table 12 and Plate XV presents an analysis that is entirely different from the traditional methods of applying economic livelihood structures. This approach presented data on basic employment. The characteristics of basic employment for Salina, provides the basis for analyzing employment.

In 1963, almost 50 percent of Salina's basic employment is government activity. In general, this substantiates the earlier population analysis in Part II. In the basic employment structure, basic employees comprise 26 percent of the service activities and 16 percent of the trade activities. Only 8 percent of the basic employment is derived from manufacturing activities. These are the components directly affecting the city's economy, and are regulator's of the city's trends.

BASIC GOVERNMENT

As indicated in the preceding description, governmental agencies provide Salina with more basic jobs than any other group. The approximately 5,500 men at Schilling Air Force Base are included in the figures for government employment (Table 13).

Table 13. Salina's basic employment.

Category	Number	Percent
Government (a)	5,500	27
Services	2,900	14
Trade	1,700	8
Manufacturing	900	5
Others	150	1

(a) Included in the figure for government employment are the approximately 5,500 men at Schilling Air Force Base.

Source: Computed field data and calculated census figures of 1960.

Federal Basic Employment

Schilling Air Force Base accounts for approximately 98 percent of the federal employment. Besides the 5,500 men at the base, 1,350 civilian employees (primarily wives of the military personnel) work in the city of Salina. These 6,850 personnel provide an addition of an estimated $15,000,000 to the Salina economy. Because of the continual fluctuation of personnel, and the unavailability of income figures for the federal military base to the investigator, the amount of revenue added to the city's economy could not be determined. In the case of Schilling, unlike other bases, more technical personnel are needed for the operation of a missile installation. This indicates that the personnel are skilled and, generally, receive more income than regular base personnel.

As a question of methodology, whether or not to include a large military base in the study poses a problem. Alexander

was confronted with a similar question in his study of Madison, Wisconsin. In nearly all other economic analyses of cities, an immediately associated military installation is included. However, the following question still remains: Should all personnel be included as employees? This study will include them in a manner similar to Alexander's. Base personnel will be classified as full-time employees for two reasons: (a) military personnel receive salaries for full-time activity; and (b) governmental officials and several large service industries indicated that approximately 95 percent of all income of the people living off base is spent in Salina, whereas for those living on the base spend approximately 90 percent of their income in the city.

Characteristics of Schilling Air Force Base and City-Military Growth

Schilling Air Force Base is located immediately south of Salina and houses the "Sunday punch" of the Strategic Air Command. The Schilling complex includes twelve Atlas ICBM sites located within a 50 mile radius of Salina. Reactivation of the base took place in 1949, as did a relatively large increase in the population of Salina. Salina reflected a 65 percent increase during the decade from 1950 to 1960. There has been a steady build up of personnel since 1952. However, since September 18, 1962 a phase-out-deactivation period began with the 40th Air Refueling Squadron. When the squadron was at its peak, there were more than 300 men and 20 KC-97 aircraft assigned. "The steady assignment of the 40th personnel to other units has

hardly been reflected in overall strength of the base, which can fluctuate as much as 300 men a month."[28] Some of the men have been assigned to other bases, but many have stayed at Schilling bolstering the 310th ARS and support units. Although the 40th supply a large number of men to the overall personnel complex, it has been important over the last ten years in assisting re-establishing the former Schilling (Smoky Hill) Air Force Base to full strength and strategic importance.

As stated previously, in the population analysis (Part II), Schilling is the single most important factor controlling population increase or decrease of Salina. A hopeful indication at present, is the construction of two new airstrips now in progress. If this is an assuring indicator for stability in population, at least in the immediate future, Salina should enjoy continued temporary prosperity.

BASIC SERVICE ACTIVITIES

People employed in basic govenment activities and basic service activities constitute 75 percent of Salina's total basic employment (Table 12). Trade activities account for 26 percent of the total basic employment, manufacturing activities 8 percent and all other activities are one percent of the total.

Among the basic service activities, small businesses are the most important source of employment. The category of

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[28] A2C Bruce A. Weidner, "40th ARS Passes Into History; Outstanding Record Lives On", Impact, March, 1963.

transportation service, which includes railroad, railway express and trucking activities, has the greatest number of people engaged in service employment. The second most important category is composed of the educational services (Table 14), whose employees are included in both governmental and private activities. Together, transportation and education activities account for 50 percent of the total employment in basic service activities for Salina (Table 15). Commercial activities are the single most important category of basic services that are generating revenue for the city.

Transportation

Rail and highway routes focus on Salina from four directions (Plate 11). The city is located at the intersection of two important highways -- U. S. 40 and U. S. 81. The Meridian Highway (U. S. 81) connects Winnipeg, Canada with Mexico City, Mexico. U. S. 40 is a major transcontinental highway connecting the east and the west coasts. Interstate 70 has been completed recently, and is located along the northern limits of the city. Located south of the city, construction is now underway on a second by-pass, Interstate 35 W. With these favorable facilities, motor freight transit and delivery have become more important. The grain companies, which export and import much of their grain via truck, are the greatest users of trucking services. The two larger companies, Western Star Mill (Bm-5) and International Milling (Bm-3), own and operate their own

Table 14. Basic employment in service categories.

Category	Number of Employees
Railway and Railway Express	384
Trucking Service and Warehousing	322
Communications	219
Utilities and Sanitary Service	100
Finance, Insurance, Real Estate	310
Repair Services	100
Entertainment and Recreation Services	65
Hospitals	300
Educational Services	700
Professional and Related Services	220
Lodging	80
Total	2,800

Source: Computed from United States Department of Census, General Social and Economic Conditions, 1960, p. 18-215.

Table 15. Basic employment of five most important service groups.

Employment Category	Number	Percent
Transportation	706	25
Educational Services	700	25
Finance, Insurance, Real Estate	310	11
Hospitals	300	11
Communications	219	8
Total	2,235	100

Source: Computed from Table 14.

trucks. The freight companies supplying two important trucking services are the Grave Truck Rental Service and the Ryder Truck Rental Service.

The railroads and railway express companies are other important basic activities. However, they only contribute 384 personnel to the total basic employment force. Four major railroads serve the Salina area and they are oriented in nine directions. Each of the lines--the Union Pacific, Sante Fe, Rock Island, and Missouri Pacific--is important to both manufacturing and processing activities of Salina. The greatest concentration of rail facilities--the switchyards, freight yards, and warehouses--is localized within the manufacturing and grain storage districts of north Salina (Plate IV). Although trucking for distances of approximately 150 miles is important to the operators of elevators, the destination of the majority of all grain shipped is outside the state of Kansas. The shipment of wheat and flour by rail accounts for at least 90 percent of the total exports of the two largest companies. The main use of the railroads to manufacturers is to bring in the larger sheet metals (Table 16). Most exporting by manufacturers is by truck. The rail rates are compared in Table 16.

Table 16. Comparative rail shipment rates for various establishments.

Industry		Product	Rate-Rail($/lbs.)
Globe Sheet Metal	Bm-19	Sheet iron	1.91/100
Larson Lumber Co.	Nms-24	Lumber	1.22/100
Western Star Mill	Bm-5	Grain	.40/100
Consolidated Print	NBm-7	Newsprint	1.15/100
Henry Industries	Bm-14	Sheet metal	.79/100
Applequist	Bm-23	Sheet metal	.98/100

Source: Computed Field Data.

Educational Service Activities

Four educational institutions (in addition to the public school system of Salina) contribute additional employment and revenue to Salina. St. John's Military Academy, a primary and secondary school with approximately 200 students, is included among the schools (Plate XVI, Fig. 1). Brown-Mackie Business School, with an enrollment of about 50 students, is located in the Central Business District. Kansas Wesleyan University, has achieved its greatest enrollment since shortly after World War II in the Spring Semester of 1963, when enrollment barely passed the 500 mark. (Plate XVI, Fig. 2.) About 90 percent of the students come from within a 75 mile radius of Salina. However, Marymount College for Women, a smaller institution of 400 students provides more basic employment than does Kansas Wesleyan University. Over 50 percent of the student body at Marymount originates outside of the state and over 75 percent come from beyond a 75 mile radius of Salina. Marymount College contributes the most revenue to the overall economic base of Salina.

Secondary Service Activities

Finance, insurance, and real estate activities as well as institutional activities contribute approximately one quarter of the total employment in basic service activities. Four and one-half percent of Salina's total employment force is in finance or insurance. This is almost the same as the national average. The stability of employment in financial and insurance

EXPLANATION OF PLATE XVI

Fig. 1. St. John's Military Academy is a private primary and secondary school for boys.

Fig. 2. Kansas Wesleyan University is a co-educational Methodist supported institution serving a local area.

PLATE XVI

Figure 1.

Figure 2.

activities reflects the general leveling in the city's economy in recent years. The assessed evaluation of the city real estate was $56,038,735. The four major banks have total demand and time deposits of $53,747,942. The two major building and loan associations have total assets of $18,415,453. The bonded percentage indebtedness of the city is somewhat higher than either Topeka or Wichita, Kansas. However, this can be accounted for by the recent population explosion and the consequent rapid upward trend in building over the past decade. The value of building permits totaled $6,176,520 from July, 1961 through July, 1962. The present relationship between business employment and business conditions indicates that probably there will be no immediate increase or decrease in the employment-economic base of the city.

There are two sectarian hospitals in Salina with about 300 basic personnel. The largest of these is St. John's Hospital (Catholic) with 130 beds, which is constructing a twelve-bed addition. Asbury Hospital (Methodist), with 120 beds, is constructing a sixty-bed addition (Plate XVII, Fig. 1).

Of the five principal service groups analyzed in this study, commercial activities accounted for the smallest percentage of basic service employment. About 220 people are employed by the three principal communications media: newspaper, radio station, and telephone. The two newspapers, one a daily and the other a weekly have a combined basic employment of 92, with a circulation of 33,805 papers. The Salina Journal, the weekly newspaper, employs 85 people and has the widest circulation.

The Globe-Sun is the county newspaper; it also publishes Impact, the unofficial Schilling Air Force Base newspaper (Plate XVII, Fig. 2).

Southwestern Bell Telephone Company employs 95 people. It is the principal supplier of telephone service in Salina and Saline County. The company had 25,581 connections as of July 15, 1962.

The remaining 33 employees in basic communication activities are personnel of the three local radio stations. The three stations are KAFM, KFRM, and KSAL, servicing an area with a radius of 75 miles with local, national, and international news.

BASIC TRADE ACTIVITIES

Wholesale and retail businesses employ 1,700 persons in trade activities in Salina. These employees include 300 in wholesale trade and 1,400 in retail trade activities. The total number of employees comprised 16 percent of all basic trade. Salina is 9 percent above the national average for employment in trade activities. Retail trade employment accounts for 8 percent of the total employment for the city. Retail trade in Salina is divided almost evenly among 387 establishments. The three large food markets are the most important as basic employers. Of the 375 people employed in food store retail trade, approximately 250 are employed at the three large shopping centers. They provide the largest portion of the total $61,633,000

EXPLANATION OF PLATE XVII

Fig. 1. Asbury Hospital is the largest of two sectarian hospitals with accomodations for 180 people.

Fig. 2. The Globe-Sun is the weekly Saline County newspaper and largest professional printer of Salina.

PLATE XVII

Figure 1.

Figure 2.

derived from retail trade revenue. Kraft Manor, Elmore, and Sears shopping centers provide the bulk of the $15,753,000 supplied by food stores (Plate XVIII). Sales by automobile dealers ($13,516,000 of the total) trail food store sales closely.

Regression Line Analysis

When compared to other cities in the United States, Salina supplies nearly the same types of basic trade activities. When the quantity of trade activities is compared, the following differences appear: Table 17, statistical data for the regression line, and Plate XIX, the regression line analysis, will attempt to indicate if a correlation exists between city size and amount of employment in retail trade. Dispersion of dots on the scatter diagram will determine a general alignment of a regression line and in what direction it is oriented. An explanation will be given after the diagram.

After calculating the figures in Table 17, the totals for each column were used to derive a regression line. The method is indicated below the column heading. This hypothetical line is used as a technique for correlating the dispersed dots on Plate XIX.

The following points are essential to compute a regression line: (1) a computed table of values (which in this instance is the selected criteria for eight cities and one county,[29] (2)

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[29]The county was selected only because it resembled the population figures of the other cities.

EXPLANATION OF PLATE XVIII

Fig. 1. Sears Shopping Center is the largest and newest of the three shopping centers in Salina.

Fig. 2. Elmore Shopping Center serves the dual purpose of being a shopping center and residential refuge.

PLATE XVIII

Figure 1.

Figure 2.

Table 17. Statistical data for regression line analysis.

City	Column 1 Employment in trade (000,s)	Column 2 Square of value of Col. 1.	Column 3 Population (000,s)	Column 4 Square of value in Col. 3.	Column 5 Product of values in Columns 1 & 3
Wichita	20.4	416.16	254.7	64,871.09	5,195.88
Yonkers, New York	15.9	252.81	190.6	36,328.36	3,030.54
Kansas City	9.0	81.00	121.9	14,859.61	1,097.10
Topeka	8.7	75.69	119.5	14,280.25	1,039.65
Burbank, California	7.4	54.76	90.2	8,136.04	667.48
Green Bay, Wisconsin	5.4	29.16	62.8	3,943.84	339.12
SALINA	4.3	18.49	43.2	1,866.24	185.76
Greeley, Colorado	2.5	6.25	26.3	691.69	65.75
Sumner County Tennessee	1.0	1.00	13.9	194.21	13.90
TOTALS	74.6	935.32	923.1	145,171.33	11,635.18
Statistical symbols for items in above columns	y	x^2	y	y^2	xy
Symbols for totals	Σy	Σy^2	Σy	Σy^2	Σxy

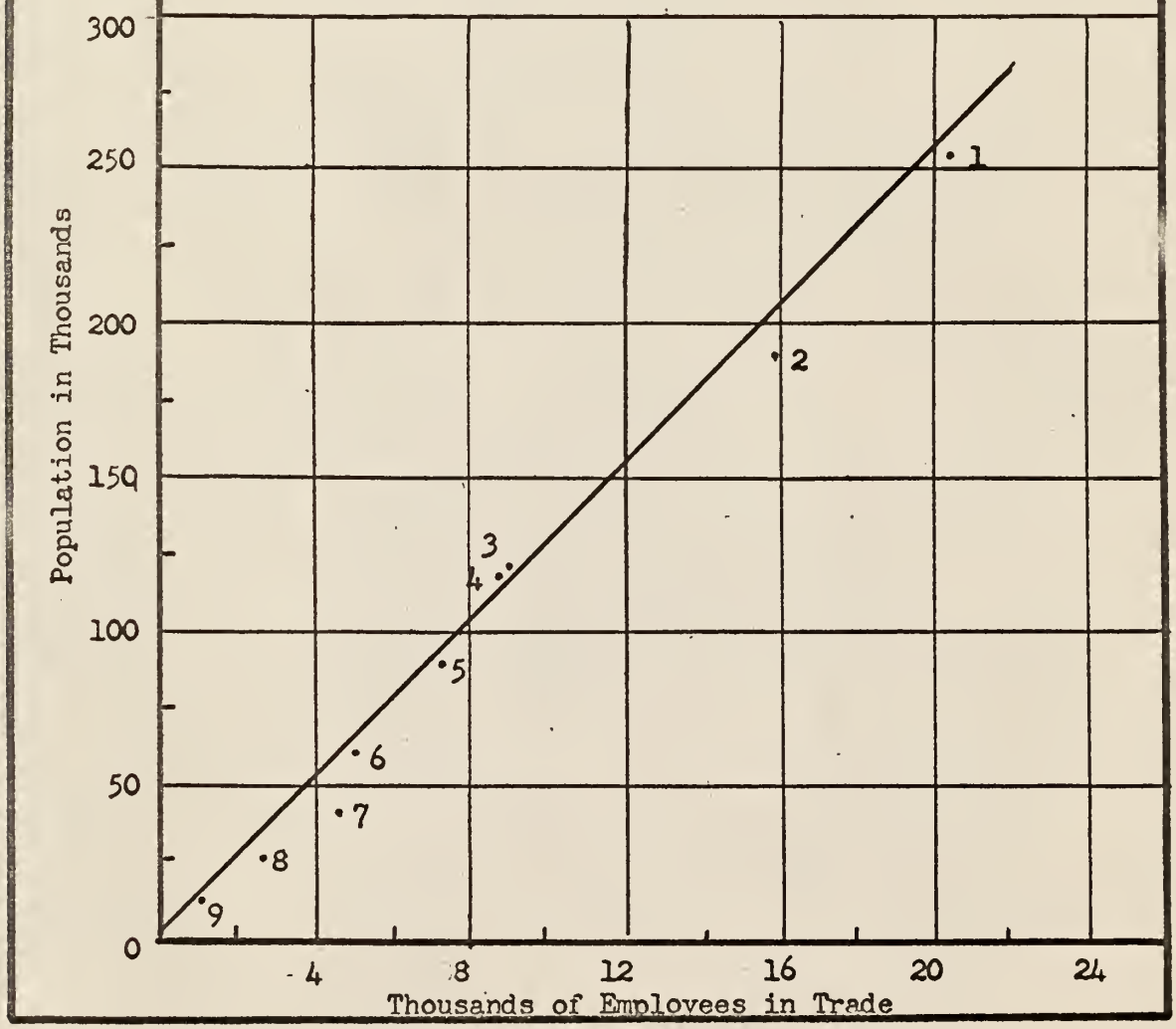
Source: United States Department of Commerce, County and City Data Book, 1962.

EXPLANATION OF PLATE XIX

A regression line analysis of eight cities and one county.

PLATE XIX

1. Wichita, Kansas
2. Yonkers, New York
3. Kansas City, Kansas
4. Topeka, Kansas
5. Burbank, California
6. Green Bay, Wisconsin
7. SALINA, Kansas
8. Greely, Colorado
9. Sumner County, Tennessee



Data From: U. S. Department of Commerce, County and City Data Book, 1962

"The a value of the point of origin of the regression line on the vertical axis, that is"[30]....the point from which the line moves from left to right across the scatter diagram, and (3) the b value, or the average change in y with a given change in x. For every one unit of measurement marked off on the horizontal axis, the regression line moves vertically the number of units indicated by the b value.

After calculating data for the table, the totals of the several columns were substituted in the following formula to compute the a value. Statistical symbols, as represented in Table 17, will be used to simplify the explanation. The designated origin of the regression line was obtained by application of the a value formula. The origin was established at 1.7 units above the vertical axis.

Origin of the regression line on the vertical axis:

Ratio for a value

$$a = \frac{(\Sigma x^2 \cdot \Sigma y) - (\Sigma x \cdot \Sigma xy)}{(N \cdot \Sigma x^2) - (\Sigma x)^2}$$

$$a = \frac{935.32 \cdot 923.1 - 74.6 \cdot 11,635.18}{9 \cdot 935.32 - (74.6)^2}$$

$$a = \frac{863,393.89 - 867,984.43}{2852.7 - 5565.16}$$

$$a = \frac{-4,590.54}{-2,712.44}$$

$$a = 1.7$$

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[30] John W. Alexander, Economic Geography, p. 603.

For each unit of measurement along the horizontal axis there is a corresponding vertical movement of the hypothetical regression line. The following formula was applied to find the horizontal-vertical movement. This formula determines the b value.

Ratio for b value

$$b = \frac{N \cdot \Sigma xy - \Sigma x \cdot \Sigma y}{N \cdot \Sigma x^2 - (\Sigma x)^2}$$

$$b = \frac{9 \cdot 11,635.18 - 74.6 \cdot 923.1}{9 \cdot 935.32 - (74.6)^2}$$

$$b = \frac{104,716.62 - 68,863.26}{8,417.88 - 5,565.16}$$

$$b = \frac{35,853.36}{2,852.72}$$

$$b = 12.6 \text{ or } 12,600$$

With the origin of the regression line at 1.7 (1,700 inhabitants) or vertical units, the line ascends 12.6 (12,600 inhabitants) for each horizontal unit of measurement. When these calculations were completed, the regression line was constructed in order to begin an analysis to determine correlation factors.

The regression line indicates that as population increases there is a tendency for employment in trade to increase. Six cities and one county--Wichita, Kansas, Yonkers, New York, Green Bay, Wisconsin, Burbank, California, Salina, Kansas, Greeley, Colorado, and Sumner County, Tennessee--all fall below the average tendency of increase. Of the eight cities and one county

analyzed, Salina deviates most from the regression line. According to the regression line, the trade employment in Salina should be able to support a population of 53,000 or 10,000 more than the present population. This potential, though theoretical, is in fact true in Salina where employment in retail trade is 8 percent greater than the national average. All of the other cities considered are closely aligned along the regression line.

A Comparison of Wholesale-Retail Trade

The national ratio of wholesale workers to retail workers "is 1 to 4.3; or to express it differently, 18.8 percent of the trade workers are employed in wholesale trade."[31] In Salina, 27 percent of the total trade employment is wholesale trade employment. Approximately 50 percent of the wholesale trade employment is basic. Based on the previously mentioned figure of 18.8 percent: (1) Those cities having more than 18.8 percent of their total trade in wholesale trade are designated as serving both the city and surrounding hinterland. The special emphasis for trading is the surrounding hinterland. (2) Those cities which have less than 18.8 percent of their total in wholesale trade are said to serve primarily the city, although Salina has higher than 18.8 percent of the total trade employment in wholesale trade, it primarily serves the city with wholesale trade.

There are 111 wholesale establishments in Salina. Approximately 80 percent of the total revenue received in wholesale

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[31]William R. Siddall, "Wholesale-Retail Trade Ratios As indices of Urban Centrality," Economic Geography, Apr.,1961,pp.126-127.

trade is generated within a 75 mile radius, and 50 percent within a 50 mile radius. The city's market is delimited in the south by Hutchinson (distance 65 miles, population 37,574), with 104 wholesale establishments and Wichita (distance 85 miles, population 254,000) with 641 establishments. To the east, Topeka (distance 100 miles, 121,000 population), with 175 wholesale establishments, is the main wholesaling supplier of goods. Salina's greatest wholesale trade area occurs to the north and northwest. However, here the sparsity and dispersed population in the wholesale area retards large quantity trading to Denver, Colorado. Although Salina has a large wholesale employment, trade and employment are allied in supplying only the immediate needs of the city.

BASIC AND NONBASIC MANUFACTURING ACTIVITIES

Although there are only 1,650 people employed in all classes of manufacturing in Salina, this employment category comprises approximately 8 percent of the city's total employment. About 5 percent of this total is basic employment. Salina ranks far below the national average for total employment in manufacturing. In order to maintain its stability, Salina definitely needs some economic activity that will generate income and employment. The most detailed research was undertaken to analyze manufacturing activities. In the course of the field research, thirty detailed interviews were conducted to obtain quantified current data for each industry, and a responsible commentary by community leaders concerning the present economic picture and future prospects of

Salina.[32]

The Big Three (A)

Approximately one-third of Salina's manufacturing employment is accounted for by three industries (Table 18).

Table 18. Industries with more than 100 employees.

Industry	Classification Symbol	Number of Employees
Kansas Power and Light	BNsm-1	106
Holsum Bakeries	NBm-2	136
International Milling	Em-3	165

Source: Field research.

Kansas Power and Light Company. (BNsm-1) Kansas Power and Light Company is the largest of the four electric and gas suppliers in Kansas. The Salina Division of Kansas Power and Light is the most important distributor of electricity and compressor of gas on the western margin of the 54 county distributing area. The Salina Division has a steady employment, and the only addition is seasonal, when three college students are added in the summer months. At present, there are no immediate plans for expanding full-time employment. Further employment growth will depend on a significant increase in the city's population.

Most of the natural gas and electricity distributed in the

[32]One of the interview schedules is presented in Appendix B.

Salina market originates in three regions. Topeka and Hutchinson are about equally divided as suppliers of electricity. Most of the gas is piped via a 12-inch line from the Hugoton gas fields situated in southwestern Kansas.

The Salina Division of Kansas Power and Light was established in 1919 because of a local market (Plate XX, Fig. 1). It is a corporate affiliate of KPL with 30,000 stockholders, of whom 28 percent reside in Kansas. There has been slow, but steady employment and sales growth within the past decade. This utility-service activity experienced the initial impact of the business fluctuations during and after World War II. Sales declined after several air squadrons were activated for the Korean Conflict. The 1957-1959 business recession caused a slight decline in sales. The Division was affected seriously by a decline in sales in the 1931-1936 depression. Following World War II, the dismantling and closing of the Smoky Hill Air Force Base caused an immediate decline in sales and a consequent 10 percent decrease in employment. Many industries experienced only minor effects during the recession of 1958-1959, but Kansas Power and Light employment and sales dropped 10 percent during this period.

Salina, headquarters of KPL for Saline County, distributes gas and electricity to six surrounding counties. It is a major distributor among the 54 county distributing region franchised to Kansas Power and Light. The industry has the closest contact with the most people and is an economic activity that is affected adversely by any economic or population change.

Holsum Bakeries (NBm-2). Although Holsum Bakeries is the second largest of the manufactural employers in Salina, it is a nonbasic industry. The baking industry holds at a steady level of employment, with its highest marked increases during the Thanksgiving and Christmas holiday periods. The brief seasonal employment increment averages 20 personnel. This particular industrial activity performs the second and third phases in manufacturing. Most of the cartons and paper wrapping for the finished products are shipped via truck freight from Appleton, Wisconsin, Wichita, Kansas, and Dallas, Texas. The primary raw material--flour--is basic (processed in the city of Salina) and is transported by truck from a local elevator.

Since its beginning in 1933, the bakery has expanded and now has 23 trucks as compared to 9 bakery delivery trucks three decades ago. Over 70 percent of its market is within a 50 mile radius. The market outside this immediate tributary area is oriented to the west primarily. Since 1952 , this industry has nearly doubled percentagewise in both employment and sales. Contrary to the downward trend of many industries during the 1931-1936 depression, Holsum Bakeries increased its sales and remained at a steady level in employment. Bread is still one of the cheapest and most filling foodstuffs available.

In the decade ahead, the present management is anticipating little change in sales and employment. The tributary area of the bakery lies to the west of Salina primarily, where there has been an out-migration of farm population labor. This

migration has been either to Salina to the east, or to Denver to the west. Under present conditions the industry should maintain its position in both sales and employment; but within the next decade it must develop a new market, as the population of its present market area beyond the 50 mile radius declines further.

International Milling (Bm-3). International Milling is the largest individual employer in manufacturing activities in Salina. Nationally, its product trademark is "Robinhood Flour" (Plate XX, Fig. 2). It is the largest single employer, with the greatest annual revenue, of the four major milling industries in Salina. The company is the principal contributor to Salina's position substantially as the second largest flour milling city in Kansas. Among centers in the United States, Salina stands in 5th place in four milling, with a daily average capacity of 20,400 one-hundred pound bags.

International Milling has added 15 new employee positions within the last 5 years, but anticipates that its personnel requirements will show little change in the next 5 years. Flour is the principal product processed from local wheat, that is in abundance in the immediate area. Situated in the northeastern quadrant of the North American winter wheat region, the grain is shipped in via rail from Kansas, Colorado, and Nebraska for storage or processing. The sizeable exports by this milling company of flour products beyond the 50 mile radius, and the income

EXPLANATION OF PLATE XX

Fig. 1. The Salina Division of Kansas Power and Light is the third largest basic employer in Salina.

Fig. 2. International Milling (Robinhood Flour Company) is the largest employer in Salina.

PLATE XX

Figure 1.

Figure 2.

that these sales return make it the most vital of the basic industries. More than 98 percent of International Milling's products are exported by rail, grain cars, barge flat bottoms, or truck to the east coast, and practically all of this is in turn exported to Europe and Asia.

International Milling is the oldest operating flour mill and wheat elevator in Salina. A small mill was established in 1892, since a milling activity was needed in the Salina vicinity. It is now incorporated, and is one of the largest subsidiaries of the Robinhood Flour Company of Minneapolis, Minnesota. This company has nearly doubled in both sales and employment within the last decade. Since the Federal government supports wheat prices and allots acreage, this industry anticipates little change in wheat production within the next decade. There is keen competition among millers in Salina, and International Milling appears to be the most stable producer among the four largest milling companies. The principal elements contributing to its stability are: (1) its ready access to raw material within its immediate hinterland, (2) the transportation facilities--both railway and highway--with good access to market areas, and (3) the basic out-of-state market area.

Analysis of the Group with 50 to 100 Employees (B)

Of the nine industries in this group, six will be treated in some detail (Table 19). Average employment for the nine industries averages sixty personnel. As a segment of the total

manufacturing employment of Salina, the number of establishments in this group is quite small. How does this pattern of establishments and employment in Salina compare to other cities?

Ten cities with a population range of 40,000 to 45,000 people were used to compare manufactural employment and population. Table 20 is the data key for Plate XXI.

Jo-Mar Dairies (Nm-4). In Salina the only dairy that produces and distributes its own milk is the Jo-Mar Dairies Company, which has a steady employment of 60 people (Plate XXII, Fig. 1). The largest part of the milk shed lies within a 50 mile radius.

This industry began in 1929, and since the late 1930's, has gained in employment; but when compared to previous percentage increases in sales, it has lost in sales. At the present time, its market includes one-third of the people in the city of Salina, and the dairy provides the entire milk supply to Schilling Air Force Base.

Weber Flour Mill and Western Star Mill (Bm-5,6). One man owns and operates the two flour mills.[33] The two industries employ 120 people, and both process and store wheat. Most of the wheat is imported from western Kansas districts. More than 98

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[33] J. R. Vanier, owner of Western Star Mill and Weber Flour Mills is an important financier in Salina. He has varied economic interests throughout the West. He owns Gooch's Mills, which is a large flour and food producer operating with home offices in Lincoln, Nebraska.

Table 19. Industries with 50-100 employees.

Industry	Symbol Classification	Number of Employees
Jo-Mar Dairies	Nm-4	60
Western Star Mill	Bm-5	60
Weber Flour Mill	Bm-6	60
Consolidated Print	NBm-7	63
Wyatt Manufacturing Co.	Bm-8	59
Salina Manufacturing	Nm-9	50
Swift and Co.	Bm-10	50
Salina Journal	BNm-11	85
Gage Plumbing and Heating	Nsm-12	60

Source: Field research.

Table 20. City manufactural employment and population.

City	Manufactural Employment	Population
Richfield, Minnesota	3,724	42,523
Everett, Massachusetts	6,274	43,544
Quincy, Illinois	5,993	43,793
SALINA, Kansas	1,480	43,202
Owensboro, Kentucky	5,142	42,471
Lakeland, Florida	1,821	41,350
Milford, Connecticut	6,916	41,662
Pine Bluff, Arkansas	3,322	44,037
Arcadia, California	4,055	41,005
Yakima, Washington	1,850	43,284

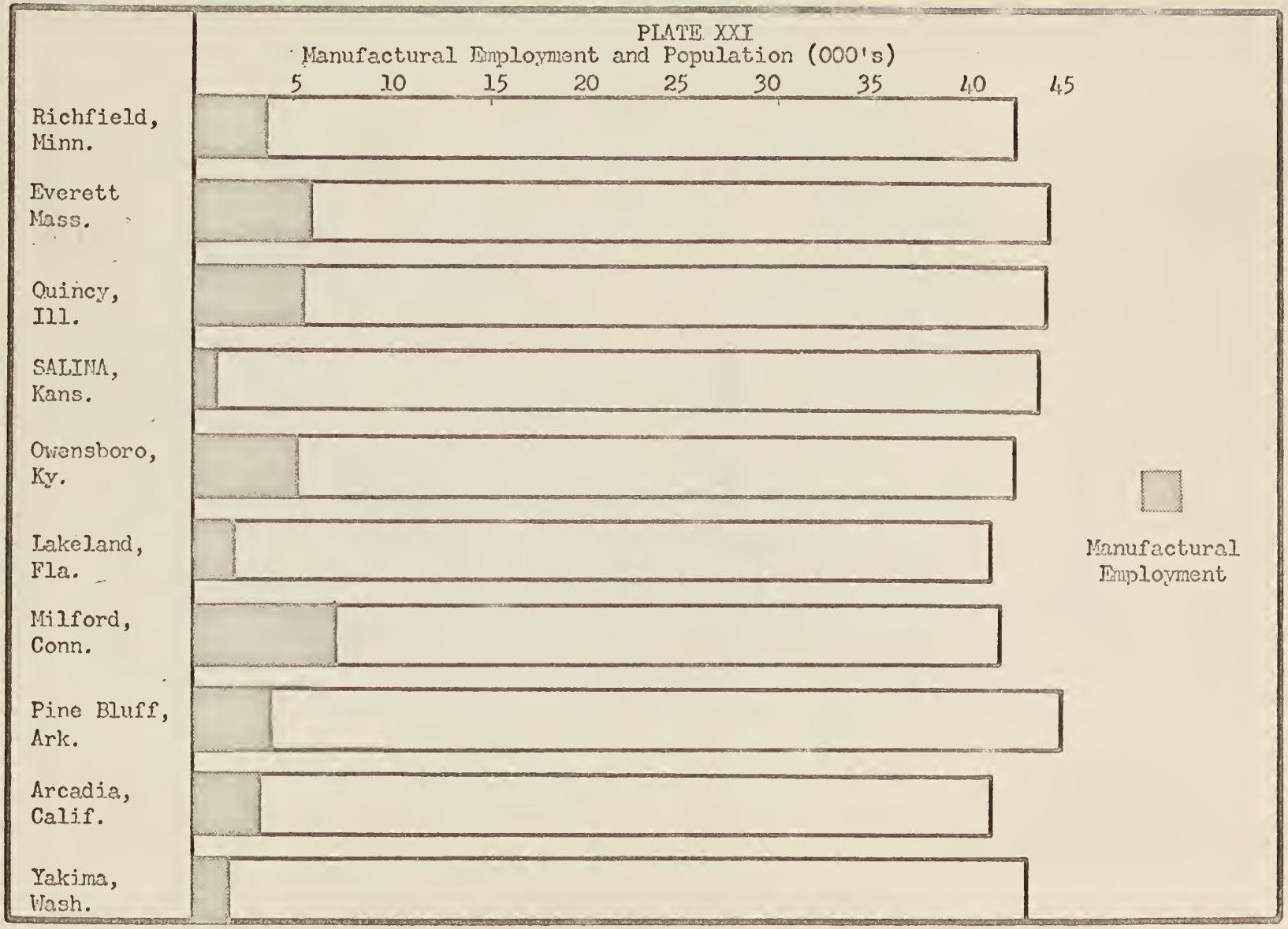
Source: U. S. Department of Commerce, County and City Data Book, 1962.

EXPLANATION OF PLATE XXI

A comparison of manufactural employment and population for ten cities.

Source: U. S. Department of Commerce, County and City Data Book, 1962.

PLATE XXI


Manufactural Employment and Population (000's)
5
10
15
20
25
30
35
40
45
Richfield, Minn.
Everett Mass.
Quincy, Ill.
SALINA, Kans.
Owensboro, Ky.
Lakeland, Fla.
Milford, Conn.
Pine Bluff, Ark.
Arcadia, Calif.
Yakima, Wash.
Manufactural Employment

EXPLANATION OF PLATE XXII

Fig. 1. Jo-Mar Dairies is the largest independent producer and supplier of dairy products to Salina.

Fig. 2. Gooch's is one of the larger food and feed processors in Salina.

PLATE XXII

Figure 1.

Figure 2.

percent of the grain and milled products are sold outside of the state. The wheat and flour is shipped by rail to Kansas City, and then by leased barges to New Orleans. Approximately half of the export total is allocated to southeast United States markets and the other half to Pennsylvania and New York state markets.

The Western Star Mill was established in 1885, and is referred to frequently by the trade name of its products (Plate XXII, Fig. 2). The Weber Flour Mills was established in 1918 and is the third largest producing mill in Salina.

Consolidated Print (NBm-7). Consolidated Print is the largest printing industry in Salina, and probably, it is the most entrenched historically.

The industry is a fine print publisher and distributor of paper. Most of the raw paper is obtained from Wisconsin and New York. About 60 percent of the finished paper product is allocated to markets within a 50 mile radius. This organization has increased its sales of paper products 25 percent within the last decade. Employment was increased from 58 to 63 personnel or an increase of 8 percent. The depression of 1931-1936 affected the industry severely, but Consolidated Print continued to operate. The need of raw paper for military purposes carried the company during World War II. The primary market area for published print is within a 50 mile radius of Salina. Consolidated Print will continue to grow because it has a reliable market and modern, efficient facilities.

Wyatt Manufacturing (Bm-8). Wyatt Manufacturing is the largest light metal manufacturer in Salina (Plate XXIII, Fig.1). This moderate size industry has a highly seasonal employment structure. Its employees average 59, with summer addition of 15 employees. It is one of two industries in Salina that produces cast iron in a foundry. Wyatt must import structural steel. Most of this is imported from Denver, Lincoln, and Chicago. Farm implements production accounts for 80 percent of the total employment. Almost all of these farm implements are exported outside the state. Only 10 percent of Wyatt's market is within the 50 mile radius. A modern grain elevator is the most important implement manufactured for export, and it is sent to the Lakes states area, Tennessee and Alabama. Recently, the Wyatt Manufacturing Company purchased the assets of the E-Z-Way Company, Decatur, Illinois. All of the manufacturing equipment will be transferred to Wyatt's Salina plant. The E-Z-Way Company manufactures a farm type feed mill "....which grinds and blends four different ingredients and meters the feed in feeding systems."[34]

Wyatt Manufacturing is associated with enterprises in Chester and Cardiff in the United Kingdom, who are preparing to manufacture the feed mill.

The firm was founded in 1903 to build a haystacker. The production of the haystacker was discontinued 5 years ago.

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[34]The Business Scene, "Wyatt Buys Illinois Firm", The Salina Journal, March 15, 1963, p. 10.

This company has experienced an increase of two and a half times in sales and a 50 percent increase in employment within the last decade.

Future licensing of foreign manufactures may be possible. Its national market area, apart from the established farm implement area of Kansas, extends throughout the wheat and corn regions. A policy of product diversification and consolidation of operations in this Salina vicinity strengthens the company. Wyatt Manufacturing should have an excellent future, one which is not dependent entirely on the rise or decline of the local marketing area.

Salina Manufacturing (Nm-9). Salina Manufacturing is a metal manufacturer and has a nonbasic employment force (Plate XXIII, Fig. 2). All of the sheet metal raw materials are shipped to the Salina plant by truck freight from Kansas City, Missouri. The company distributes 80 percent of its finished products within a 50 mile radius of the city. Although this company somewhat resembles Wyatt Manufacturing by producing metal products, the type of product is quite different and accounts for the different character of the market distribution. This company manufactures a pressurized pneumatic conveyor for movement of lighter grains. An elevator that will carry the heavier grains is also produced by the company and is distributed within the Corn Belt region principally.

Salina Manufacturing was founded in 1951 and is, by contrast to many of the other companies, a relatively new and

quickly expanding industry. Within the last five years, this industry has increased 50 percent in sales, and its employees have risen from 40 to 50. Its growth within the last 10 years is attributed generally to the development of the pneumatic conveyor. The future of Salina Manufacturing will depend on a wider distribution of the pneumatic conveyor, or the manufacture of a more diversified range of saleable articles.

Swift and Company (Bm-10). Swift and Company, a meat packing and products company of national importance, limits its function in Salina to poultry and dairy products. The activity is the most seasonal of all industries in Salina. During the "turkey season", in November and December, as many as 50 extra people are hired. Over 85 percent of Swift's total production is distributed outside the 50 mile radius. Some of the milk and cheese products produced in Salina are distributed on international markets.

Other than the highly seasonal fluctuation of employment, the industry does not change substantially, and operates profitably on a large market area outside of the state. It is an affiliate with the home office of the local company in Chicago. Following the pattern described in other industries, the local Swift operation is fortunate that it does not rely on a limited local market area. The regional and national market expansion promises continued production of poultry and dairy products at the local plant.

EXPLANATION OF PLATE XXIII

Fig. 1. Wyatt Manufacturing Co. is an internationally affiliated light metal industry.

Fig. 2. Salina Manufacturing specializes in the production of a pneumatic conveyor for light grain.

PLATE XXIII

Figure 1.

Figure 2.

Gage Plumbing and Heating (Nsm-12). Gage Plumbing and Heating is one of the most rapidly growing manufacturing service units in employment and sales in Salina (Plate XXIV, Fig.1). Since it was first established in 1941, as a plumbing and heating activity, it has diversified into financing, wholesaling, and contracting activities. It has increased from 15 employees to its present 60 personnel size since 1958. Except for Wyatt Manufacturing, which has increased two and one-half times its original sales, Gage is the next largest with an increase of two times its original sales. Gage's employment has risen two-fold within the last decade. The only planned increase in overall company expansion is in the area of wholesaling. An important factor that has contributed to the growth of the concern within the last decade, was the relocation to a new site. Good management and an immediate service area should assure growth in the immediate future.

Industries with 25-50 Employees (C)

Table 21. Industries with 25-50 employees.

Industry	Symbol Classification	Number of Employees
Beverley's Independent Pack	Bm-13	40
Henry Industries	Hm-14	30
Coca-Cola Bottling Co.	Nm-15	26
Salina Concrete	NBm-16	45
Pepsi-Cola Bottling Co.	NBm-17	36
Robinson Milling Co.	Bo-18	25

Source: Field research.

Beverley's Independent Packing (Bm-13). Beverley's Independent Packing has experienced the most financial difficulty of the manufacturing and processing firms in Salina (Plate XXIV, Fig. 2). A labor strike and two bankruptcies have created this difficulty. It has been a meatpacker and carcass distributor since its founding in 1894. Its expansion plans include the construction of a $3 million meatpacking facility that will increase the present slaughtering capacity from about 40 animals per day to almost 40 per hour. The livestock comes from the immediate area. However, proximity to the raw material source does not necessarily assure the economic stability of this company. Competition from Omaha and Kansas City could place this company in economic difficulty.

Henry Industries (Bm-14). Henry Industries, a subsidiary of a Topeka company, has probably the most steady sales and employment structure of the small manufacturers in Salina. The company owns the patent from which the Henry Hydraulic Jackhammer is produced. The nationwide demand for this product carries 95 percent of its products outside the state. The principal markets are New York state and California. Henry Industries also has an international affiliate in Cardiff, England.

Coca-Cola and Pepsi-Cola Bottling Companies (Nm-15), (NBm-17). The two bottling companies, Coca Cola and Pepsi-Cola, resemble each other closely in employment structure, products, and marketing. (Plate XXV.) Both of the companies have

EXPLANATION OF PLATE XXIV

Fig. 1. Gage's Plumbing and Heating is an important servicing, financing, and wholesaling industry in Salina.

Fig. 2. Beverley's Independent Packing will meet immediate expansion needs because it already has ample space.

PLATE XXIV

Figure 1.

Figure 2.

EXPLANATION OF PLATE XXV

Fig. 1. The Coca Cola Bottling Company is the older of the two bottling companies and plans to expand to the left of the present structure.

Fig. 2. The Pepsi-Cola Bottling Company is the largest of the three bottling units in Salina.

PLATE XXV

Figure 1.

Figure 2.

franchise trade regions. Approximately 65 percent of the sales of the two companies occur within a 50 mile radius of Salina. Coca Cola was founded in 1912, and is planning a new bottle storage warehouse. Pepsi-Cola, founded in 1939, has a higher bottling production because it has warehousing facilities for stock at Concordia and Junction City, Kansas.

Several innovations in the bottling industry, including a greater range of bottle size, and the development or addition of new beverages, have expanded the markets and lifted the prospects for both bottling industries. Since the marketing area is limited, future increases in sales will be dependent on greater market penetration into the competitor's market, future product diversification, and population increase.

Robinson Milling (Bo-18). Robinson Milling is neither a grain processor nor a manufacturer, but rather a storage unit. Its classification in the industrial grouping was done chiefly because of its long-time industrial operations, and its intention within the next decade to resume operations. It is a storage unit with approximately 2 million bushels capacity of wheat in its storage elevators. In comparison to the Garvey Elevators (40 million bushels) and Morrison Elevators (10 million bushels) it is one of the smallest elevators (Plate XXVI). Competition from larger milling centers has eliminated it from its former position as a wheat processor. Although Robinson Milling is experiencing a non-operative period in milling, it has supplanted this operation adequately by storage and distribution activities.

EXPLANATION OF PLATE XXVI

Fig. 1. The Garvey Storage Elevators are the largest wheat storage elevators (40 million bushels) in the Salina area.

Fig. 2. Overlooking the city to the NE, the Morrison Wheat Storage Elevators (10 million bushels) are the second largest in storage capacity.

PLATE XXVI

Figure 1.

Figure 2.

According to the management, there will be an end of a substantial portion of the United States government's grain storage eventually, followed by the consequent decline in the number of the large storage units in the Salina area. Because of this possibility, those units that have been stabilized and well managed will continue storage operations. It is the manager's opinion that Robinson Milling is such a storage unit.

Industries With 10-25 Employees (D)

Table 22. Industries with 10-25 employees.

Industry	Classification Symbol	Number of Employees
Globe Sheet Metal	Bm-19	20
Grain Belt Supply	Nm-20	18
Beverley Wholesale	No-21	20
Central Kansas Electric	NBms-22	11
Applequist-Lagerberg (Metal)	Bm-23	18
Larson Lumber Company	Nms-24	23

Source: Field research.

Globe Sheet Metal (Bm-19). Globe Sheet Metal is a contractor primarily and not a metal product producer. Its production is primarily for its own use in the installation of metal ducts for large air conditioning units. Approximately 40 percent of the contracting remains in the state. The balance is contract work around the fringe areas of the state. The most recent and largest contract is at Fort Leonard Wood, Missouri.

Grain Belt Supply (Nm-20). The industry with the greatest employment decrease in the city of Salina in the past decade is Grain Belt Supply. It has declined from 42 employees in 1950 to 18 in 1963. As a manufacturing establishment, it is principally the producer of a grain storage elevator. Since the recent governmental restrictions on amount of grain storage, equipment sales have fallen off. Grain Belt Supply is one of the best examples showing the weakness of a company's manufacturing a single product.

Beverley Wholesale (No-21). Beverley Wholesale is operated as a subsidiary of Beverley's Meatpacking Company. This industry processes many of the scraps from the packing plant and distributes these in the form of lunch meats. It is entirely dependent on the packing plant.

Central Kansas Electric (NBms-22). Central Kansas Electric is a main supplier of "v-belts", a motor rewinder, and a manufacturer of small automotive supplies. It has associated interests in Mt. Vernon, Indiana, and is at present the supplier of a large newly built grain storage elevator equipped with "v-belts".

Since 1948, Kansas Central Electric sales have increased steadily, and within the last 5 years have risen 40 percent from the original sales. This industry's management indicated that the immediate market area was saturated, and that a new sales market would have to be opened outside the area.

Applequist-Lagerberg Company (Metals) (Bm-23). The Applequist-Lagerberg Company is the most progressive of the small metal manufacturers, and in the near future will compete in many products manufactured by larger companies in the city (Plate XXVII, Fig. 1). This industry is closely allied with Robert's Manufacturing and the Salina Foundry. The three industries are common users of the iron produced at the Foundry. The bulk of Applequist-Lagerberg's product for sales export outside the Salina area is the grain auger. The Lake States (Illinois, Michigan, Ohio) and Canada are the principal importers of the product.

Larson Lumber Company (Nms-24). Larson Lumber Company is a manufacturer of millwork and distributor of lumber products (Plate XXVII, Fig. 2). Since the company was established in 1946, it has increased rapidly. Within the last decade its sales growth has been almost 100 percent, while employment has risen twofold. The industry expects to build its future growth around wider sales through contracting.

Industries With 1-10 Employees (E)

Analysis of Group E. Of the industries in Group E, only one has made systematic efforts to plan its growth, and is expected to grow. Hazelwood Paper Box Company, established in 1957 and the youngest of the six industries in Group E, is expected to enjoy profitable operations and marked growth. It is the only producer of paper boxes in the city. However, most of

EXPLANATION OF PLATE XXVII

Fig. 1. Applequist-Lagerberg Co., producer of grain augers, is the most rapidly expanding small metal manufacturer in Salina.

Fig. 2. Larson Lumber Co., producer of millwork and distributor of lumber has adequate rail facilities.

PLATE XXVII

Figure 1.

Figure 2.

the packaging materials used by individual industries are imported from outside the Salina rea. Until more contracts of the larger paper boxes are included in production, the Hazelwood Paper Box Company will maintain its production of specialty boxes.

Table 23. Industries with 1-10 employees.

Industry	Classification Symbol	Number of Employees
Hale Potato Chip Company	Nm-25	3
Hazelwood Paper Box Company	Bm-26	4
Salina Venetial Blind	Nm-27	1
T. A. Kelly Incorporated (Seeds)	BNsm-28	8
Western Ice Company	NBm-29	3
Globe-Sun County Paper	Nm-30	7

Source: Field research.

The Globe-Sun County Paper has many potentialities for expansion, but will not do so because of the management's concern in keeping the business at its present state of operations. Some improvement might be apparent under new management.

The other four industries are unstable in sales and employment and have a declining tendency. Their type of product, which is one serving a limited market area, does not warrant progress under the present market conditions.

Overall conditions of industry can be more thoroughly analyzed and described by Plate XXVIII.

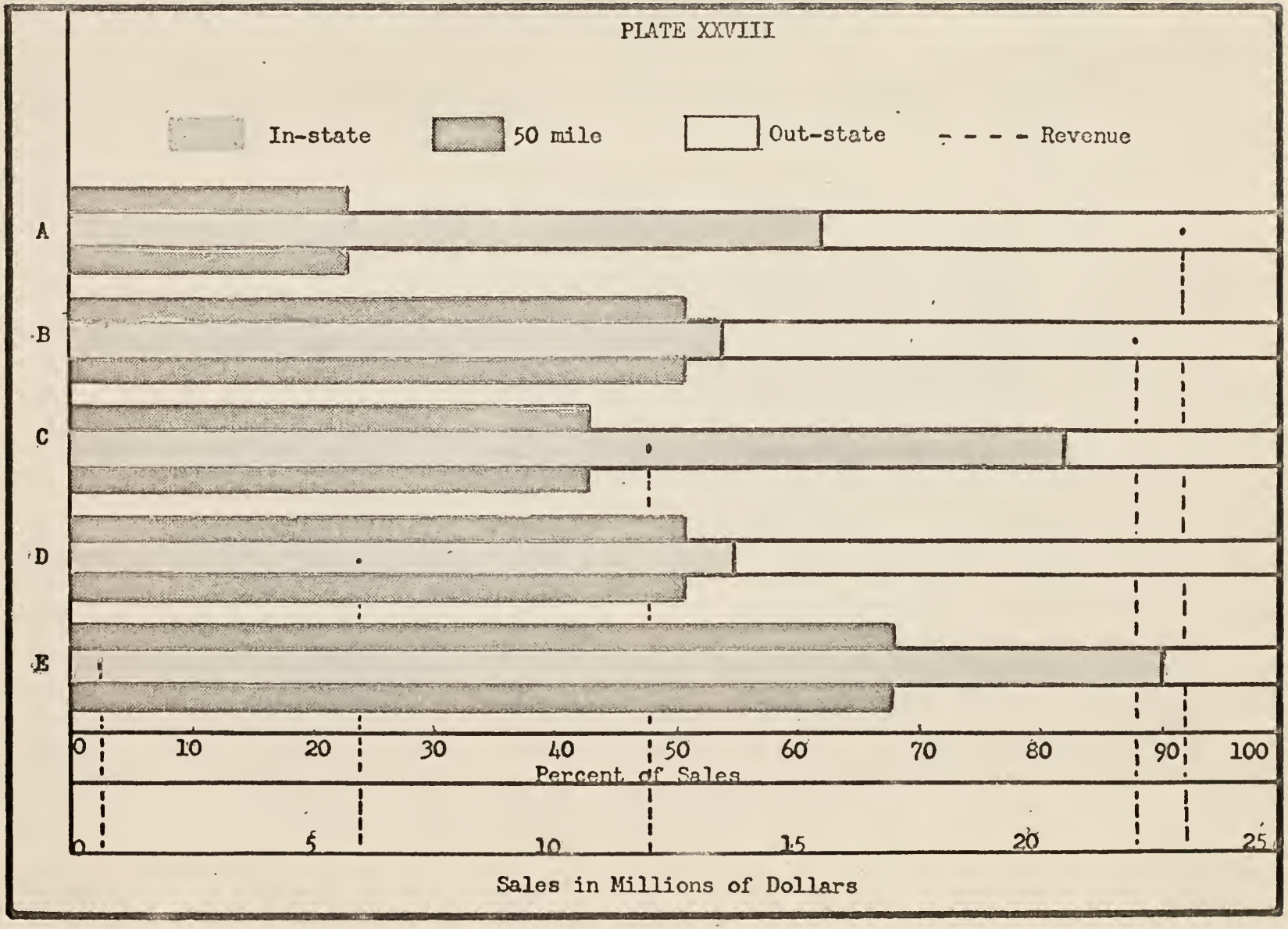
Analysis of Plate XXVIII. Although Group A has the largest total revenue, a larger number of industries is represented in

EXPLANATION OF PLATE XXVIII

An analysis of Groups A - E according to amount of sales, and distribution of sales.

Source: U. S. Department of Commerce, County and City Data Book, 1962.

PLATE XXVIII



Group B, the second most important source of sales revenue. Group B provides less than half of the total revenue, but this group is the most basic for employment of Salina. The three industries in Group A supply the greatest percentage of the total revenue. One of these companies--Kansas Power and Light --distributes all but 6 percent of the profits to stockholders. The distribution of dividends, more than salaries alone, contribute to the nonbasic (service) activities. Indicators of strong trends can be detected in Plate XXVIII. In Salina, the smallest categories of industries earn an even smaller proportion of income; while the larger proportion of their total market area falls within the 50 mile market radius and in-state market lines. For more definite predictions, another study such as this one should be made within the next 5 years.

Table 24. Data for Plate XXVIII.

Category	Group A	Group B	Group C	Group D	Group E
Sales (millions of dollars)	23	21.2	6.7	2.8	0.6
Percent of Trade					
Within 50 miles of Salina	23	51	43	52	68
Out of State	34	46	19	27	5
In State	66	54	81	73	91
Number of Employees	407	547	202	110	26

Source: Field research.

Other Basic Service Activities

All other service activities account for 8 percent of the

total industrial employment. Only one percent of this employment is basic, and apparently is unimportant in the overall employment structure. Most of the group is comprised of construction workers employed for general building construction and for the construction of Interstate Highway 70. Others, considered to be a part of this group, are carpenters and those with technical skills needed in the building trades. The market for the more skilled construction skills (carpenters, electricians) and general construction has developed within the city of Salina. The need has been apparent for the past eight years, and during this time many companies have become established. Thus, this employment group is serving the city and will be classified into the grouping of "all other nonbasic".

SALINA'S NONBASIC ACTIVITIES

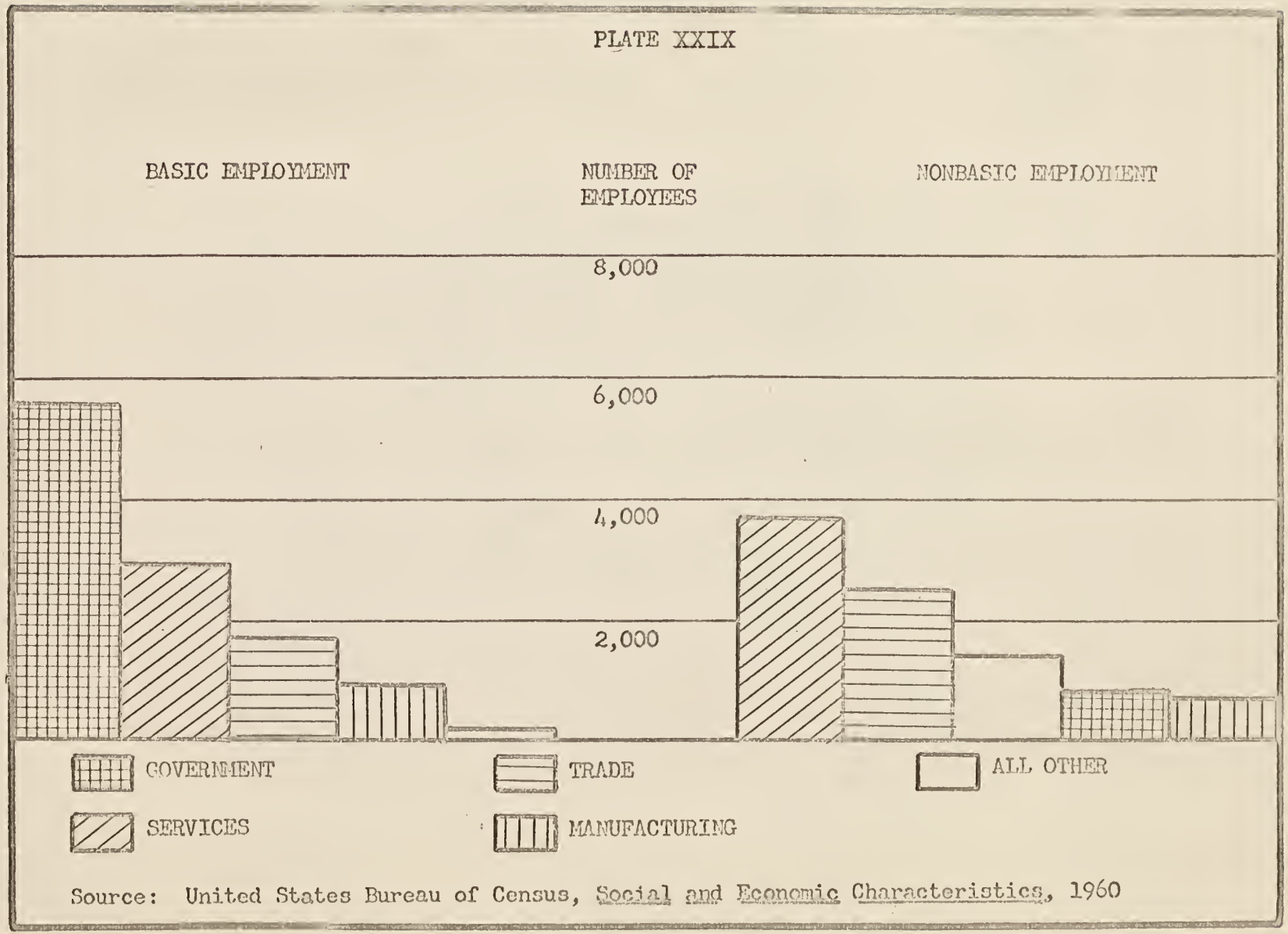
The four previous parts have presented an analysis of one vital segment of Salina's basic economic activities--those activities which supply goods and services to markets beyond a 50 mile radius. In the discussion of manufacturing, both basic and nonbasic activities were analyzed. A brief survey of nonbasic activities will complete the study of the local economy and may provide sufficient evidence to warrant conclusions concerning the relationship of the basic and nonbasic activities (Plate XXIX).

According to data presented in Part IV, Salina's non-basic economy employs 9,150 people, or 45 percent of the industrial

EXPLANATION OF PLATE XXIX

A basic and nonbasic employment analysis of Salina, Kansas.

PLATE XXIX



Source: United States Bureau of Census, Social and Economic Characteristics, 1960

employment force. There are 86 nonbasic employees for every 100 basic employees. The individual employment categories are represented in Table 25, and indicate how the number of employees are distributed. The first column shows the percentage of total employment; and the second column shows the percentage of total nonbasic employment in each category.

Table 25. Salina's nonbasic employment.

Category	Number of Employees	Percentage of Total	Percentage of Nonbasic
Services	3,700	18	40
Trade	2,500	13	27
All other	1,450	7	16
Government	800	4	9
Manufacturing	700	3	8

Source: Compiled field research.

Nonbasic Service Activities

Nonbasic service activities employ an estimated 3,700 people, or about 40 percent of the total nonbasic employment. Of Salina's total service employment (basic and nonbasic), 55 percent is nonbasic. Educational activities (both private and government), repair, finance, insurance, and real estate activities are the leading categories of nonbasic activities. Transportation and communication, both essential to the economic livelihood of the city, are small in total numbers.

Nonbasic Trade

Approximately 60 percent of Salina's wholesale and retail trade activities are nonbasic employment. These activities provide 2,500 jobs (Tables 25,26, Plate XXX, Fig. 1). About 2,000 are retail employees and 500 are in wholesale trade.

Table 26. The first five nonbasic employers in retail trade in 1960.

Category	Number of Employees
Eating and Drinking Places	517
Grocery Stores	375
General Merchandise Stores	336
Automotive Dealers	348
Limited Price Variety Stores	126

Source: United States Bureau of Census, General Social and Economic Conditions, 1960.

Nonbasic Government

Approximately 13 percent of the total govenment employment of the city of Salina is nonbasic. There are about 800 employees who work for the city. Among the 800 employees are 20 employees of the United States Post Office of Salina. Technically, this grouping should be considered nonbasic federal employment. Because of the small size of the group, these activities were considered part of the city government employment structure.

Nonbasic Manufacturing

Nonbasic manufacturing accounts for 3 percent of the total

EXPLANATION OF PLATE XXX

Fig. 1. Rail facilities and large warehouses provide the necessary material requirements for wholesale and retail trade in Salina.

Fig. 2. Salina Concrete Products is the largest ready-mix supplier and concrete block producer in Salina.

PLATE XXX

Figure 1.

Figure 2.

employment and 8 percent of the total nonbasic employment. About 44 percent of the total manufacturing employment is considered nonbasic employees. Plate XXIX graphically compares manufacturing to other employment categories. Part VII of the text presents a detailed description of manufacturing units.

Other Nonbasic Activities

Other nonbasic activities constitute a higher percentage of nonbasic employment than nonbasic manufacturing employment. All other employment classed as nonbasic, in this category, includes 1,450 personnel or 7 percent of the total. The "other" category of nonbasic activities includes 16 percent of the total employment in nonbasic activities. Construction activities are the principal component of the other nonbasic category. Construction companies have responded to the market for housing, highways and other building opportunities in recent years. Salina Concrete (NBm-16) employs 45 men and has 75 percent of its total sales of concrete blocks and ready-mix concrete within the city and the immediate fringe areas of Salina (Plate XXX, Fig. 2). The construction industry worker includes not only the unskilled concrete worker, but the skilled electrician, plumber, and carpenter as well.

A summary and conclusion of this section will be given in Part X.

SUMMARY AND CONCLUSIONS

Salina

Salina is the fourth largest city in Kansas, with a population of 43,000 people. Salina's 20,300 jobs give it an unusually high employment-population ratio. According to the employment-population ratio, 47 percent of the population is employed in the following categories: manufacturing, trade, service, government, and other activities. This is one percent less than in the Madison study by John Alexander. Salina's economy is influenced by the trend of the 11,150 jobs of basic employment. Basic employment provides 55 percent of the community's employment. Nonbasic (service) industries employ 45 percent of the total employment. Each 100 basic jobs in Salina support 86 nonbasic jobs.

Federal government is the largest single source of Salina's basic employment. It provides for approximately 27 percent of the total employment of all activities in Salina. Total government (Federal, state, county, city) accounts for 31 percent of the total employment. Service activities (basic and nonbasic), government, and trade (21 percent of the total employment) account for 84 percent of the total employment. Manufacturing accounts for 8 percent of the total employment. Salina's decentralized position away from more populous areas has enabled it to become an important government strategic center. Manufacturing has been hampered generally by the distance from raw materials;

except for wheat, which comes from the immediate area. Salina's metal manufacturing activities have been confined to the production and repair of farm implements, particularly those associated with the grain processing and storage enterprises. Salina's basic (nonlocal) markets are those that consist of purchasers of specialized products (air hammers), and agricultural areas that use equipment similar to what is utilized within the Salina area.

It is the author's opinion that Salina is a city which is: (a) being provided with trade activity monies from a government defense site, (b) providing a home base for manufacturers of farm equipment, and processors of wheat, (c) a trade center for a 50 mile hinterland, and is (d) a wheat distributor and flour processor for an out-of-state market area.

Salina's Future

Since 1960, Salina's economy and rate of population growth has leveled. No large change is anticipated during the 1960 decade. This study has indicated Salina's primary dependence on employment generated by government activities, particularly the Schilling Air Force Base. The extent to which this dependence has developed has been related with some degree of refinement. Several respondents related that economic conditions have reached and held to a level now, but would be subject to change in a short period of time if Schilling Air Force Base were to be deactivated once again.

Employment Summary

The nonbasic enterprises employ 9,150 people and have a different employment structure from the basic enterprises. Measured in terms of basic and nonbasic employment, the two population structures are compared in Table 27.

By comparing the employment size of firms, most nonbasic firms are quite small. The establishments representing the largest number of employees of nonbasic employment are those associated with retail trade, and eating and drinking places.

Tables 27 and 28 were derived after further analysis of the basic and nonbasic economies. This data indicates that: (a) government is the most basic of all activities, (b) only manufacturing and government, in the balance, are more basic than nonbasic, (c) service activities, and trade are the groups most dependent on the local market, (d) "other" activities (90 percent nonbasic and construction activities principally, account for the highest percentage category among the nonbasic employment groups.

Table 27. Percentage of basic and nonbasic employment in five categories.

Category	Nonbasic Employment Number	Nonbasic Employment Percent	Basic Employment Number	Basic Employment Percent
Services	3,700	18	2,900	14
Trade	2,500	13	1,700	8
Government	800	4	5,500	27
Manufacturing	700	3	900	5
Others	1,450	7	150	1
Totals	9,150	45	11,150	55

Table 28. Total, basic, and nonbasic breakdown of total employment.

Category	Total Employment	Percent	Basic Employees	Percent	Nonbasic Employees	Percent
Government	6,300	31	5,500	87	800	13
Services	6,600	32	2,900	44	3,700	56
Manufacturing	1,600	8	900	56	700	44
Trade	4,200	21	1,700	40	2,500	60
Others	1,600	8	150	10	1,450	90
Totals	20,300	100	11,150		9,150	

Source: Computed field data.

Factors Aiding Expansion

Factors that are assisting Salina's growth parallel the expansion of the basic activities. Adequate transportation, including the four major railroads and the two major intersecting highways, has given Salina a good degree of accessibility from several major directions.

From the time of Colonel Williams' original settlement in 1856, Salina, located at the junction of the Saline and Smoky Hill rivers, has been favored in its development by its site. The site consists primarily of a river terrace development. Although trade and service activities serve as good indices of a city's economic health, enterprises in these categories in Salina supply a limited market area. In Salina, nonbasic (service) activities depend on government employment. Government employment in Salina is subject to sudden change. This magnifies manufacturing activities as the most important of the remaining

nonbasic service activities. Manufacturing, with 8 percent of the total employment force of the city, is a small service activity supporter. This accounts for the efforts to increase manufacturing activities; especially, a more diversified industry.

There is little or no prospect that Salina will increase in population during the present decade as it did in the 1950-1960 decade. Most of the increase between 1950-1960 was the direct result of the reactivation of Schilling Air Force Base. After the severe consequences incurred to the Salina economy because of the deactivation of a refueling unit (Part V), Schilling should remain at its present level of personnel for the immediate future.

According to the land analysis, Salina's residential growth should continue on the Smoky Hill river terrace. The future expansion will be to the south along Highway 81. Commercial activities have already developed in this area. Besides the advantage of the flat river terrace, Schilling Air Force Base is located immediately to the south of Salina.

Manufacturing activity is aided by the freight facilities of all types of transportation-truck and railroad. However, both the cost of importing raw materials and of exporting the finished product do not offer a sufficient margin of profit to warrant investment. The more efficient and prosperous metal manufacturers in Salina have their own raw iron producing foundry.

The long term development of Salina will depend on certain types of activity: (1) those which produce a product utilizing the resource capability of the area, (2) production of those products which are relatively unique and can be sold on a non-competitive market, and (3) production of those products which have a high enough value to absorb transportation costs in raw material assembly, and/or distribution to market centers.

Concluding Comments

It is hoped that this study has contributed to the overall approach in urban analysis. As a geographical study, the use of this concept has helped to divide the economic efforts of a city on the geographical basis of relative location and position of market, rather than on the basis of process.

The basic-nonbasic concept application in this study is quite similar to John Alexander's use of the method. Results of the application of the method were added to the table presented in Appendix C.

To present an adequate use of the basic-nonbasic concept, further studies must be made to improve and advance the methodology of its application and classification. Benefits to the academic world, the planners of communities, and the average citizen can be obtained by the analysis of present studies and the contributions of future studies. This study attempts to contribute an analysis of a city foreign to previous applications of the basic-nonbasic method. Several comparative studies within

the Great Plains region would permit economic predictions applicable to this entire region. Academicians, planners, economists, and geographers depend on the willful application of a basic-nonbasic concept, which can be used for an analysis of the present economy and for the prediction of the future economy.

APPENDIX A

Land Use Classification of Salina

1. Industrial
    1. Heavy
        1. Single story
        2. Double story
        3. Multiple story
            1. 50 ft. Frontage
            2. 50-100 ft. Frontage
            3. More than 100 ft.
                1. Excellent
                2. Medium to fair
                3. Poor

1. Industrial
    2. Light
        1. Single story
        2. Double story
        3. Multiple story
            1. 50 ft. Frontage
            2. 50-100 ft. Frontage
            3. More than 100 ft.
                1. Excellent
                2. Medium to fair
                3. Poor

2. Commercial - Retail
    1. One story
    2. Two story
    3. Multiple
        1. Liquid
        2. Food
        3. Clothing
            1. Excellent
            2. Medium to fair
            3. Poor

3. Wholesale and Storage
    1. Single
    2. Double
    3. Multiple
        1. 0-50 ft. Frontage
        2. 50-100
        3. More than 100
            1. Excellent
            2. Medium to Fair
            3. Poor

4. Residential
    1. Urban spacing 0 - 30 ft.
    2. Suburban spacing 30 ft. plus
    3. Subdivisions - buildings on less than one-tenth of lot
        1. Small to medium size houses, not more than 10 rooms
        2. Large houses, more than 10 rooms
        3. Apartment buildings with not more than six stories
        4. Apartment buildings with more than six stories
            1. Excellent
            2. Medium to Fair
            3. Poor

5. Public and Semi-Public Buildings
    1. Schools - Grade and Secondary
    2. Churches
    3. Governmental
    4. Train stations
    5. Fire stations
    6. Hospitals
    7. Rest Homes
    8. Telephone (Bell)
    9. Library
    A. Post Office
    B. Special Education
        1. Excellent
        2. Fair to Medium
        3. Poor

6. Cemetaries

7. Parks and Playgrounds

8. Professional

9. Recreation
    1. Bowling
    2. Bar
    3. Y.M.C.A.
    4. Club
    5. Theater
    6. Golf Course
    7. Skating
    8. Swimming Pool
    9. Fair Ground
        1. 0-50 ft. Frontage
        2. 50-100 ft. Frontage
        3. 100 plus Frontage
            1. Excellent
            2. Medium to Fair
            3. Poor

10. Vacant

1A. Construction - Contractor

APPENDIX B

KANSAS STATE UNIVERSITY
DEPARTMENT OF GEOLOGY AND GEOGRAPHY
ECONOMIC BASE STUDY INTERVIEW

Date of interview _____
Interviewer - E. C. Quandt

Name of Company _____

Address _____
Salina

---

1. What is your total full time employment? _____

   Part time? _____

   5 Years ago? _____

   a. General characteristics of employment . . . . Seasonal . . . . Increase . . . . . Decrease . . . . . .

   b. Do you expect to increase employment this year?

2. What type of product do you manufacture, process, or store?
   Food . . . . Metal . . . . Chemical . . . . Power . . . . Paper . . . . Other

   a. General characteristics of the product. Industrial . . . Consumer . . . . Bulky . . . . Light . . . . How shipped? . . . . . .

3. Is your location in Salina near raw materials?

   a. What type of raw materials are used?

How far is it shipped? Means of shipping? Costs?

4. Is your location in Salina centrally located in respect to your market?

a. General characteristics of the market . . . . . .

Is it orientated in one direction? . . . . . .

Does it serve local demands only, or as part of a market? (Percentage of output for local needs?)

Where is the bulk of your product sold or marketed to? (Percentage)

What form of transportation is used? Costs?

5. Is there a back haul required? If so, what is the product?

General characteristics . . . . . What is the nature of the product backhauled? . . . . . Is there a cost advantage?

If a cost advantage, how much?

What is the principal form of transportation used?

6. Was the industry originated by Salina People?

a. Who founded the industry? When? Why?

Why did he or they choose Salina as a site for founding his or their particular industry?

7. Is the industry today contolled and directed by Salina residents?

a. General characteristics . . . . . If, subsidiary, where is the home industry?

What type of ownership is present?

Family proprietorship, Partnership, Family Corporation, etc.

8. How long has this industry been in Salina?

How much have you expanded within the last decade?

In employment?

Facilities?

Sales?

General characteristics of historical evolvement.

9. What are your total sales?

What proportion of your sales are made outside the area?

a. General characteristics:

How would this compare with a similar establishment within Salina?

With other cities in Kansas?

10. Would you please comment on the expected future of your industry, as well as the expected future of Salina?

THANK YOU.

E. C. Quandt

APPENDIX C

Results of Basic-Nonbasic Studies

City	Date	Source	Population	Basic Employees	Service Employees
Hypothetical Hamlet			20-30	1	Almost 0
Auburn, Wash.	1953	Sims	6,500	1	.8
Oskaloosa, Iowa	1937	Fortune Magazine	10,000	1	.8
Streator, Ill.	1939	Ullman	17,000	1	.8
Medford, Oregon	1952	Ervin	20,000	1	.8
Oshkosh, Wisc.	1950	Alexander	42,000	1	.6
Albuquerque, New Mexico	1948	K. C. Fed. Res.	100,000	1	.9
Madison, Wisc.	1952	Alexander	110,000	1	.8
Brockton Area, Mass.	1946	Hoyt	120,000	1	.8
Wichita, Kans.	1940-50	K.C. Fed.Res.	200,000	1	1.4
Cincinnati, Metro. Area	1940	Cin.Plan Com.	787,000	1	1.4
Detroit Metro Area	1940		2,377,000	1	1.1
(Detroit Plan Comm.)	1930		2,177,000	1	1.3
New Jersey	1948	Hoyt	4,800,000	1	1.0
New York Metro Area	1940	Hoyt	12,000,000	1	2.1
Washington, D. C.	1947	Natl.Cap. Park and Plan	1,000,000	1	1.1
Salina, Kansas	1963	Quandt	43,000	1	.86

Source: Edward L. Ullman, The Basic-Service Ratio and the Areal Support of Cities, 1953, p. 14.

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A GEOGRAPHIC-ECONOMIC BASE STUDY OF SALINA, KANSAS

by

ELDOR C. QUANDT, JR.

B. A. Valparaiso University, 1961

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Geology and Geography

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1963

ABSTRACT

Salina, the fourth largest city in Kansas, is a prosperous agricultural and service city located on the eastern margin of the winter wheat belt of North America and the western margin of the Flint Hills beef cattle region. The general economic functions of Salina are well known. These functions were evaluated to isolate and describe the geographic and economic factors that affect Salina's prospects. In this study, an economic analysis of the city is applied using a thorough classification of the employment structure. The basic-nonbasic method was utilized to divide total employment into two categories: (1) the one supports a nonlocal market--a market which brings money into the city--and is termed the city's basic employment; and (2) the other is the service category--or group supporting local market requirements--and is the nonbasic employment.

Several objectives were of particular importance in the application of this method of economic analysis to the city. The most important are: (1) to describe the employment function of Salina, a community that is concerned with a present problem of employment; (2) to incorporate into the basic employment concept methods used previously in the studies of John Alexander to describe and analyze cause-and-effect relationships in the economic base of the city; and (3) to further the application of this method of analytical study in a region thus far foreign to its application.

All of the principal urban manufacturing activities were analyzed by the investigator from data compiled through the application of interview schedules, field reconnaissance and survey, and mapping of land use in the city and region. From the analysis, it was found that basic employment provides 55 percent of the employment in Salina. The nonbasic employment (service industries) provide 45 percent of the total employment. Every 100 persons engaged in basic jobs in the city support 86 persons in nonbasic jobs.

Salina is a city which functions as: (1) an agricultural trade and service center to a region within 50 miles of the city; (2) a wheat distributor and flour processor for an out-of-state market; (3) a home base for manufacturers of farm equipment; and (4) the prime focus for trade and service monies from a Federal government defense establishment: Schilling Air Force Base.

The future of the Salina economy depends on the growth of types of activities which: (1) produce goods utilizing the resource capabilities of the area; (2) process or manufacture of goods that are relatively unique and will seek out noncompetitive markets; and (3) process or manufacture goods with a sufficiently high value to absorb the costs of transportation in the assembly of raw materials and/or the costs of distribution to markets.

It is hoped that this study has contributed to the overall approach in urban analysis. As a geographical study, the use of

the basic-nonbasic technique helps to distinguish the categories of both employment and economic activity of a city on an areal basis, relative to the location of markets, rather than on the basis of process.