

Methodology

Kansas Job Vacancy Survey

Second Quarter 2016

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Sample Selection

Information published on the following web site was compiled from the 2016 Kansas Job Vacancy Survey. These survey results came from a selected sample of 3,102 firms from the Kansas Quarterly Census of Employment and Wages (QCEW) program. The QCEW program maintains a quarterly database of employment from employers subject to Kansas Employment Security Law. The sample was selected from employer information taken from the QCEW records for the second quarter of 2015. It was stratified by industry super sector and establishment size class to represent all employers in each of the five local areas throughout the state of Kansas.

The sample was drawn by Labor Market Information Services (LMIS) staff using the Complex Sampling Module of the SPSS software. The sample was selected randomly without replacement within strata. This provides the foundation for estimating job vacancies in Kansas.

The sample size was determined by calculating the least number of establishments that satisfy two conditions: 1) the sample size for each stratum equaled at least 3 percent of the stratum population, with a minimum sample size of 5 establishments, unless the stratum has less than 5 establishments, in which case all establishments in the stratum are selected and 2) all establishments that employ 250 employees or more are included in the sample. The resulting sample size provided a 5.73 percent relative standard error (RSE). RSE is defined as the standard of error divided by the estimated mean of employment. It specifies the percentage of error that can be tolerated.

The population from which the survey sample was selected included all employers in Kansas who employed at least one employee and included private employers, federal government, state government, and local government employers.

Firms excluded from the sampling process included those in private households, temporary help services, professional employer organizations, and those firms with no employees.

The sample was stratified by geographical area, representing each of the five local areas considered as planning regions under the Workforce Innovation and Opportunity Act (WIOA). Units were selected using the county information maintained by the QCEW program. Under this program, employers report information by location, therefore allowing employers with multiple work sites to be identified in each of the counties in which they are doing business. Some units were not identified to one specific location or county, and therefore were not selected in the sampling process.

Four firm sizes were used to stratify the sample, determined by the highest monthly number of employees reported during the second quarter of 2014 to the QCEW Program. Size classes were classified as follows: Very Small (1-4 employees), Small (5-49), Medium (50-249) and Large (250 or more).

The sample was stratified by eleven super sectors. Each super sector represents one or more of the twenty major industry sectors, defined by the 2012 North American Industry Classification System (NAICS).

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Survey Period

The survey was conducted over a three-month period from April 1, 2016 to June 30, 2016, representing the second quarter of 2016. A postcard was mailed to all establishments in the sample the first week of April and was followed up in one of three ways depending upon whether or not an e-mail contact was available. Up to two additional postal mailings of paper survey forms were sent to very small, small, and medium sized establishments, while up to three e-mail requests were sent to all establishments that had an e-mail address on record. For large establishments, LMIS staff looked online for their openings and made follow-up phone calls for additional information, if necessary. The mailings and e-mails were sent only to the establishments that had not yet responded to the survey at that time. Establishments that did not respond to any of the mailings or e-mails were either contacted by telephone or their openings were obtained from their website during the month of June. Respondents had the option of responding to the survey via return mail, e-mail, fax, telephone or Internet.

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Survey Questions

Employers were asked to provide information on current job vacancies at the time of the survey. Therefore, these estimates are considered point-in-time estimates and may include seasonal variations in the labor market.

Survey respondents were asked to report job titles and the number of job vacancies for each respective job title. For each job title, they also were also asked to provide educational requirements, wages and benefits offered, and the length of time job vacancies had been open.

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Survey Responses

The original sample included 3,102 firms. During the survey period, a total of 98 sampled units across the state were removed from the survey and not included in the response rate calculations due to the following reasons:

- 68 units were found to be out of business
- 16 units no longer had employees in Kansas
- 11 units were found to be out of scope of the survey
- 3 units refused the survey

Nineteen sampled units were found to have been assigned the wrong strata due to having an incorrect NAICS code or county location listed. There were moved into the correct strata and included in the response rate.

The preferred method of choice to respond to the survey was by returned mail (704 responses) followed by our website (365 responses). We secured 254 responses via non-response phone calls made during the month of June and 935 responses by obtaining openings from company websites. Each of the remaining response methods accounted for only small proportions of the total number of responses collected. Information regarding the response methods participants utilized is provided in [Table A](#).

The desired response rate was 65 percent for each local area. Efforts were also made to reach the desired response rate of 65 percent in each industry super sector and in each size class. Follow-up telephone calls were made during the final month of the survey collection period to secure critical non-responses identified within each local area for certain industry super sectors and size classes.

Usable responses were received from 2,232 employers contributing to an overall participation rate of 74.3 percent. Response rates for all 208 strata were 65 percent or higher ensuring the reliability of the data. Information regarding the survey sample and response rates for each local area is provided in [Table B](#). Additional details by industry super sector and size class are provided in [Table C](#) and [Table D](#).

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Job Titles (Occupational Titles)

Employers were asked to provide the job titles that were currently open-for-hire. LMIS staff then reviewed these job titles and matched them to a corresponding occupation using the 2010 Standard Occupational Classification (SOC) system. SOC is a four-tiered structure with 840 detailed occupations within 22 major civilian occupational groups. For the purposes of this study, occupational information is presented for both the major occupational groups and the detailed occupations.

In the case of vague titles, such as "seasonal worker," employers were contacted to provide more information to facilitate assigning the appropriate code. Questionable titles that could not be linked to a specific SOC code, mainly due to lack of detailed information, were placed in a general occupational category.

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Estimation

Estimates are prepared and published for the state of Kansas and each local area. In order to produce estimates, each employer was assigned a weight relative to other employers in the same local area, industry super sector, and size class. The weights were derived from the total number of employers in a given stratum as a percentage of the number of usable responses from that stratum. The weights were assigned after data collection was complete and were based upon response status. These weights were used to estimate the number of job vacancies for each occupation. Outliers were identified and the number of job vacancies were adjusted where necessary.

In some cases, additional information such as education requirement or length of recruiting period was not reported or was not usable in the final analysis. Therefore, the data may not add up to 100 percent.

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Average Lowest Wage Offer

The respondents were asked to provide the expected compensation for each job opening. In many cases, the average lowest wage offer may vary depending on the experience of the candidate; therefore, employers had the option to provide a wage range. This provided the availability of two sets of average wages, lowest and highest. In most cases, the published results represent the lowest average wage offer.

The majority of the results presented in the published tables include average wage offers as an hourly wage. Annual compensation for full-time positions reported in the survey was converted to an hourly rate for the purposes of this study. This was determined by dividing the annual compensation by 2,080 hours. There is a small group of occupations, primarily in teaching professions and coaching, identified by the U.S. Bureau of Labor Statistics' Occupational

Employment Survey (OES), where the standard work-year assumption is not valid. Therefore, the wages for these occupations were excluded from the analysis.

The average hourly wage offer is based upon the responses employers provided to the survey and does not reflect information from other sources or wages paid for currently filled positions. The average wage offer is the average of the wage information reported by employers. It does not include wage information for any occupations paid by special pay arrangements. For example, some truck drivers are paid a certain amount per load and some part-time post-secondary teachers are paid per credit hour.

The average wage offer may not include all monies received from tips because the amount of tips received is unknown. All wages reported below the federal minimum wage, including those that indicated tips were also received, were adjusted to \$7.25 an hour when it was stated that tips were included and otherwise were excluded from the analysis. In these cases, \$7.25 was used to calculate the average lowest and highest wage offer.

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Job Vacancy Rate

The job vacancy rate is a computation of the number of job vacancies as a percent of all positions filled and vacant. The most current employment data from the Estimates Delivery System (EDS) was used to assist with the calculation of the job vacancy rates by occupation. EDS is a system for producing occupational wage and employment statistics from the results of the annual OES Survey. EDS is particularly useful because it allows for the calculation of employment within occupational groups and detailed occupations for the state and for local areas. The occupational employment data used for this study was secured from the 2016 Kansas Wage Survey.

Job vacancy rates were calculated by industry super sector as well. Employment estimates from the QCEW program, described in the Sample Selection section of this Methodology Report, were used to calculate job vacancy rates by industry super sector. The 2015 average annual employment by super sector was used to calculate the job vacancy rates.

The employment numbers used in calculating the job vacancy rates are from different sources and time periods; therefore, the job vacancy rate by occupation and industry super sector may differ slightly.

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Comparing Results from Previous Annual Studies

Previous job vacancy studies (2004 - 2006) were stratified by industry sector. In an effort to continually improve the methodology and lower the survey cost, beginning in 2007 the study was stratified by industry super sector. Beginning in 2014, all government owned establishments regardless of NAICS code were placed in the Government super sector to provide a comparison of public sector vs. private sector openings and to be more aligned with other data published by LMIS. Due to this change in methodology, comparison of estimated job vacancies with previous surveys should be made with caution.

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Methodology Tables

Table A
Survey Response Method

Response Method	Percent
Internet Research by LMIS	39.8%
Postal mail	29.9%
Internet	15.5%
Non-Response Telephone Call	10.8%
E-mail	1.6%
Fax	1.3%
Telephone	1.1%

Note: Percentages may not add to 100% due to rounding

Source: Kansas Department of Labor, Labor Market Information Services, Second Quarter 2016 Job Vacancy Survey

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Table B
Survey Sample by Area

Area	Number of Establishments, 2nd Quarter 2015*	Survey Sample	Usable Responses	Response Rate
Statewide	74,763	3,004	2,232	74.3%
Local Area I	17,938	665	507	76.2%
Local Area II	13,461	554	415	74.9%
Local Area III	22,552	902	637	70.6%
Local Area IV	14,123	579	433	74.8%
Local Area V	6,689	304	240	78.9%

** 2nd Quarter 2015 number of establishments does not include those establishments with zero employees.*

Source: Kansas Department of Labor, Labor Market Information Services, Second Quarter 2016 Job Vacancy Survey

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Table C
Statewide Sample by Super Sector

Industry Super Sector	Number of Establishments, 2nd Quarter 2015*	Survey Sample	Usable Responses	Response Rate
Total, Statewide	74,763	3,004	2,232	74.3%
Natural Resources and Mining	2,486	103	79	76.7%
Construction	6,471	214	154	72.0%
Manufacturing	2,954	206	174	84.5%
Trade, Transportation, and Utilities	18,298	637	448	70.3%
Information	1,042	82	71	86.6%
Financial Activities	7,899	272	197	72.4%
Professional and Business Services	12,350	457	317	69.4%
Education and Health Services	7,588	319	231	72.4%
Leisure and Hospitality	6,361	205	145	70.7%
Other Services	4,632	165	118	71.5%
Government	4,682	344	298	86.6%

* 2nd Quarter 2015 number of establishments does not include those establishments with zero employees.

Source: Kansas Department of Labor, Labor Market Information Services, Second Quarter 2016 Job Vacancy Survey

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Table D
Statewide Sample by Size Class

Size Class	Number of Establishments, 2nd Quarter 2015*	Survey Sample	Usable Responses	Response Rate
Total, Statewide	74,763	3,004	2,232	74.3%
Very Small (1-4 Employees)	36,837	1,087	771	70.9%
Small (5-49 Employees)	33,085	1,008	716	71.0%
Medium (50-249 Employees)	4,200	273	231	84.6%
Large (250 Employees or More)	641	636	514	80.8%

* 2nd Quarter 2015 number of establishments does not include those establishments with zero employees.

Source: Kansas Department of Labor, Labor Market Information Services, Second Quarter 2016 Job Vacancy Survey

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[Occupational Groups & Descriptions](#)

[2016 JVS Form](#)

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