

## **Methodology**

### **Kansas Job Vacancy Survey**

### **Second Quarter 2014**

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#### **Sample Selection**

Information published on the following web site was compiled from the 2014 Kansas Job Vacancy Survey. These survey results came from a selected sample of 3,035 firms from the Kansas Quarterly Census of Employment and Wages (QCEW) program. The QCEW program maintains a quarterly database of non-agricultural 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 2013. 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 5.91 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, i.e. plus or minus 10.0 percent of the actual number of job vacancies.

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 Investment Act (WIA). 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 2013 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, 2014 to June 30, 2014, representing the second quarter of 2014. 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 education 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 3,035 firms. During the survey period, a total of 71 sampled units across the state were found to be out of business, while 16 sampled units were found to be out of scope (i.e. the units changed local areas, industry super sectors, or size classes). The out of business units were removed from the sample and were not included in the calculation of the response rates while the out of sample units 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 (629 responses) followed by our website (366 responses). We secured 484 responses via non-response phone calls made during the month of June and 720 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 2,225 employers contributing to an overall participation rate of 75.1 percent. Response rates for all 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 used the O\*Net-SOC Autocoder™ developed by R.M. Wilson Consulting, Inc. to review these job titles and matched them to a corresponding occupation using the 2010 Standard Occupational

Classification (SOC) system. LMIS Analysts then reviewed the output from the coding software and made corrections as necessary. The 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 at both the major occupational group and detailed occupational levels.

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**

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 was 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, data may not add up to 100 percent.

Estimates were prepared and published for statewide Kansas and for each of the five local areas.

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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 since the amount of tips received is unknown. All wages reported below the federal minimum wage were adjusted to \$7.25 an hour when it was stated that tips were included and otherwise were excluded from the analysis. This was the federal minimum wage at the time of the survey and it applies to particular occupations such as a waitress, where the compensation reported by a respondent was \$4.50 an hour, plus tips. 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 published second quarter 2013 wage survey data.

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 2013 average annual employment by super sector was used to calculate the job vacancy rate by industry super sector.

The employment numbers used in calculating the job vacancy rates are from different sources and different 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. Starting in 2014, all government owned establishments regardless of NAICS code were placed in the Government super sector to provide a better look at 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
Postal mail	27.2%
Fax	2.4%
Telephone	1.8%
Internet	15.8%
E-mail	0.7%
Non-Response Telephone Call	20.9%
Internet Research by LMIS	31.1%

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

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**Table B**  
**Survey Sample by Area**

Area	Number of Establishments, 2nd Quarter 2013*	Survey Sample	Usable Responses	Response Rate
<b>Statewide</b>	<b>73,534</b>	<b>2,964</b>	<b>2,225</b>	<b>75.1%</b>
Local Area I	17,973	668	511	76.5%
Local Area II	13,227	547	417	76.2%
Local Area III	21,866	882	630	71.4%
Local Area IV	13,803	560	418	74.6%
Local Area V	6,665	307	249	81.1%

\* 2nd Quarter 2013 number of establishments does not include those establishments with zero employees.

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**Table C**  
**Statewide Sample by Super Sector**

Industry Super Sector	Number of Establishments, 2nd Quarter 2013*	Survey Sample	Usable Responses	Response Rate
<b>Total, Statewide</b>	<b>73,534</b>	<b>2,964</b>	<b>2,225</b>	<b>75.1%</b>
Natural Resources and Mining	2,328	105	82	78.1%
Construction	6,275	207	156	75.4%
Manufacturing	2,925	202	160	79.2%
Trade, Transportation, and Utilities	18,267	631	439	69.6%
Information	1,167	93	76	81.7%
Financial Activities	7,731	265	191	72.1%
Professional and Business Services	11,996	440	317	72.0%
Education and Health Services	7,310	310	238	76.8%
Leisure and Hospitality	6,159	198	159	80.3%
Other Services	4,651	168	126	75.0%
Government	4,725	345	281	81.4%

\* 2nd Quarter 2013 number of establishments does not include those establishments with zero employees.

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**Table D**  
**Statewide Sample by Size Class**

Size Class	Number of Establishments, 2nd Quarter 2013*	Survey Sample	Usable Responses	Response Rate
<b>Total, Statewide</b>	<b>73,534</b>	<b>2,964</b>	<b>2,225</b>	<b>75.1%</b>
Very Small (1-4 Employees)	36,213	1,086	759	69.9%
Small (5-49 Employees)	32,584	1,001	790	78.9%
Medium (50-249 Employees)	4,131	271	233	86.0%
Large (250 Employees or More)	606	606	443	73.1%

\* 2nd Quarter 2013 number of establishments does not include those establishments with zero employees.

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**Helpful Links**

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[Industry Super Sectors & Descriptions](#)

[Occupational Groups & Descriptions](#)

[2014 JVS Form](#)

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