Adjustment Opportunities For Human Resources In Kootenai County, Idaho

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AGRICULTURAL EXPERIMENT STATION

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Adjustment Opportunities for Human Resources In Kootenai County, Idaho

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THE STUDY

The Problem

In the portions of northern Idaho characterized by woodland interspersed with agricultural land, the incomes of rural people are low. In 1959, for example, one-quarter of all rural families living in Benewah, Boundary, Kootenai and Bonner counties received less than $3,000 total income. Sixty percent of the farm families in these counties received less than $3,000 gross income from their farms, according to the 1959 Agricultural Census (12). Only one out of five rural families in northern Idaho was receiving more than half of its income from farms.

These facts point up the need for greater consideration of nonfarm pursuits for rural families in the area. This pilot study of labor movements in Kootenai County was made to learn more about off-farm employment opportunities for farm families in northern Idaho.

Previous research has indicated that considerable unemployment is prevalent in these areas. A preliminary study by Esmay and Williams (3) in Boundary County indicated the average benchland farmer would be employed about 2½ months per year on his farm if he had no livestock, and most farmers had none. These farmers would be in a position to seek and accept off-farm employment during a considerable part of the year. Current indications are that income problems are becoming even more acute for farmers in these areas.

Kootenai County was selected for study because of its location in a low income area and because its industrial and recreational development offer above average off-farm employment opportunities. In other words, Kootenai County has some of the same rural low income problems as do the other counties in northern Idaho. However, it is considerably above average in terms of new industries and recreational development. It was intended that this work in Kootenai County would serve as a pilot study, and if the method proved worthwhile it could be applied to a larger area or region, such as the cut-over areas of eastern Washington, northern Idaho and western Montana as a whole.

Kootenai County was selected for several other reasons. The county is also located within 30 to 60 miles of the Spokane area which offers employment opportunities that might not be available within the county; consequently, part-time farmers and other rural people have considerable employment mobility. This study should shed some light on how employees move from firm to firm in an area that at times has been characterized by high unemployment and few economic opportunities.

Preliminary reports of the 1964 Census of Agriculture for Kootenai County indicate income from nonfarm sources is nearly as important to farm families as is the income from farming itself. The value of all farm products sold in 1964 was $4,560,046, while the income from sources other than farm operations was $3,416,950. The number of farms in various economic classes also serves to indicate the degree of nonfarm activity (Table 1). Income from nonfarm activities is very important for a large number of farm families.

Over the 5-year period from 1959 to 1964 the total number of farms declined by about 16 percent, and the total number of commercial farms declined by 34 percent (from 597 to 392 farms). All categories of farms declined in numbers except the two top categories of Table 1, part-time farms and part-retirement farms.

In 1964, 54.7 percent of the farms in Kootenai County were classified as non-commercial farms. Their operators worked off the farm 100 days or more or were partially retired. Some 568 worked off the farm and earned $2,633,478. Income from wages and salaries earned off the farm accounted for 33 percent of the total income for all farms from all sources in 1964. Part-time farming is an important aspect of the agricultural income picture in Kootenai County and is likely to remain that way for some time into the future. In terms of economic development, there are a number of active groups working in north Idaho and in Kootenai County itself that are trying to develop the area's resources and provide for greater employment.

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Table 1.—Farms by economic class, Kootenai County, Idaho*

Types of farms	Number of farms	
	1959	1964
Commercial farms		
Sales of $40,000 or more	15	19
Sales of $20,000 to $39,999	42	51
Sales of $10,000 to $19,999	87	53
Sales of $5,000 to $9,999	128	85
Sales of $2,500 to $4,999	162	92
Sales of $50 to $2,499	163	92
Other farms		
Part Time (operator working off farm 100 days or more.)	347	370
Part Retirement (operator 65 years old or over.)	81	102
Abnormal	0	1
Total	**1,025**	**865**

*Source: **1964 Census of Agriculture,** Department of Commerce, Bureau of the Census.

Research Objectives

(1) To review the physical and economic resources of Kootenai County engaged in agriculture.

(2) To determine trends in employment among industries and businesses within the study area.

(3) To determine employee movements in the study area with respect to both inter- and intracounty employment for the year 1966.

(4) To trace past employee movements among firms in the county and project future employment trends.

(5) To evaluate job opportunities in Kootenai County in terms of their ability to solve the rural income problem.

(6) To determine, in an internal and secondary manner, which businesses and industries are most likely to grow in terms of employment opportunities for rural people.

Literature Review

In a recent article, Day used a recursive linear programming model to explain the movement of sharecroppers out of agriculture in the South (2). Day's model was constructed from four representative technologies as follows: Stage I: no mechanization; Stage II: partial mechanization; Stage III: complete mechanization of pre-harvest operations; Stage IV: complete mechanization of pre-harvest and harvest operations. These technological innovations released tremendous amounts of human resources from agriculture in a relatively short period.

From his work, Day described a two-stage push of labor from the farm. The first stage resulted when pre-harvest operations were mechanized which forced sharecroppers off the farm and into rural towns, where they remained to be employed periodically for hand-harvest operations. The second stage occurred when complete mechanization took place, pushing farm laborers from the small rural town to the city. Some of these same economic forces are still at work today in agriculture, and the cut-over areas of the northern United States are no exception. As capital investments replace farm labor, rural people first tend to look for part-time employment off the farm. If that is not available they may move to the cities to seek full-time non-agricultural work. This second step or stage may no longer be socially as desirable as it once was because of current problems of our large cities. It seems, therefore, appropriate to study labor movements during the first stage of this movement in the cut-over areas of the United States.

A number of studies have been made concerning labor movements off the farm in other areas. Smith and Chennareddy studied farm labor movements in the Tennessee Valley (11). Some of their conclusions relevant to this study were as follows: in-farm movement was greater than off-farm movement during 1957-59; the rate of in-farm movement (or movement to the farm) was almost entirely by farm operators 55 years or older; off-farm movement was much higher among farm operators and laborers who had off-farm employment experience, and median income of continuous multiple-job farm operators was more than double that of operators who did not have off-farm employment.

Hathaway and Waldo made some significant observations in their study of multiple jobholding by farm operators (5). They found that almost one-third of the income of the farm population in the United States comes from nonfarm sources. The most frequent source of off-farm wage employment was some unit of government. Younger farm operators who had lower farm incomes were more frequently employed in manufacturing, mining, and wholesale and retail trade. General indications were that, for most farm operators, off-farm wage employment is a seasonal or occasional matter, supplementing farm income but not a major second income stream. While the above statement may be true for the nation as a whole, there are areas of the country where nonfarm income is relatively more important.

Perkins and Hathaway studied the reasons for movements between farm and nonfarm jobs on a national scale (10). They observed that persons who left farming and realized gains in income from the change stayed in nonfarm employment. However, those who left farming and experienced lower incomes in their nonfarm employment returned to farming. Older farmers have low mobility because they rarely increase their incomes by moving to nonfarm employment. These authors also found that the 1957-58 recession significantly retarded the out-movement from farm employment. It both reduced the gross out-movement and increased the back-movement of persons who previously had left farming.

A study in the cut-over areas of Wisconsin by Jones (8) brings out some points that may also apply to other areas of the cut-over region. Jones reported that off-farm work revolved mainly about the timber and wood product industries, recreational trade and

other scattered industries. Most of these jobs were highly seasonal. Low farm incomes forced many farmers to find off-farm jobs. Low farm incomes were attributed to short growing seasons, poor land productivity, small dairy herds and the necessity to expand in order to increase efficiency. He also found that many farmers accepted off-farm work as a permanent answer to farm income problems, and concluded that it was unlikely that many farm operators will attempt to go back to a full-time farm enterprise.

Fliegel in Pennsylvania (4) examined some of the characteristics of subsistence farmers, such as extreme fatalism, avoidance of debt, low value placed on formal education and an emphasis placed on leisure. Fliegel's study helps explain some of the reasons for remaining on the farm even with extremely low incomes.

Studies focused exclusively on northern Idaho have been conducted by Esmay and Williams (3) and Bevan (1). Bevan's work helps explain farm income problems in the area. Incomes from five types of farming in Kootenai County for 1966 were summarized as follows:

Type of Farming	Farm Size (acres)	Estimated Net Income	Capital Investment
Grain farms	560	$1,899	$102,000
Cattle-logging farms	810	5,034	91,880
Seed and grain farms	600	9,017	271,200
Dryland dairy farms	430	12,906	96,627
Irrigated dairy farms	120	7,196	120,000

Income on most of these farms is quite good, but notice that they are also quite large farms and require relatively large investments. The average farm in Kootenai County was only 310 acres in size in 1964 (considerably below all but one of the above farms), and the numbers of economically efficient farms that the County could support is obviously limited. It becomes apparent that there may be even more farmers leaving their farms in the future, unless nonfarm jobs provide adequate supplemental income in the county.

CHARACTERISTICS OF KOOTENAI COUNTY AGRICULTURE

Physical Resources

Kootenai County is made up of some 803,800 acres of land (Table 2). About 15 percent is classified as potential cropland, 32.6 percent is owned by the Federal government (mostly National Forests) and 45.3 percent is forest and woodland. According to the 1964 Census of Agriculture, of the 260,367 acres in farms, 61,351 acres were cropland harvested, 11,157 were cropland used for pasture, and some 31,241 acres were cropland not harvested or used for pasture. Also in 1964, there were 3,796 acres of irrigated land harvested. These data tend to indicate that the agricultural potential of Kootenai County is not being utilized fully.

Table 3 gives some indication of the quality of the agricultural land in Kootenai County. Land capability classes I-IV are suited for agriculture. Class I land is the best suited and Class IV land can only be farmed under certain conditions. Kootenai County has no Class I land and only 18.1 percent of its cropland is Class II land. Present-day agriculture probably is practiced on the 80,900 acres of Class II and III cropland. The right hand side of Table 3 indicates there are 113,200 acres of Class II and III private rural land in the county. This is nearly twice the cropland harvested in 1964 which again indicates agriculture in the area could nearly double in size if it were economically feasible.

Table 2.—Land area in Kootenai County by type of use, 1958*

Type of land use	Area (1,000 acres)	Percent of total
Total cropland	120.8	15.0
irrigated	16.8	2.1
non-irrigated	104.0	12.9
Pasture and range	34.3	4.3
Forest and woodland in farms	361.5	45.0
other	2.5	0.3
Other land in farms	5.0	0.6
other	0.5	0.1
Federal land	261.7	32.6
Urban and built up areas	15.8	1.9
Water areas**	1.7	0.2
Total	**803.8**	**100.0**

*Source: **Idaho Soil and Water Conservation Needs Inventory,** The Idaho Conservation Needs Committee, September 1963.

**Does not include water areas over 40 acres in size or ⅛ miles in width.

Table 3.—Private rural land by land capability class, 1958*

Land capability class	Cropland		All private rural land	
	1,000 acres	Percent of total	1,000 acres	Percent of total
I	0	0	0	0
II	21.8	18.1	24.7	4.7
III	59.1	48.9	88.5	16.9
IV	35.9	29.7	146.1	27.8
V	0	0	0	0
VI	4.0	3.3	120.1	22.9
VII	0	0	144.7	27.6
VIII	0	0	.6	.1
Total	**120.8**	**100.0**	**524.7**	**100.0**

*Source: **Idaho Soil and Water Conservation Needs Inventory,** The Idaho Conservation Needs Committee, September, 1963, Table 9, Kootenai County.

The recreation potential of Kootenai County is considerable in terms of available and suitable physical resources. There are some 43,673 acres of lakes and streams, including Lake Coeur d'Alene, and about 625,700 acres of woodland, including the National Forests. The use of the area around Lake Coeur d'Alene for recreational purposes is currently some of the most intensive in northern Idaho.

Fig. 1 shows the relationship of land and water resources in Kootenai County.

Human Resources

The population of Kootenai County was 29,556 persons in 1960 (13). Of these, 14,291 persons (48.4 percent) lived in rural areas. In 1964 there were 2,964 persons in farm-operator households, 1,631 males and 1,333 females. Evidently there are about 12,000 persons living in rural areas of the county who are not engaged in agriculture in any way. The age distribution and education of persons in farm-operator households are shown in Table 4.

Nearly one-third of the persons in farm-operator households were under 15 years of age and would not be part of the labor force. This leaves an estimated 2,074 persons who might seek employment off the farm. In 1964, 568 farm-operators were working off the farm 100 days or more. Some farm-operators' wives were probably working off the farm also, but data are not available to estimate the number.

There are relatively few beginning farmers (ages 25-34), and the educational distribution indicates 85.1 percent of the persons in farm operator households had not attended college.

Table 4. Age and educational characteristics of persons in farm-operator households, Kootenai County, 1964*

	Number of persons	Percent of total
Age distribution (years)		
0-14	888	30.0
15-24	399	13.5
25-34	259	8.7
35-44	411	13.9
45-54	452	15.2
55-64	304	10.2
65 and over	251	8.5
Totals	**2,964**	**100.0**
Education (years of school completed**)		
0-4	9	0.5
5-7	73	4.4
8	428	25.5
9-11	358	21.3
12	558	33.4
13-15	140	8.3
16 or more	111	6.6
Totals	**1,677**	**100.0**

*United States Census of Agriculture, 1964.
**Persons 25 years old and over.

Number of Farms

How many farms can Kootenai County support under present day economic and technological conditions? In 1964 there were 865 farms in the county, a decrease of 127 (12.8 percent) since the 1959 Census. Of these 865 farms, only 208 were classified as commercial farms with sales over $5,000. In other words, about 75 percent of the farms in 1964 either had gross sales less than $5,000 or were classified as non-commercial or part-time farms.

A full-time, fully employed farmer is the exception in Kootenai County. Bevan's work in 1966 gives some basis for estimating the number of full-time farmers that can currently be supported in the county. He looked at costs and returns of five types of farming in Kootenai County (1), which provides some estimate of what size a full-time farming unit should be.

Based on Bevan's budgets and the number of farms in each of his categories (Table 5) the average full-time farm would be about 587 acres in size in 1966. The total land area in all farms was 260,367 acres according to the 1964 Census. This indicates that under current economic conditions Kootenai County could support approximately 443 full-time farms (260,367 divided by 587). If the assumptions underlying the above estimate are correct, there are potentially about 422 farm operators who either have secured part-time employment or might be seeking it in the near future. From 1959 to 1964 there was a net decline of approximately 25 farm operators per year. A number of these people probably have sought employment opportunities in Kootenai County.

Off-Farm Employment Opportunities

Kootenai County has a wealth of natural resources, which is reflected by its various sources of income. Lumbering is the major source of wealth, having an estimated $22,000,000 income; recreation

Table 5.—Estimating the average size of full-time farms in Kootenai County, 1968.

	Acreage requirement[1]	Approximate number in 1964	Total acres
Grain farm	560	107[2]	59,920
Cattle-logging operation	810	91[2]	73,710
Seed-grain farm	600	27[3]	16,200
Dryland dairy farm	430	57[4]	24,510
Irrigated dairy farm	120	19[4]	2,280
Total		301	176,620

Average size of farm: $\frac{176{,}620 \text{ acres}}{301 \text{ farms}} = 587$ acres per farm

[1]Source: Bevan (1).
[2]1964 Census of Agriculture, Preliminary Reports
[3]Source: Idaho Agricultural Extension Service (6).
[4]Dairy farms were assumed to be one-fourth irrigated and three-fourths dryland.

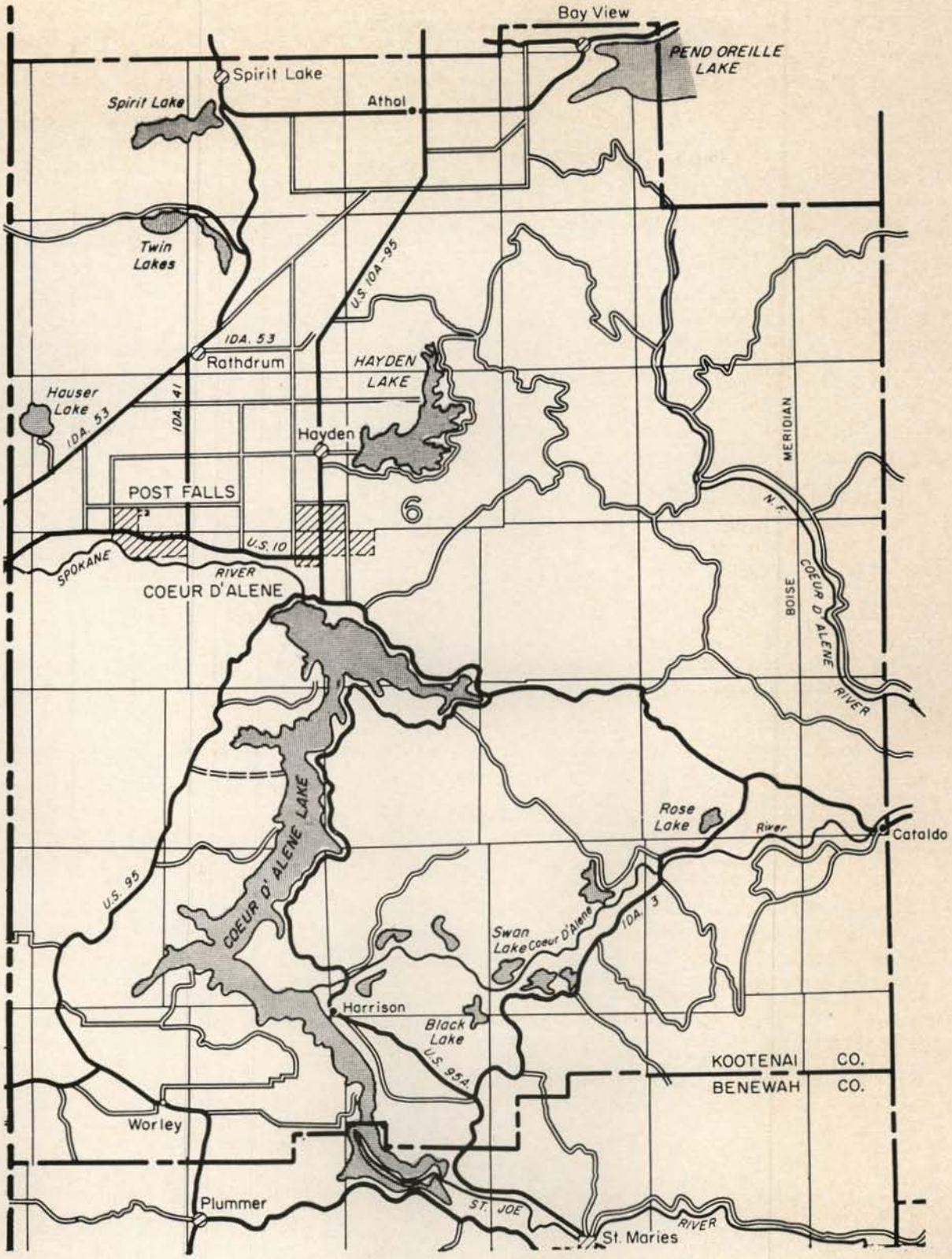

Fig. 1. Kootenai County, Idaho.

second with $12,000,000, and agriculture third at $9,000,000 (6).

Potential employment opportunities in and around Kootenai County are quite plentiful. The county has well developed forestry and recreation sectors. In addition, the city of Spokane, Wash., is located 30 miles west of Coeur d'Alene. Table 6 summarizes employment outside of farming in Kootenai County for December 1966. Table 7 shows the distribution of employment by the number of employees of each firm at this same time.

Table 6.—Number of firms and number of employees by employment categories, Kootenai County, Idaho, December 1966.[1]

Employment category	Number of firms	Number of employees[2]
Agriculture (other than farming)	8	40
Mining	1	0
Contract construction	77	284
Manufacturing	68	1,887
Transportation	39	468
Wholesale and retail trade	270	1,781
Finance	50	278
Services	178	841
Government	27	656
Total	718	6,235

[1]Department of Employment, State of Idaho
[2]As of December, 1966.

Table 7.—Distribution of employment by size of firm, Kootenai County, Idaho, December 1966.[1]

Size of firms by number of employees	Number of firms	Percent of all firms	Percent of total employment
0-5	472	66.0	14.0
6-10	112	15.6	12.1
over 10	132	18.4	73.9
Total	716	100.0	100.0

[1]Department of Employment, State of Idaho.

Based on 1964 Census of Agriculture data and 1966 employment data for Kootenai County, about 12.5 percent of total employment was in agriculture, and 5.5 percent worked both part-time in farming and part-time in some other pursuit. There are nearly as many non-farm employing firms (718 in 1964) as there are farms (865 in 1966). Manufacturing and retail trade employ the most people (Table 6), followed by the agricultural and service sectors. The manufacturing sector is centered around the forest industries, which along with recreation tends to be quite seasonal. Total employment is greatest in the firms with over 10 employees—18.4 percent of the firms employed 73.9 percent of all employees in 1966 (Table 7). There is quite a number of potential employers in Kootenai County and even more in Spokane should a farmer decide to change occupations. It should be noted, however, that employment in agriculture, forestry and recreation tends to be competitive during the summer months.

STUDY PROCEDURES

The Sample

To determine movements of employees in Kootenai County during 1966 a questionnaire was developed and a sample was drawn from all employers. Because the firms that hired over 10 employees were most important in terms of the number of employees hired (73.9 percent) a stratified random sample was used. Data were collected from personal interviews with firm managers (or other appropriate personnel) during the summer of 1967. Table 8 summarizes the number of firms sampled in each category.

Table 8.—Sampling of firms in Kootenai County, Idaho, to estimate employee mobility, 1966.

Firm size (number of employees)	Number of firms	Percentage of firms selected
0-5	472	14
6-10	112	12
over 10	132	100

The names, addresses and number of employees for each firm in the sample were obtained from the Department of Employment, State of Idaho. The Department of Employment uses 12 categories to summarize employment levels in Kootenai County. Two of these categories were combined with others and one dropped for the analysis of this study. The employment categories used were as follows: agriculture; lumber and timber; other manufacturing; contract construction; transportation, communications, and utilities; wholesale and retail trade; finance and real estate; services, nonagricultural self-employed, and domestics; and government (including education). The mining category was dropped from this study because so few people were employed in it (about 6), and the firms that hired these people were located outside the county.

Table 9 summarizes the number of firms in each employment category that were included in the sample. Additional information was also obtained from knowledgeable persons in the county concerning labor movements in categories not adequately covered by the sample.

Table 9.—Number of firms sampled in each employment category, Kootenai County, Idaho, 1966.

Employment category	Number of firms in sample
Agriculture (except farming)	2
Lumber and timber	17
Other manufacturing	9
Contract construction	12
Transportation, communications, utilities	8
Wholesale and retail trade	123
Finance, real estate, insurance	14
Services, self-employed, domestics	53
Government	13
Total	251

Employee mobility data were collected from the sample firms in the summer of 1967. These data were collected for the year 1966. The firms were quite cooperative in providing the data sought. Alternate firms were selected if a firm was not able to provide the necessary information. The same sample questionnaire was used for all firms and was modified only if the employer was unable to provide the data in the desired form.

The Questionnaire

The questionnaire itself was made up of five sections (Appendix Table A). Section A was concerned with information necessary to classify the firm and facilitate data processing. Section B included general information about the firm such as its name, address, the interviewee and the primary products of the firm.

Section C focused on the types of persons the firm employed and the problems they had in obtaining qualified persons for their positions. The most important part of this section was to obtain information about all persons who were employed during 1966. The following information was obtained for each person hired: whether his position was temporary or permanent, did he live in Kootenai County, type of previous employment, present type of work, the necessity for training and the period involved.

Section D dealt with characteristics of the firm, such as its form of organization, the types of positions in which people were employed, problems in finding new employees with adequate training and experience and past trends in increasing or decreasing its numbers of employees.

Section E was concerned with the types of new businesses that might develop in the county in the future, some of the advantages and disadvantages in locating in the county and the resources that the county possessed that might have attracted the firm to its present location.

The principal purpose of the questionnaire was to observe the movement of new employees into firms throughout the county, with particular interest in persons moving from agricultural pursuits. From this information it is possible to estimate the probability of someone moving from one employment category to another.

CHARACTERISTICS OF EMPLOYMENT CATEGORIES

Structure of Employment Categories

The types of firms encountered in the survey are summarized in Table 10. A general description of these firms is shown to give the reader some idea of where persons are employed. Kootenai County has a large lumber products industry and several popular recreational areas. For these reasons relatively large numbers of persons are employed in lumber and timber products and service sectors of the economy.

Data from 1966 was, perhaps, somewhat misleading because certain sectors were in somewhat of a recession. For example, higher-than-normal interest rates reduced construction throughout the country. This effect was noted in Kootenai County in the lumber and timber products and contract construction categories, both of which had low or declining employment during 1966.

Collection of the data 6 to 7 months after the year was over also led to some problems. The information might have been more accurate had it been collected periodically during the year. Such a procedure would include firms that leave the county during the year and account for individuals who work for very short periods of time. Sample data indicated considerably more activity for the seasonal employers than had Department of Employment information about unemployment.

Qualifications of the Labor Force

Employers expressed definite opinions about the education and experience limitations of the individuals they hire (Table 11). Over 50 percent of the firms in 7 of the 9 employment categories indicated a lack of education limited their hiring of individuals. These 7 categories included: agriculture (except farming); lumber and timber products; contract construction; transportation, communications, and utilities; finance, real estate, and insurance; services and self-employed; and government. Over half the other manufacturing and wholesale and retail trade businesses indicated educational levels were generally not a problem.

Table 10.—Firm structure of sampled employment categories in Kootenai County, 1966.

Employment Category	Types of Firms
Agriculture	animal clinics, forest managers,
Lumber and timber products	lumber mills, logging companies, veneer manufacturers
All other manufacturing	newspapers, electronics, concrete, bottling, explosives, publishing, tools and dies
Contract construction	sheet metal, plumbing, cabinet, signs, home builders, general construction
Transportation, communication, utilities	telephone, sanitation, radio, electricity, trucking
Wholesale and retrail trade	service stations, restaurants, stores, hotels, motels, automobile sales, creamery, etc.
Finance, real estate, insurance	banks, title companies, insurance agencies, real estate companies
Services, self-employed, domestics	repair businesses, resorts, boat rentals, professional services, equipment rentals, barber shops, etc.
Government	county, state and federal employers, hospitals, public schools, etc.

Table 11.—General limitations encountered in hiring people in Kootenai County, 1966.

Employment category	Education		Experience	
	yes	no	yes	no
	(percent of firms)		(percent of firms)	
Agriculture (except farming)	100	0	0	100
Lumber and timber products	53	47	29	71
All other manufacturing	44	56	67	33
Contract construction	83	17	92	8
Transportation, communications, utilities	57	43	57	43
Wholesale and retail trade	36	64	46	54
Finance, real estate, insurance	79	21	50	50
Services, self-employed, domestics	54	46	58	42
Government	92	8	38	62

Seasonal Employment

Farming, lumber and timber products, construction and recreational businesses have definite seasonal employment periods in Kootenai County (Table 12). All employment categories included seasonal employment at certain periods during the year. Construction, transportation and the service category showed the largest changes according to sample data.

Table 12.—Seasonal employment reported by sample firms, Kootenai County, 1966.

Employment category	Seasonal employment		Peak seasonal increase over average employment
	Yes	No	
	(percent of firms)		(percentage)
Agriculture (except farming)	100	0	0
Lumber and timber products	53	47	43.3
All other manufacturing	44	56	80.0
Contract construction	50	50	164.3
Trans., communication and utilities	38	62	128.6
Wholesale & retail trade	50	50	50.6
Finance, real estate, ins.	7	93	25.0
Services, self-employed, domestics	28	72	76.8
Government	46	54	26.5

Table 13.—Average monthly employment and standard deviations by employment categories, Kootenai County, 1961-1967.[1]

Employment category	Average monthly employment	Standard deviation
	(number of employees)	
Agriculture (including farming)	532	63
Lumber and timber products	1,459	145
All other manufacturing	302	82
Mining	4	4
Contract construction	234	94
Transportation, communication, utilities	454	74
Wholesale and retail trade	1,567	176
Finance, insurance, real estate	230	27
Services, self-employed, domestics	2,769	252
Government	1,479	130

[1]Source: Department of Employment, State of Idaho

Absolute changes in seasonal employment are quite different than relative changes (Table 13). The service and self-employed, wholesale and retail trade and the lumber and timber product industries along with the government are the large employers in the county. Variations in employment may be judged for each category by comparing the average monthly employment with its standard deviation. Mining showed the greatest variation in employment with a standard deviation as large as its mean. Because of its relative variability and insignificance, mining was dropped from further analysis.

Adequate work experience limited hiring in over 50 percent of the firms in 4 of the 9 employment categories. Over 50 percent of the firms in other manufacturing, contract construction, transportation, communications, utilities, services, self-employed, and domestics were employment categories that reported work experience as limiting the number of people they hired. On the other hand, less than 50 percent of the firms in lumber and timber products, wholesale and retail trade and the various levels of government indicated work experience did not limit the number of people they employed. Finance, real estate and insurance firms are equally split on the question as to whether or not past work experience was a limiting factor in hiring new people.

It appears that persons who have little or limited types of work experience coupled with an educational deficiency would have the best opportunity to find employment in the lumber and timber product industry, wholesale and retail trade or some form of government service. Such employment, however, may present other problems if the work is seasonal or employment is temporary.

Government and services, self-employed and domestics were the most stable categories with small standard deviations relative to mean monthly employment. In general, all categories showed considerable variation in monthly employment. Later analyses will examine employment trends for the past 7 years and variables related to the various seasons. Such analyses should shed additional light on future employment stability.

Areal Advantages And Expansion Potential

Neither the local tax structure, educational system, recreational facilities, communications nor the quality of the labor force would appear to limit economic growth in the county (Table 14). The local tax structure was named as a disadvantage by agricultural firms (except farming) and the wholesale and retail trade firms. Twenty-four percent of the lumber and timber products firms consider the educational system to be a disadvantage. Nearly all firm managers agreed the recreational facilities are an advantage; some indicated recreation was one of their

Table 14.—Advantages of the area with regard to factors that might affect the location of a business, Kootenai County, 1966.

Employment category	Tax structure		Educational system		Recreational facilities		Communication, transportation		Quality of labor force	
	% Yes	% No	% Yes	% No	% Yes	% No	% Yes	% No	% Yes	% No
Agriculture (except farming)	50	50	100	0	100	0	100	0	100	0
Lumber and timber products	88	12	76	24	100	0	88	12	88	12
Other manufacturing	89	11	100	0	100	0	100	0	100	0
Contract construction	92	8	92	8	92	8	75	25	75	25
Transportation, communication, utilities	100	0	83	17	100	0	83	17	100	0
Wholesale and retail trade	77	23	87	13	97	3	86	14	92	8
Finance, real estate, insurance	86	14	86	14	100	0	93	7	100	0
Services, self-employed	94	6	87	13	100	0	89	11	100	0
Government	N/A[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1]Not applicable

considerations in locating in the county. Contract construction, lumber and timber products and wholesale and retail trade firms indicated to some degree that the quality of the labor force was a disadvantage. The great majority of all firms indicated, however, that it was not.

The firms in two employment categories (lumber and timber products and other manufacturing) unanimously indicated the area could support no other firms like their own (Table 15). In general, the majority of all firms indicated that more firms like their own were unlikely. Wholesale and retail trade and the service category thought expansion was likely in some of their types of business. This opinion again reflects the recreational potential of the area. If a manufacturing firm were to move into the area it probably would be different from existing firms. A surprising number of firms explained their existence in Kootenai County as resulting from historical reasons. However, most firms were there because of the area's business potential. The reply concerning historical reasons is probably an indication that the decision to move to the county was made sometime in the past, more than anything else.

Table 15.—Potential for expansion of the number of firms in Kootenai County, Idaho, 1966.

Employment category	Do you expect more firms like your own in the future		Why did you locate in Kootenai County	
	Yes	No	Historical reasons	Business potential
	(Percent)		(Percent)	
Agriculture (except farming)	50	50	0	100
Lumber and timber products	0	100	12	88
All other manufacturing	0	100	11	89
Contract construction	27	73	64	36
Transportation, communications, utilities	14	86	50	50
Wholesale and retail trade	39	61	26	74
Finance, real estate, insurance	21	79	21	79
Service, self-employed	65	35	20	80
Government	N/A[1]	N/A	N/A	N/A

[1]Not applicable

New Employees—1966

Employment categories had quite different characteristics with respect to the numbers of permanent and temporary positions, the extent of new employee training and the propensity to hire county residents. The majority of persons hired in agriculture (except farming), lumber and timber products, other manufacturing and finance, real estate, and insurance categories were employed in permanent positions (Table 16). In the categories of contract construction, transportation, communications, utilities, wholesale and retail trade, services, self-employed and domestics and government the majority of positions were temporary. Nearly all employment categories contained firms that indicated 50 percent or more of their new employees required additional training once on the job. Only contract construction and transportation, communications and utilities firms indicated less than 50 per cent needed some training.

Table 16.—Characteristics of new employees hired in Kootenai County, Idaho, 1966.

Employment category	Type Position hired for		Receiving some training by employer
	Permanent	Temporary	
	(Percent)		(Percent)
Agriculture (except farming)	100	0	50
Lumber and timber products	64	36	50
All other manufacturing	59	41	66
Contract construction	32	68	32
Transportation, communications, utilities	31	69	6
Wholesale and retail trade	39	61	55
Finance, real estate, insurance	91	9	76
Services, self-employed, domestics	28	72	67
Government	30	70	69

Firms in all employment categories hired a majority of county residents (Table 17). There was a tendency for management positions to be filled with persons from outside the county; however, this was only a casual observation. Over 80 percent of the new employees hired during 1966 in agriculture (except farming), lumber and timber products, other manufacturing, wholesale and retail trade and services, self-employed, and domestics were county residents. Generally speaking, some firms in these categories also offered seasonal employment.

Table 17.—Percentages of newly hired persons in Kootenai County who were and were not residents, 1966.

Employment category	County residents	Non-county residents
	(percent)	(percent)
Agriculture (except farming)	83	17
Lumber and timber products	83	17
All other manufacturing	85	15
Contract construction	61	39
Transportation, communications, utilities	69	31
Wholesale and retail trade	91	9
Finance, real estate, insurance	76	24
Service, self-employed, domestics	93	7
Government	57	43

EMPLOYMENT TRENDS AND SEASONALITY

The Labor Force

From 1961 to 1967 both total employment and the total labor force increased in Kootenai County. Table 18 presents average annual employment data for each category for the 7-year period. Average total employment increased by 1,073 employees over the 7-year period, while the average total labor force increased by 674 persons.

Regression analyses of trends and seasonal variation in total labor force and unemployment are more revealing than averages. Tables 19 and 20 summarize the results of analyzing monthly data for the study periods. Trend and seasonal variations are statistically significant in their relationships to the total labor force and unemployment. The total labor force increased by an estimated 9 persons per month over the study period, and increased by an estimated 1,072 persons in the summer months compared with the spring months. In the fall, winter and spring seasons, the total labor force increased in the first period and declined again in the two latter periods. Changes in unemployment were generally the reverse of those in the total labor force. Over the 84-month period unemployment declined at an estimated rate of 6.4 persons per month. In the summer months unemployment decreased by an estimated 402 persons, declined again in the fall by an estimated 296 persons and increased in the winter and spring by an estimated 497 and 201 persons, respectively.

This analysis indicates the degree to which the county is seasonal in terms of employment. Employment and the total labor force both increase in the summer and fall months, and decline in the winter and spring months. This is consistent with what one would expect in an area with so much employment concentrated in forestry, agricultural and recreational activities.

Table 18.—Trends in average annual employment, Kootenai County, Idaho, 1961-1967[1].

Employment category	1961	1962	1963	1964	1965	1966	1967
Agricultural	582	582	496	487	518	524	536
Self-employed and domestics	1797	1764	1826	1850	1734	1691	1529
Lumber and timber products	1428	1490	1484	1581	1503	1403	1327
Other manufacturing	192	202	259	322	363	399	382
Mining	4	2	6	0	6	6	7
Construction	132	193	209	277	248	272	307
Transportation		186	182	195	206	213	218
Communications and utilities	412	217	218	220	237	296	378
Wholesale and retail trade	1435	1437	1479	1599	1583	1677	1761
Finance, real estate, insurance	210	232	222	228	245	264	248
Services	867	899	953	953	1049	1192	1280
Government (includes education)	1463	1466	1440	1409	1454	1501	1623
Total employment	8522	8670	8774	9121	9146	9438	9595
Total labor force	9569	9616	9549	9840	9819	9983	10243

[1]Source: Department of Employment, State of Idaho.

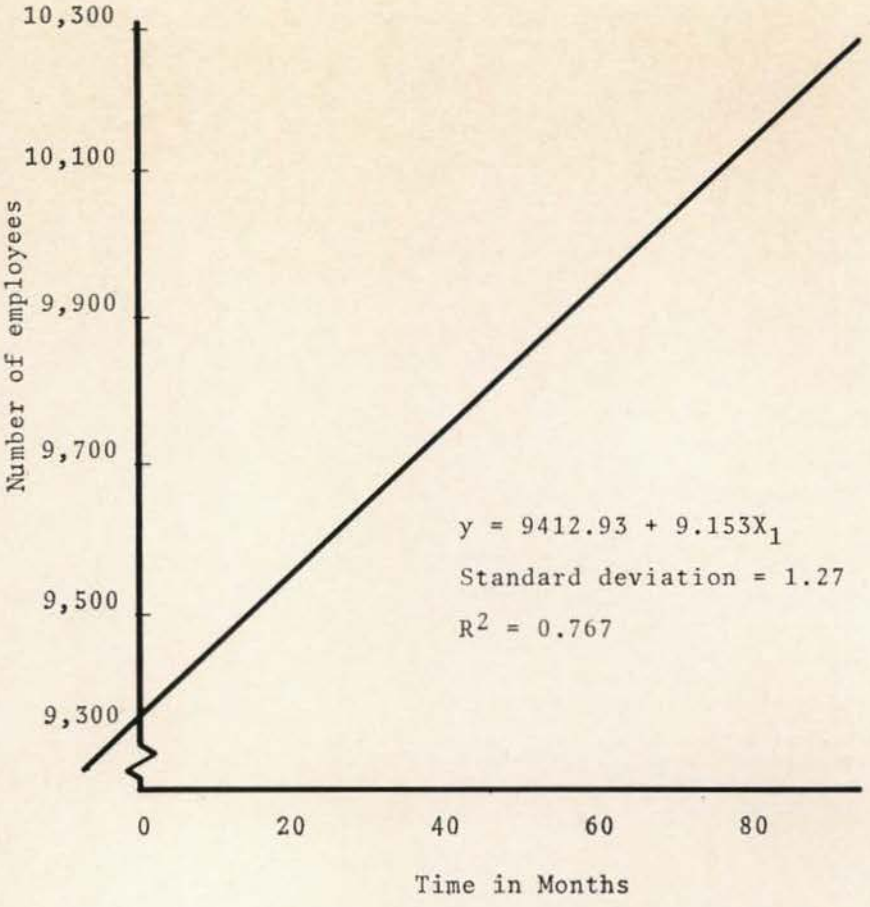

Fig. 2. Trend in total labor force, Kootenai County, 1961 - 67 (84 months).

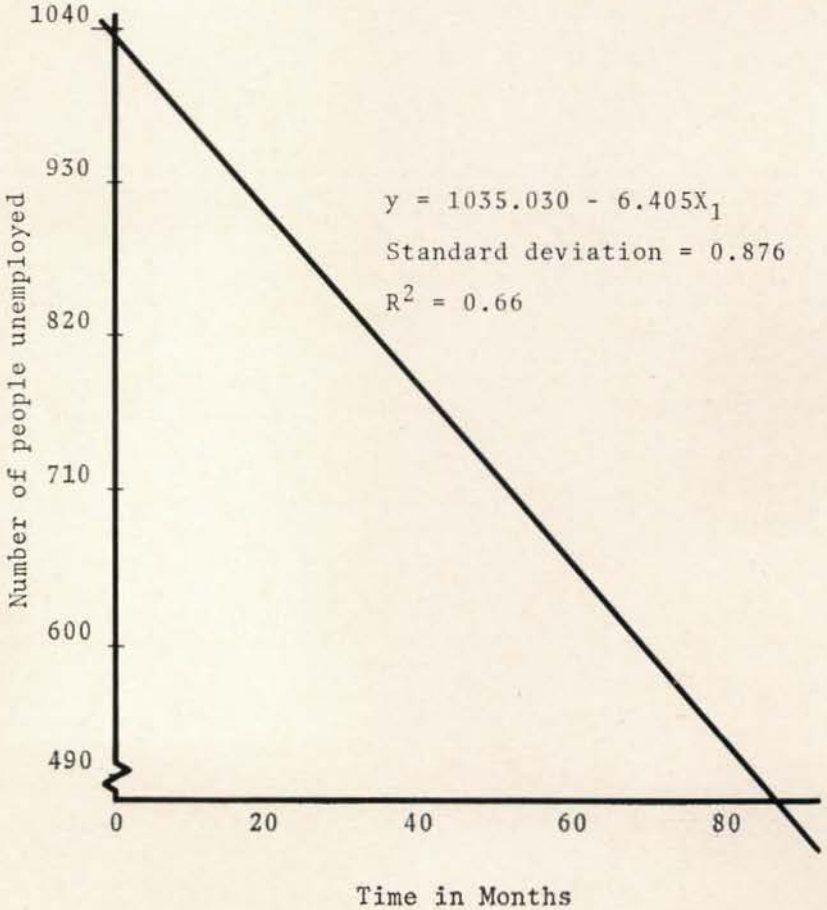

Fig. 3. Trend in unemployment, Kootenai County, 1961 - 67 (84 months).

Table 19.— Regression analysis of trends and seasonal variation in the total labor force and unemployment (summer and fall months) Kootenai County, Idaho, 1961-1967[1].

	Independent variables						Coefficient of determination
	Trend		Summer months[2]		Fall months[3]		
	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	
Total labor force	9.153*	1.272	1072.737*	75.298	304.422*	75.556	0.767
Unemployment	-6.409*	0.987	-402.501*	58.407	-269.798*	58.606	0.570

Table 20.—Regression analysis of trends and seasonal variation in the total labor force and unemployment (winter and spring months) Kootenai County, Idaho, 1961-1967[1].

	Independent variables						Coefficient of determination
	Trend		Winter months[4]		Spring months[5]		
	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	
Total labor force	8.711*	1.742	-811.939*	103.277	-568.752*	103.394	0.563
Unemployment	-6.405*	0.876	497.965*	51.910	201.370*	51.969	0.661

[1]Based on Department of Employment Data, [2]June, July, August
[3]September, October, November, [4]December, January, February
[5]March, April, May *Significant at the 1 per cent level

Figs. 2 and 3 summarize trends in the total labor force from 1961-1967 with seasonal variation held constant. The R^2 coefficient indicates the amount of variation in the dependent variables associated with the independent variables. While the total labor force has been increasing steadily over the period, unemployment has been decreasing steadily in spite of seasonal variations. Economic conditions in the county can be interpreted as "healthy" when the labor force can grow at a steady rate and unemployment decline at the same time.

Unemployment stood at 19.1 percent of the total labor force in February 1961, and had dropped to a low of 3.3 percent in August 1966. The average annual percent of the labor force unemployed, generally, has declined over the 1961-1967 period as is summarized below:

Year	Percent Unemployed
1961	10.9
1962	9.8
1963	8.3
1964	7.3
1965	6.8
1966	5.5
1967	6.3

While unemployment has been declining in Kootenai County, it has never been extremely low except during the late summer months. It is quite possible that it could reach relatively high levels again should a slight recession period return.

Trends and Seasonal Variation in Employment by Category

While total employment has been increasing and unemployment decreasing in the county from 1961-1967, not all employment categories have followed this pattern. Significant downward trends have occurred in total employment, in addition to the expected seasonal variations, in the agricultural and lumber and timber products categories (Tables 21 and 22). Employment in agriculture declined at an estimated rate of 0.7 employees per month and the lumber and timber products industry declined at an estimated rate of 1.3 employees per month over the 84-month period. All other employment categories showed significant increasing trends in employment. The wholesale and retail trade category showed the highest increase, an estimated 4.8 employees per month. Other manufacturing was relatively high with over 3 new employees estimated each month.

Seasonal variations in employment were significant in all employment categories. The seasonal pat-

Table 21.—Regression analysis of trends and seasonal variation in employment (summer and fall months) Kootenai County, Idaho, 1961-1967[1].

	Independent variables						Coefficient of determination
	Trend		Summer months[2]		Fall months[3]		
	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	
Agriculture	-0.729*	0.232	76.989*	13.705	-5.966	13.752	0.372
Lumber & timber products	-1.294*	0.451	248.210*	26.685	141.378*	26.766	0.548
Other manufacturing	3.191*	0.134	39.117*	7.915	17.448	7.942	0.884
Contract construction	2.181*	0.271	116.071*	16.049	66.719*	16.104	0.616
Transportation, communications, utilities	2.410*	0.181	44.759*	10.734	21.290	10.771	0.716
Wholesale and retail trade	4.794*	0.374	239.585*	22.107	107.725*	22.182	0.790
Finance and real estate	0.786*	0.082	18.820*	4.839	6.222	4.856	0.582
Services, self-employed, domestics	2.687*	0.679	471.043*	40.188	147.981*	40.325	0.663
Government	1.735*	0.399	208.377*	23.599	90.078*	23.680	0.560

[1]Based on Department of Employment Data
[2]June, July, August
[3]September, October, November
*Significant at the 1 percent level

Table 22.—Regression analysis of trends and seasonal variation in employment (winter and spring months) Kootenai County, Idaho, 1961-1967[1].

	Independent variables						Coefficient of determination
	Trend		Winter months[2]		Spring months[3]		
Employment categories	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	Regression coefficient	Standard deviation	
Agriculture	-0.775*	0.261	-53.902*	15.502	-17.486	15.519	0.198
Lumber & timber products	-1.350*	0.473	-225.033*	28.046	-165.002*	28.078	0.502
Other manufacturing	3.178*	0.138	-30.447*	8.185	-26.221*	8.194	0.876
Contract construction	2.161*	0.266	-120.315*	15.798	-62.630*	15.816	0.629
Transportation, communications, utilities	2.398*	0.184	-38.108*	10.938	-28.441*	10.950	0.706
Wholesale and retail trade	4.730*	0.403	-220.707*	23.884	-127.120*	23.911	0.755
Finance and real estate	0.780*	0.083	-16.579*	4.933	-8.514	4.939	0.567
Services, self-employed, domestics	2.528*	0.779	-421.558*	46.161	-198.744*	46.214	0.556
Government	1.669*	0.436	-172.802*	25.861	-126.181*	25.891	0.473

[1]Based on Department of Employment Data
[2]December, January, February
[3]March, April, May
*Significant at the 1 percent level

tern generally was the same, with increasing employment in summer and fall months, and declining employment in winter and spring months. Variation was greatest in the services, self-employed, and domestics employment category (which includes many recreation facilities) where an estimated 470 new employees were added in the summer months and 421 lost in winter months. Seasonal variations were also pronounced in the lumber and timber products, contract construction, wholesale and retail trade and government employment categories. Seasonal variations were great in agricultural, forestry and recreational areas partly because such a large proportion of employment was in these areas, and partly because other categories supported these activities in a secondary way (especially the wholesale and retail trade category). Certainly seasonality in employment is pronounced throughout the county.

Agricultural Employment

Employment in agriculture has been shown to be declining at the rate of 0.7 persons per month. Thus, an estimated 61 fully employed persons left agricultural employment from 1961 to 1967. The following section will attempt to show the employment categories these people are moving to after they leave agriculture. This change in the number of persons involved in agriculture is having a profound effect on the structure of the industry in the county.

In Table 23 census data are used to illustrate how the structure of the industry changed from 1959 to 1964. During the 1959-1964 period the county lost 127 farms. The majority of the farms lost were those having gross sales less than $20,000. Farms with gross sales in excess of $20,000 increased during the period, as did part-time farms. Thus, farmers in Kootenai County are either operating larger farms or are seeking other employment off the farm. The number of part-time retirement farms also increased between census years. Part-time farm operators are probably

Table 23.—Changes in the structure of the farm population, Kootenai County, Idaho, 1959-1964[1]

Type of farm	Number of farms		Change in the number of farms per year
	1959	1964	
Total farms	992	865	-25.4
All commercial farms	597	392	-41.0
Class I-II farms[2]	57	70	+2.6
Class III-IV farms[3]	540	322	-43.6
All other farms	428	473	+9.0
Part-time farms[4]	347	370	+4.6
Part-time (retirement)	81	102	+4.1

[1]1964 Census of Agriculture
[2]Sales over $20,000
[3]Sales from $50 - $19,999
[4]Operator working off farm 100 days or more, sales $50 - $2,499.

earning as much, if not more, income off the farm as from it. Preliminary 1964 census data indicated the value of all farm products sold was $4,560,046, while income from sources other than farm operated was $3,416,950.

Employment in agriculture is not only declining but is also seasonal. An estimated 77 employees are added during the summer months, and 54 lost during the winter months. Employment in agriculture is low when compared to total employment—about 5.6 percent. The number of persons added in the summer months is also small. For example, while 77 persons are added to agricultural employment, in the summer an estimated 471 are added in the services, self-employed and domestics category.

What becomes of those persons who leave agriculture? Where do they find future employment? Are they able to find employment in the county or must they go outside the county?

Table 24.—Probability matrix, labor movements, Kootenai County, 1966

Employment categories	A	B	C	E	F	G	H	I	J	K	L[1]	Total
A* Enter labor force	.10336	.14987	.05168	.13695	.06201	.13437	.01809	.07752	.26098	.00517	0	1.0000
A Agriculture	.17143	.02857	.02857	0	0	.02857	0	0	0	.22857	.51429	1.0000
B Lumber and timber	0	.19448	.00138	.00966	0	0	0	0	.00138	.31448	.47862	1.0000
C Other manufacturing	0	.13445	.22689	0	0	.01681	0	.05042	.08404	.05882	.42857	1.0000
E Contract construction	0	0	.00420	.05883	0	.00420	0	0	.00840	.62605	.29832	1.0000
F Transportation, communication and utilities	0	.06667	0	.13333	0	.10000	.03334	0	0	.53333	.13333	1.0000
G Wholesale and retail trade	0	.03298	.03846	0	0	.28297	.01099	.00824	.01648	.14560	.46428	1.0000
H Finance and real estate	0	0	0	0	.09302	0	.23256	.13954	0	.04651	.48837	1.0000
I Services, self-employed and domestics	0	.00709	.13475	.01418	0	.00355	.00355	.30497	0	.16312	.36879	1.0000
J Government	0	.07870	.05093	.03241	0	.06944	.00463	.00926	.14352	.10648	.50463	1.0000
K Unemployment	.01196	.08198	.05295	.02733	.04099	.28523	.00939	.33390	.06576	.00939	.08113	1.0000

[1]Leave Labor Force

LABOR MOVEMENTS

Survey Results

The firms sampled were asked how many people they hired in 1966, whether or not each new employee was from Kootenai County and the nature of the employee's previous employment. The results of this survey are summarized in Table 24 in terms of probabilities which represent the actual labor movements in 1966. Each number represents the probability of someone moving from an employment category on the left hand side of the page to some other category indicated by the letters of the first row. For example, the probability of someone moving into agriculture from outside the labor force was approximately one-tenth (.10336, the decimal located in the first column and first row). The probabilities in Table 24 represent only those people who changed jobs during 1966.

Employees previously employed in agriculture went to work for employers in lumber and timber products, other manufacturing or wholesale and retail trade. Or they became unemployed or left the labor force in Kootenai County. According to sample data, about half left the county labor force. These persons may have returned to school, retired or found employment outside the county. The table represents the first move away from agriculture, but not any subsequent movements. Looking at column A (Agriculture) the reader will note that movements into agriculture are primarily from persons located outside the county, within agriculture in the county and from unemployment.

Markov Analysis

Table 24 presents sample data in matrix form commonly referred to as a "transition" matrix, or the probability of moving from one employment category to another (reading horizontally). The transition matrix for a regular Markov Chain is called a regular transition matrix, and the above matrix was found to

Table 25.—Estimates of alpha based an empirical data and Markov anaylsis[1].

Employment categories	Empirical observations or sample data	Markov chain analysis (P7)
Agriculture	.018	.016
Lumber and timber products	.095	.064
Other manufacturing	.048	.043
Contract construction	.033	.035
Transportation, communications, utilities	.021	.026
Wholesale and retail trade	.141	.127
Finance and real estate	.010	.042
Services, self-employed, domestics	.144	.141
Government	.062	.050
Unemployment	.152	.154
Leave labor force	.276	.302
Totals	1.000	1.000

[1]See: Kemeny and Snell (9).

be regular (i.e., p^n had no zero entries). The transition matrix (P) was found to approach a probability matrix (A), and for all practical purposes did so in five years (P^5). Table 25 shows the probability vector of matrix A after 7 years and this vector is compared to the empirical results observed from the sample. In most cases the empirical results and the results from the Markov analysis were quite close. It seems reasonable then to assume that the Markov analysis does closely approximate what is happening in terms of labor movements. This does not imply that some exogenous factor might not alter the picture considerably (e.g., the introduction of a large new industry into the county).

The empirical results of Table 24 represent what occurred in one year (1966), while the Markov analysis predicts what the situation will be like 7 years later. Additional analysis may be gleaned from the transition matrix in terms of a mean passage time matrix (the length of time from state s_i to a state s_j for the first time), and the standard deviations for the mean passage time matrix. These matrices reveal some interesting information about labor movements within the county and movements out of the county with respect to each of the employment categories.

Mean First Passage Time Analysis

Tables 26 and 27 present the mean first passage time matrix and the standard deviations for the estimated mean times respectively. To interpret Table 26, consider the second row representing agriculture. If someone is employed in agriculture in 1966, the mean number of years before he moves to employment in the lumber and timber category is 16. Thus, the mean number of years before moving to other employment in agriculture is 59; before moving to other manufacturing, 22; to contract construction, 28; to transportation, communications and utilities, 38; to wholesale and retail trade, 8; to finance and real estate, 24; to services, self-employed and domestics, 8; to government, 19; to unemployment, 6; and to leave the labor force, 2 years. From the mean passage times for agriculture (column A), one might conclude that a move is indeed a once-in-a-lifetime proposition. The remaining sectors in Kootenai County may be similarly interpreted by reading across the table.

Another interesting way to think of Table 26 is to deduct the mean passage time for movement from one category to another from retirement age to estimate the latest age at which a person might consider switching occupations. For example, a farmer might consider becoming employed in wholesale and retail trade or the service category at as late an age as 57, but once past the age of 41 he is unlikely to become employed in the finance and real estate sector.

Notice also column L (leave the labor force). It appears that opportunities outside the county come more often (every 2 to 4 years) than do opportunities to change employment between categories within the county. It has been shown that county employment has been growing the past 84 months, but based on this particular analysis it is far from a boom type of situation which might open employment opportunities to all comers.

Table 27 shows the standard deviation for each mean passage time in Table 26. Roughly two-thirds of the estimated labor movements should fall between plus or minus one standard deviation of each mean. In other words, if someone is currently employed in agriculture the mean time for him to move into the lumber and timber category is 16 years, and two-thirds of such movements would take place within plus or minus 15.0 years of this mean.

The data presented in the above matrices should not be judged as entirely conclusive, for they could be improved in a number of ways. They do serve, however, to illustrate the relative ease or difficulty one may encounter in changing occupations in Kootenai County. The above estimates might be im-

Table 26.—Mean first passage time matrix, Kootenai County, 1966[1].

Employment categories	A	B	C	E	F	G	H	I	J	K	L[2]
A* Enter labor force	62	14	21	24	36	8	24	8	14	7	4
A Agriculture	59	16	22	28	38	8	24	8	19	6	2
B Lumber and timber	69	13	23	28	38	8	24	8	19	5	2
C Other manufacturing	69	14	18	23	38	8	23	8	18	7	2
E Contract construction	71	16	23	27	38	8	24	8	18	3	2
F Transportation, communications and utilities	70	15	23	24	39	8	24	9	19	4	3
G Wholesale and retail trade	71	16	22	28	38	6	24	8	19	6	2
H Finance and real estate	71	17	24	28	34	8	18	7	20	7	2
I Services, self-employed, domestics	71	16	21	28	37	8	23	6	20	6	2
J Government	70	15	22	27	38	8	24	8	17	6	2
K Unemployment	70	15	22	27	36	7	22	6	19	6	3

[1]Rounded to the nearest year
[2]Leave labor force

Table 27.—Standard deviations for the first passage times, Kootenai County, 1966[1].

Employment category	A	B	C	E	F	G	H	I	J	K	L
A* Enter labor force	63.7	14.8	21.8	26.4	36.4	7.0	21.9	6.8	17.5	5.4	1.8
A Agriculture	68.2	15.0	21.8	26.6	36.4	6.9	21.9	6.8	18.1	5.4	1.9
B Lumber and timber	69.1	14.7	21.8	26.6	36.4	6.9	21.9	6.8	18.1	5.3	1.7
C Other manufacturing	69.1	14.8	21.4	26.6	36.4	6.9	21.9	6.8	18.1	5.4	1.8
E Contract construction	69.1	15.0	21.8	26.6	36.4	6.9	21.9	6.8	18.1	4.5	1.8
F Transportation, communications, utilities	69.1	14.9	21.8	26.4	36.4	6.9	21.9	6.8	18.1	4.7	1.8
G Wholesale and retail trade	69.1	15.0	21.8	26.6	36.4	6.6	21.9	6.8	18.2	5.2	1.9
H Finance and real estate	69.1	15.0	21.9	26.6	36.3	6.8	21.2	6.8	18.2	5.3	1.8
I Services, self-employed, domestics	69.1	15.0	21.8	26.6	36.4	6.9	21.8	6.5	18.2	5.4	1.8
J Government	69.1	16.0	21.8	26.6	36.4	6.9	21.9	6.8	18.0	5.4	1.7
K Unemployment	69.1	15.0	21.9	26.6	36.4	6.8	21.8	6.7	18.2	5.3	1.9

[1]Rounded to the nearest tenth of a year

proved by a more complete initial sample, a sample taken during the time period under consideration or by observing movements over a longer period of time. Employment categories may also be further broken down for more precise estimates, even to the point of studying movements between actual positions. Regardless of the improvements that might be made, this study does reveal that the Markov method is quite suitable for analyzing labor mobility in areas like Kootenai County.

The results of this study indicate definite movements away from agriculture and forestry in terms of county employment. Other employment categories in the county are growing. However, their manpower needs are not necessarily satisfied by persons from agriculture and forestry. Certain employment areas are growing faster than others according to the analysis of employment data. These trends have important implications to vocational schools that wish to develop programs in the county, investors seeking opportunities for available funds and county planners that seek to enhance economic development. This study should provide some additional insight to aid persons making decisions about such programs.

SUMMARY AND CONCLUSIONS

The combination of the changing farm structure in agriculture and the decline in the number of persons employed in wood's work and in the lumber and timber industry has caused many persons to seek employment outside these areas in the cut-over regions of the United States. Kootenai County was selected for study not only because it was located in the cut-over area, but also because it offered a number of opportunities for employment both in the county and in an adjacent area.

Employee movements were observed in Kootenai County for 1966. Certain characteristics and trends were also observed from the Idaho Department of Employment data for 1961 to 1967. Some of the more important results and their probable implications are as follows:

The number of commercial farms with sales of less than $20,000 has been decreasing and will probably continue to decrease in the future, while the number of commercial farms with sales in excess of $20,000 and the number of part-time farms will probably continue to increase. It was estimated that Kootenai County could support about 443 full-time farms (about half the current number) under current economic conditions. Consequently, farm people will probably continue to seek jobs outside of agriculture when they leave the farm or become part-time farmers. This situation will increase pressure for jobs both in rural communities and in the cities.

From 1961 to 1967 total employment in the county increased by 1,073 persons, while the total labor force increased by some 674 persons. For the 84-month period the total labor force grew by an estimated 9 persons per month. The question is, where did these people come from and where did they find jobs? Prior to 1967 unemployment was observed to fall and employment was also observed to be distinctly seasonal. Generally, employment rose during the summer and fall months and fell during the winter and spring months. The lumber and timber category, forestry and the recreation-related businesses are most likely the leaders in seasonal employment. These also have secondary impacts on all other employment categories.

From 1961 to 1964 employment declined by .7 employees per month in agriculture and 1.3 em-

ployees per month in lumber and timber products. All other employment categories grew significantly during this period. The most rapid rates of growth in terms of new employees were found in the wholesale and retail sector and the other manufacturing sector. Wholesale and retail trade added an estimated 4.7 employees per month, while the other manufacturing sector added an estimated 3.2 employees per month for 84 months.

Persons leaving agriculture were observed to move into 6 of the 11 categories studied. They went into other employment in agriculture, lumber and timber, other manufacturing, wholesale and retail trade, unemployment or they left the labor force. About 50 percent left the labor force. They went back to school, became employed outside the county or retired. These data indicated these persons may also be moving to the cities for jobs, which in turn may be adding (directly or indirectly) to our urban problems.

Based on the data collected in Kootenai County a Markov Chain analysis was made to describe and project labor movements in the county. Results of this analysis indicated that a regular Markov Chain did describe these movements quite well. Observed and predicted probabilities of movements remained in close agreement.

Based on probabilities from the Markov analysis it was projected that the mean passage time in moving from agriculture to another job in agriculture was 59 years; to lumber and timber products, 16 years; to other manufacturing, 22 years; to contract construction, 28 years; to transportation and utilities, 38 years; to finance and real estate, 24 years; to wholesale and retail trade, 8 years; to services, 8 years; to government, 19 years; to unemployment, 6 years; to leave the labor force, 2 years. These projections reflect the apparent greater number of job opportunities outside the county than within the county, and the probable situation that going into farming is a once-in-a-lifetime proposition for the average person.

The estimated mean passage time matrix also provides an idea of what the age limit is for a person to move from one category to another. Someone engaged in agriculture could conceivably change to the wholesale and retail trade sector or service sector as late as age 57. However, once past the age of 41 someone engaged in agriculture is not likely to shift to the finance and real estate sector.

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Appendix A

KOOTENAI COUNTY QUESTIONNAIRE

A. Questionnaire Information

1. Questionnaire number _____
2. Date conducted _____
3. Interviewer _____
4. Employment category _____

B. General Respondent Information

1. Name of company _____
2. Address _____
3. Person interviewed and title _____
4. What are the primary products of your company?

Primary products	**Percentage of sales**

C. Information About New Employees Hired in 1966

1. Please provide the following information about each of the new employees hired by your firm last year:

Individual number	Was the position temporary or permanent? (T or P)	Did he live in Kootenai County before you hired him? (yes or no)	Previous employment (Type and company)	Present type of work	Was it necessary for you to train the individual? (yes or no)	How long was the training session? (specify units)

2. Does your company have any **general** limitations on the type of individuals you hire with respect to:

	Yes	**No**	**If yes, what?**
(a) Education or training			
(b) Physical handicaps			
(c) Work experience			
(d) Other _____			

3. Does employment with your firm's operation in Kootenai County tend to be seasonal?

No _____ Yes _____ If yes, answer (a) and (b) below.

(a) How many months of the year does your firm operate? _____

(b) What are the usual number of employees during:

(1) Months of peak production _____.

(2) Months during the "off season _____.

D. Characteristics of the Firm

1. Form of business organization

   (a) Single proprietorship _____ (c) Corporation _____

   (b) Partnership _____ (d) Other (specify) _____

2. What types of positions does your firm employ people for in Kootenai County? (List types of jobs)

3. Is obtaining people with the desired training and experience a problem? Please explain:

4. What is the average annual increase (or decrease) of your firm in terms of the addition of full-time employees in the last 5 years?

   _____ (Number of additional people employed)

   (a) Will this rate of growth be about the same in the foreseeable future? Why?

   (b) What plans does your firm have to expand the number of its employees in Kootenai County in the future?

E. Location of New Businesses

1. What types of new businesses do you expect to see located in Kootenai County in the future? Why?

2. Do you consider the following as advantages as far as the location of new businesses in Kootenai County is concerned?

	Yes	No
(a) Tax rate		
(b) Educational system		
(c) Recreational facilities		
(d) Communications and transportation facilities		
(e) Quality of the labor force		
(f) Other _____		

3. What resources were instrumental in attracting your firm to locate in Kootenai County? (Please specify)

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