W. Frank Barton School of Business

Center for Economic Development and Business Research

NE Kansas Logistics Cluster – Statewide Impact

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Executive summary

The logistics cluster in northeast Kansas has continued to evolve over the decades. One could argue that the origins started with the Santa Fe Trail; however, the rise of railroads to move cattle and other commodities clearly defined the area. Today, that same sector has transformed into a modern high-tech industry. As a result of deliberate efforts to grow, transportation and logistics have added over twelve thousand jobs at an annualized growth rate of 11.9 percent over the last decade. A critical component of that transformation is the investment and expansion of the Logistics Park Kansas City (LPKC). Although this study captured the impact of the LPKC, it has included a broader impact on the entire cluster, as the growth at LPKC was not mutually exclusive; instead, the increase in the logistics, warehousing, and distribution was likely partly due to LPKC, and vise versa.

With the assistance of local economic developers and third-party research, this report has estimated that the twenty-nine logistics-related firms within the LPKC have an estimated 4,735 full-time equivalent workers in this sector. The regional cluster, which is defined by Johnson, Miami, and Wyandotte Counties, has an estimated 22,171 people working in logistics. There were just less than 42,000 people at the state level, meaning that the industrial cluster in northeast Kansas represents about 53 percent of all the jobs within the state.

The study findings show that the firms at the LPKC have a significant impact on other businesses within the three-county area, supporting over 3,800 jobs, ranging from grocery stores from household purchases to increased business to business demand for banking, freight forwarders, and security services. The economic ripple effect is shared across the state, supporting 543 jobs within the broader region and an additional 655 jobs elsewhere in the state. All of that activity is estimated to generate 61.5 million dollars in tax state and local revenue annually.

When considering that the LPKC is highly connected within the regional cluster, the magnitude of the impact expands. The 22,171 people working in this industry were estimated to have a total economic impact of 39,799 statewide. Therefore, the implied employment multiplier or the economic ripple effect of the logistics industry was 1.79. That means for every one hundred jobs, there were 79 additional jobs supported either from household spending or from the companies purchasing goods and services.

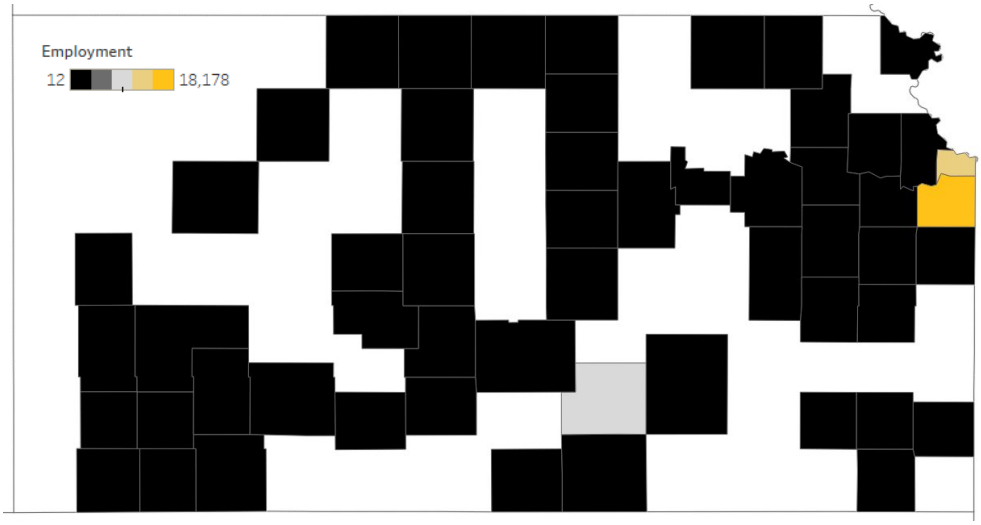
The logistics cluster in northeast Kansas generated over two billion dollars of labor income and just shy of six billion in total output in one year. To put this in perspective, Kansas's gross domestic product in 2020 was 173.3 billion dollars. That means that the cluster directly represents 1.6 percent of the entire Kansas economy and supports 3.4 percent of the state's overall economic activity.

When accounting for the public benefits of the taxes generated from direct employment and other activity, this sector was estimated to create 221.1 million dollars to state and local government entities in a single year. Although the majority of the local government revenue will be concentrated in the four-county region, the industry has a significant spillover effect on the state economy and local governments across Kansas.

Logistics sector market

The logistics sector, which includes trucking, warehousing, storage, and transportation support activities, is highly concentrated in the northeast portion of the state. Over 22,000 of the 41,655 jobs are within three counties, representing fifty-three percent of all Kansas logistics workers. The density of logistics employment has been a mainstay of the region for decades due to the high concentration of railroads; however, the recent growth over the last decade has transformed and further cemented its position as one of the region's most robust industry clusters.

Transportation and Warehousing Employment



Source: CEDBR, BLS-QCEW 2020

Employment			
	Region	KS	Share
Truck Transportation	7,316	16,772	44%
Support Activities for Transportation	2,671	5,952	45%
Warehousing and Storage	12,184	18,931	64%
Logistics	**22,171**	**41,655**	**53%**

Source: CEDBR, BLS - QCEW 2020

Annualized Employment Growth - Regional Cluster			
	10YR	5YR	1YR
Truck Transportation	2%	1%	-1%
Support Activities for Transportation	15%	7%	-4%
Warehousing and Storage	30%	50%	11%
Logistics	**12%**	**16%**	**5%**

Source: CEDBR, BLS - QCEW 2010-20 (Johnson, Wyandotte, Miami)

Annualized Growth - Regional Cluster			
	10YR	5YR	1YR
Establishments	3%	3%	1%
Total Wages	16%	17%	9%
Annual Wage	2%	0%	4%

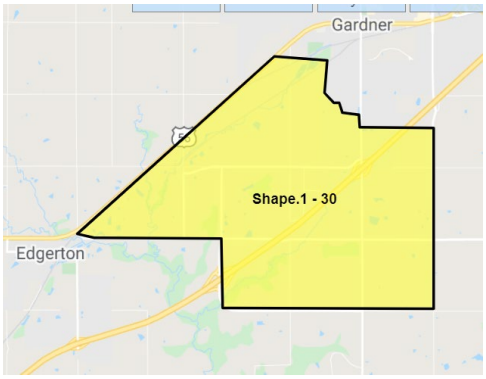
Source: CEDBR, BLS - QCEW 2010-20 (Johnson, Wyandotte, Miami)

The logistics sector, a subset of transportation and warehousing, experienced strong growth at the national and state levels due to changing consumer demands for online consumption and direct-to-consumer shopping. Although there has been substantial growth within the industry, the state's northeast region has exceeded that growth. In 2020, the logistics sector grew by 5.2 percent, adding just over 1,000 jobs during the global pandemic. The fastest-growing segment over the last decade was warehousing and storage.

The growth within this industry was not isolated to employment. Over the last ten years, the annualized change in establishments was 2.7 percent, and total wages expanded by 15.9 percent.

Logistics Park Kansas City

Logistic Park Kansas City



The Logistic Park Kansas City (LPKC) is located between Edgerton and Gardner, Kansas, along highways 56 and 50. According to the LPKC website, the park consists of over three thousand acres of developable space. Based on the information provided to the center by Elevate Edgerton, a public-private economic development organization, there were at least twenty-nine logistics-related firms. Estimated employment ranged from three to over eight hundred employees, and labor compensation ranged between twenty-four thousand and just shy of thirty-five million dollars annually. Some of the most notable companies include Amazon, Hostess, Walmart, and UPS.

There are some clear market advantages for companies locating in the LPKC. First, the proximity to both manufacturing and agricultural production are core drivers to the transportation and warehousing sector. Most people are aware of the agriculture-based economies in Missouri and Kansas; however, some do not realize that both states are highly concentrated in manufacturing employment. Kansas was 1.5, and Missouri was 1.2 times more concentrated in manufacturing relative to the nation, according to the U.S. Bureau of Labor Statistics.

Second, the shift in consumer demand and just-in-time inventory controls increases the value of a centrally located market that can reach the east and west coast. A driving force for both is the time it takes to get the product to the market. Still, the relatively lower cost of land and labor further increases its profitability and makes the logistic park an ideal location.

This study has estimated that there were at least 4,700 full-time equivalent positions physically located within the park. However, the employment count is likely well below the accumulated announced expansions from the firms, as most companies plan growth over a five to ten-year period. Further, this study used a conservative approach when developing the headcounts, leaning to lower estimates when two or more were available.

When examining the logistics-related occupations within the county, the 4,700 jobs were well below the 11,703 jobs estimated by the Bureau of Labor Statistics through the employer filings in 2020. When examining the industry, one finds an established cluster that spans beyond the county border. Companies within an industry cluster tend to benefit from increased productivity by sharing resources like a similarly skilled labor pool, suppliers, and physical infrastructure like railroads. The tendency to gain market advantages by locating near similar companies within an industry is called economies of agglomeration. Other benefits include lower transportation costs, technology innovation, and knowledge spillovers.

Although the report consists of an impact associated with the firms at the LPKC park, the authors believe that the broader industry cluster provides a more accurate picture of the economic effects of the logistics industry in northeast Kansas. Separating the LPKC from the region undervalues the complex industry network that has evolved over several decades and provides cost efficiency to the firms.

Economic Impact

LPKC Impact

The twenty-nine logistics firms within the Kansas City logistics park were estimated to have 4,735 full-time equivalent employees and a total output of 1.14 billion dollars in 2020. The labor income associated with those employees was estimated to be just under three hundred million dollars within Johnson, Miami, and Wyandotte Counties.

The direct employment at the LPKC impacts the local economy in two main ways. First, the labor income is spent on items like housing, food, and entertainment, captured by the induced effect in this report. Therefore, the two hundred and ninety-one million dollars of wages support 1,274 additional jobs within the two-county area. Second, the firms at the logistics park consume goods and services from other companies. The consumption would include security, cleaning services, vending machines, freight forwarders, and banks. The supplier activity is called an indirect effect. The LPKC firms supported 2,582 supplier-related jobs in 2020 and generated an additional four hundred and seventy-three million dollars in sales.

Local - LPKC

	Employment	Labor Income	Output
Direct Effect	4,735	$291,531,978	$1,140,584,462
Indirect Effect	2,582	$163,939,912	$473,298,617
Induced Effect	1,274	$70,107,588	$203,698,085
Total Effect	**8,591**	**$525,579,478**	**$1,817,581,164**

The logistics park, as identified earlier, is interconnected with the broader regional economy through a shared labor pool and suppliers. This report estimated both households living in communities outside the three-county area and buying goods and services from other firms within the logistics industrial cluster. The same twenty-nine firms support an additional 543 jobs within the broader regional economy, identified in this study as Douglas and Franklin Counties.

Region - LPKC

	Employment	Labor Income	Output
Direct Effect	4,735	$291,531,978	$1,140,584,462
Indirect Effect	2,605	$165,185,515	$479,452,038
Induced Effect	1,793	$98,551,882	$286,774,613
Total Effect	**9,134**	**$555,269,375**	**$1,906,811,113**

The economic impact of LPKC also spills over the rest of the state. The model estimated that the logistics park supported 656 jobs throughout the one hundred other counties. When adding up the local, regional, and state impacts, the 4,735 direct jobs support a total of 9,789 annually.

Kansas - LPKC

	Employment	Labor Income	Output
Direct Effect	4,735	$291,531,978	$1,140,584,462
Indirect Effect	2,827	$179,853,062	$563,642,076
Induced Effect	2,228	$121,645,007	$358,573,160
Total Effect	**9,789**	**$593,030,047**	**$2,062,799,698**

When looking at the impact by industry, the service sector benefits the most in terms of employment and labor income. This is because most of the jobs and income were derived from the increased wages and associated spending, as shown by the indirect effect; however, the logistics sector also supports other firms through its supply chain. Examples of the service sector supply chain include banking, legal counsel, warehousing consulting, freight forwarders, and customs brokers.

LPKC - Employment Statewide				
	Direct	Indirect	Induced	Total
Agriculture	22	37	2	61
Mining	-	25	4	29
Construction	-	39	16	56
Manufacturing	1,316	76	11	1,403
TIPU	2,424	587	99	3,109
Trade	581	305	419	1,305
Service	392	1,723	1,668	3,783
Government	-	35	9	44
Total	**4,735**	**2,827**	**2,228**	**9,789**

LPKC - Labor Income Statewide				
	Direct	Indirect	Induced	Total
Agriculture	$ 119,076	$ 1,290,820	$ 47,935	$ 1,457,831
Mining	$ -	$ 599,613	$ 88,857	$ 688,470
Construction	$ -	$ 2,818,146	$ 1,122,677	$ 3,940,823
Manufacturing	$ 92,639,091	$ 5,400,588	$ 719,900	$ 98,759,579
TIPU	$ 120,007,098	$ 41,449,811	$ 9,698,517	$ 171,155,426
Trade	$ 54,441,854	$ 26,094,341	$ 17,907,547	$ 98,443,742
Service	$ 24,324,859	$ 99,177,759	$ 91,330,204	$ 214,832,822
Government	$ -	$ 3,021,984	$ 729,367	$ 3,751,351
Total	**$ 291,531,978**	**$ 179,853,062**	**$ 121,645,004**	**$ 593,030,044**

LPKC - Output Statewide				
	Direct	Indirect	Induced	Total
Agriculture	$ 10,031,025	$ 4,152,503	$ 214,820	$ 14,398,348
Mining	$ -	$ 7,167,244	$ 1,051,229	$ 8,218,473
Construction	$ -	$ 8,636,978	$ 3,672,835	$ 12,309,813
Manufacturing	$ 528,637,298	$ 51,620,690	$ 5,255,701	$ 585,513,689
TIPU	$ 314,525,509	$ 130,459,577	$ 31,163,608	$ 476,148,694
Trade	$ 252,493,769	$ 78,299,340	$ 52,684,221	$ 383,477,330
Service	$ 34,896,861	$ 276,925,432	$ 262,697,403	$ 574,519,696
Government	$ -	$ 6,380,311	$ 1,833,346	$ 8,213,657
Total	**$ 1,140,584,462**	**$ 563,642,075**	**$ 358,573,163**	**$ 2,062,799,700**

The firms located within the logistics park also generate tax revenue. In 2020, the estimated public benefit created 61.5 million dollars for both state and local governments across Kansas. Sales taxes

were the most prominent source of public revenue at 26.3 million dollars. The second-largest category is other production taxes, including other corporate-related taxes like property, motor vehicle licenses, severance taxes, and special assessments.

State and Local Tax Revenue		
	Tax Revenue	
Employee Compensation	$	59,803
Sales Tax	$	26,282,558
Other Production	$	20,441,391
Households	$	14,730,236
Total	**$**	**61,513,988**

Logistics Cluster

As shared earlier in the report, the LPKC is part of a broader logistics cluster spread across the region. Therefore, this study estimated the economic impact of the entire logistics sector within Johnson, Miami, and Wyandotte. The authors of this report believe that the broader geographic definition of logistics in northeast Kansas better reflects the importance of the cluster, which LPKC plays a critical role in not only the health and vitality but also transforming the industry by attracting emerging high-tech companies.

As an entire cluster, the 22,171 logistics-related jobs in northeast Kansas support 13,398 jobs within the three-county local market area. This cluster also supports 1,886 jobs within the region and 2,324 across the rest of the state. Thus, for every one hundred people employed in this industry, 79 other people are positively impacted across Kansas.

The 39,779 jobs supported by the logistics park and cluster generated over two billion dollars of labor income and just shy of six billion in total output in 2020. To put this in perspective, Kansas's gross domestic product in 2020 was 173.3 billion dollars. That means that the cluster directly represents 1.6 percent of the entire Kansas economy and supports 3.4 percent of the state's overall economic activity.

This sector was estimated to generate 221.1 million dollars to state and local government entities when accounting for the tax generation from direct employment and other activity. Although the majority of the local government revenue will be concentrated in the five-county region, the industry has a significant spillover effect on the state economy and local governments across Kansas.

Local - NE Kanasas Logistics Cluster

	Employment	Labor Income	Output
Direct Effect	22,171	$1,074,015,831	$ 2,711,818,131
Indirect Effect	8,938	$520,535,193	$1,550,821,780
Induced Effect	4,460	$245,475,017	$713,259,954
Total Effect	**35,569**	**$1,840,026,041**	**$4,975,899,865**

Region - NE Kanasas Logistics Cluster			
Impact Type	**Employment**	**Labor Income**	**Output**
Direct Effect	22,171	$1,074,015,831	$ 2,711,818,131
Indirect Effect	9,008	$524,245,110	$1,569,721,404
Induced Effect	6,277	$344,974,776	$1,003,800,570
Total Effect	**37,455**	**$1,943,235,717**	**$5,285,340,105**

Kansas - NE Kanasas Logistics Cluster			
Impact Type	**Employment**	**Labor Income**	**Output**
Direct Effect	22,171	$1,074,015,831	$ 2,711,818,131
Indirect Effect	9,805	$577,049,039	$1,960,292,368
Induced Effect	7,803	$426,113,248	$1,256,178,581
Total Effect	**39,779**	**$2,077,178,118**	**$5,928,289,080**

Kansas Total - NE Kanasas Logistics Cluster			
	Employment	**Labor Income**	**Output**
Agriculture	9	$ 229,260	$ 959,627
Mining	251	$ 5,745,762	$ 72,856,974
Construction	206	$ 14,512,353	$ 45,433,033
Manufacturing	149	$ 12,013,210	$ 226,531,074
TIPU	25,449	$ 1,313,123,486	$ 3,380,443,925
Trade	2,173	$ 102,427,530	$ 351,482,794
Service	11,383	$ 615,492,697	$ 1,821,029,358
Government	160	$ 13,633,820	$ 29,552,295
Total	**39,779**	**$ 2,077,178,118**	**$ 5,928,289,080**

State and Local Tax Revenue	
	Tax Revenue
Employee Compensation	$ 211,013
Sales Tax	$ 94,950,719
Other Production	$ 74,330,227
Households	$ 51,566,801
Total	**$ 221,058,760**

Acknowledgment

The following people were responsible for the successful completion of the impact study, which includes the data collection and economic modeling. At the Kansas Department of Commerce, Robert North, Chief Counsel, led the project scope, identified collaborators, and provided overall guidance.

James Oltman, president of Elevate Edgerton, served as the primary source for developing the existing business list with the LPKC. He also provided the initial employment estimates of the firms and guided the research team in gaining supplementary information like NAICS codes, websites, and contact information.

At Wichita State University's Center for Economic Development and Business Research (CEDBR), Mike Busch served as Co-Principal Investigator for the study. He provided technical expertise, proofing, and analysis throughout the project. Jeremy Hill, Director of CEDBR served as the Co-Principal Investigator, provided theoretical, technical expertise, data collection, and project management.

The Center for Economic Development and Business Research, a unit of the W. Frank Barton School of Business at Wichita State University, is responsible for any errors in this report. Inquiries may be directed to: Center for Economic Development and Business Research, 1845 Fairmount St. Wichita, KS 67370. The center can be reached by telephone at 1-316-978-3225 or through the website at www.CEDBR.org.

Methodology

Firm Employment and Sales

In order to develop the economic impact, this study needed business employment and sales for each firm. Unfortunately, this data is proprietary and confidential. Therefore, this study used secondary sources to estimate the critical information for the project. The primary method used was information given to the center by Elevate Edgerton, which was derived by direct contact with the companies. The secondary method used to fill in data gaps was the utilization of the following sources: Data Axle, Dun & Bradstreet, and Business Insight. After those two methods were exhausted, the center used news articles and industry trade magazine reports.

This project used a simplifying assumption that the economic impact was based on the firm's estimated employment and sales. The preferred method for impact projects is to use actual expenditures broken down by payroll, nonpayroll, and construction, as actual spending could be less or greater than sales. Further, the allocation of spending between labor and capital can impact the economy in drastically different ways. Since the detailed information was unknown, the study relied on the industry-specific estimated commodity flows. The snapshot approach only used the estimated employment as of summer 2021. In several instances, the current level was below the publicly advertised level when the firm is expected to reach its full capacity.

Excluded from the project estimate was any potential business-related tourism spending. Business tourism includes clients traveling to the site, training of employees, and meetings from out-of-town staff. In some cases, this type of tourism can be rather extensive and have a significant impact on the regional tourism industry.

Logistics employment

This study used the Bureau of Labor Statistics annual industry employment estimates from the Quarterly Census of Employment and Wages. This program covers more than 96 percent of all jobs across the nation.

Within the transportation and warehousing sector, five segments fit the logistics industry cluster, as outlined by the project: rail, water, truck, support activities, and warehousing and storage. However, there was not enough employment or establishments associated with rail and water for those estimates to be provided at the county or state level; therefore, those were excluded from the analysis. Although the railroad sector was excluded, the employment that most would relate to the industry was included in the report within the support activities sector.

It should be noted that the transportation and warehousing sector includes other sectors that were excluded from this research project: air, transit and ground transportation, scenic and sightseeing, and curriers and messengers.

Economic Impact model

There are two approaches to measuring the economic impact of this type of project: measuring net new or all economic activity. Measuring net new economic activity works best when adding a new business or facility, as both would be new to the regional economy. Measuring all economic activity works best when trying to understand the size and interaction of a project on a regional economy. Since the purpose of this study was to understand how the LPKC impacts the regional and state economies, all economic activity was included. Further, the firms under consideration within this project were considered as base industries, those that are economic drivers, and export goods and services to other economies. Base industries do not necessarily serve the local market; therefore, their physical presence is not required, and their entire operations add value to the economy.

The impact model used to estimate the economic effects of the logistics industry on the regional and state economies was IMPLAN (Impact analysis for PLANning). IMPLAN is one of the most commonly used models for impacts similar to this project. Alternative models are less common in practice and tend to involve a higher level of customization. The advantage of using this model is that it is broadly available and uses straightforward methodologies. Others could replicate the study or even develop similar studies to provide reliability or comparability.

Double counting is a common weakness of contribution studies. It tends to occur by inputting two similar direct economic activities like salaries and employment or adding in an indirect effect on top of a direct effect. This study went to great lengths to prevent double-counting by using the Analysis-By-Part technique developed by IMPLAN. Further, this study used an iterative process to identify and reduce inter-industry transactions.

Terms and Definitions

- **Cluster** – An industry cluster is a group of industries that gain economic efficiencies through shared labor, knowledge, and supply chains.
- **Direct impact** – A direct effect measures an industry's initial change or value in terms of dollars, jobs, or wages. This study excluded jobs and wages of state government workers that provide essential but were not directly employed within the Kansas State Park division.
- **Economies of agglomeration** – An agglomeration economy is an effect generated from a cluster of firms within the same or similar industry. The economy of scale effects includes lower transportation costs, increased labor supply, labor specialization, and knowledge spillovers.
- **Indirect impact** – An indirect effect measures the supply chain impact from an initial change or direct impact.
- **Induced impact** – An induced impact measures the household effect from increased demand from an initial change or direct effects.
- **Labor income impact** – Labor income includes all forms of employment income and encompasses employee compensation and proprietor income.

- **Location quotient** – A location quotient measures an industry's relative concentration.
- **Market area** – This study used three measures of a market area. The local market area includes Johnson, Miami, and Wyandotte Counties, the primary location of the businesses. The regional market, where there is an immediate supply chain and labor pool, includes Johnson, Miami, Douglas, Franklin, and Wyandotte Counties. The third region is the Rest of State, which provides additional supply chain services and benefits from the fiscal economic activity.
- **Multiplier** – A multiplier captures the inter-industry effects from a change to a primary sector. A value greater than one indicates a positive impact on the economy for every dollar or job created.
- **Output impact** – An output effect measures the total value of a business's production and equals revenues.
- **Tax on corporations** – Corporation taxes include dividends and corporate profits.
- **Tax on households** – Household taxes include income, fines and fees, motor vehicle license, property, and fishing and hunting.
- **Tax on production** – Production taxes includes sales, property, motor vehicle licenses, severance, other related taxes.
- **TIPU sector** – The TIPU sector includes transportation, information, and public utilities.
- **Total impact** – A total effect adds the direct, indirect, and induced effects to estimate the full impact on a regional economy.