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AN ANALYSIS OF EMPLOYMENT AND WAGES IN SELECT INDUSTRY GROUPS IN THE CITY OF NEW ORLEANS (2004-2021)

DATA SOURCE

Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, U.S. Department of Labor

DEFINITIONS

Quarterly Census of Employment and Wages- The primary economic product is the tabulation of employment and wages of establishments which report to the Unemployment Insurance (UI) programs of the United States. Employment covered by these UI programs represents about 99.7% of all wage and salary civilian employment in the country. It counts only filled jobs, whether full or part-time, temporary or permanent, by place of work. Wages include bonuses, stock options, severance pay, profit distributions, cash value of meals and lodging, tips and other gratuities, and, in some States, employer contributions to certain deferred compensation plans such as 401(k) plans.

Seven-Digit NAICS-The four-digit value consists of industry groups. Data are by private establishment.

PRIVATE INDUSTRIES SELECTED FOR ANALYSIS

- A. Software Publishers (NAICS 5112)
- B. Motion picture and video industries (NAICS 5121)
- C. Specialized Design Services (NAICS 5414)
- D. Computer Systems Design and Related Services (NAICS 5415)
- E. Scientific Research and Development Services (NAICS 5417)
- F. Travel Accommodations (NAICS 7221)
- G. Restaurants (NAICS 7225)
- H. Drinking places, alcoholic beverages (NAICS 7224)

The above industry groups were selected because they represent both industries driving current job growth (Travel Accommodations, Restaurants and Drinking Places) and industries that have become high profile (Software Publisher, Motion Picture and Video Industries, Specialized Design Services, Computer Systems Design and Scientific Research and Development Services) industries that are expected to increase their share of the City of New Orleans economy.

The data series covers the periods 2004, 2019, 2020 and 2021. The year 2004 was selected as the base because it was the last year in which the data series was not affected by Hurricane Katrina. Data for 2019 represents the pre-Covid era and the year 2021 reflect one year after the year 2000 economic impact of Covid-19.

INDUSTRY ANALYSIS

Table 1 below looks at the percentage change in the annual average number of establishments between 2004 and 2021 for Orleans Parish. As illustrated in Table 1, the top four sectors among the select sectors for establishment growth were in the following order: Software Publishers, Motion Picture and Video Industries, Computer Systems Design and Scientific Research and Development Services. The share of the seven selected sectors as a percent of *all* establishments in Orleans Parish increased from 11.9% in 2004 to 17.6% in 2021. Within the seven-industry cluster, the share of the Leisure and Hospitality (NAICS 7211, 7224 and 7225) establishments fell from 81% in 2004 to 66% in 2021. Thirty-nine percent (39%) of the fractional increase in the select sectors as a fraction of all establishments was concentrated in Full-Service Restaurants (NAICS 7225) and Computer Systems Design and Related Services (NAICS 5415).

Table 1

NAICS	Orleans Parish Industry Title	Average Annual QCEW Establishments				Percentage Change 2004-2021	Absolute Change 2004-2021
		YEAR					
		2004	2019	2020	2021		
5112	Software Publishers	3	55	76	121	3933%	118
5121	Motion picture and video industries	39	82	84	89	128%	50
5414	Specialized design services	51	72	88	90	76%	39
5415	Computer systems design and related services	163	389	431	529	225%	366
5417	Scientific research and development services	30	59	72	91	203%	61
7211	Traveler accommodation	172	204	220	231	34%	59
7225	Full-service restaurants	822	1,173	1,231	1,258	53%	436
7224	Drinking places, alcoholic beverages	210	265	266	271	29%	61
TOTAL ESTABLISHMENTS IN SELECTED SECTORS		1,487	2,299	2,468	2,680	80%	1,193
TOTAL PARISH ESTABLISHMENTS		12,496	13,466	14,221	15,188	22%	2,692
<p>Note: NAICS 7725 was NAICS 7721 up until 2009. Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting</p>							

Table 2 focuses on the annual average employment in the identified industries over the period 2004-2021.

(Note: 2021 data still shows the devastating impact of Covid-19 on the Leisure and Hospitality Industry)

The table illustrates the lingering impact of the Covid-19 lockdown on the New Orleans job economy. Motion picture production, with its heavy public subsidy, only added a thousand or so employees over the seventeen-year period between 2004 and 2021. Computer systems design and related industries managed to add 972 more jobs between 2004 and 2021. The percentage of “high tech” jobs (NAICS 5112, 5414, 5415, 5417) as a fraction of the total jobs in the selected industries increased from 4.2% (1,570 jobs) in 2004 to 10% (2,908 jobs) in 2021. *This large increase in share was only due to the collapse of Leisure and Hospitality (due to Covid-19) in 2020.* In 2019, the share was 6.0%, not significantly different from 2004. (In 2004, the fraction was 4.2%)

Table 2

NAICS	Orleans Parish Industry Title	Average Annual QCEW Employment				Percentage Change 2004-2021	Absolute Change 2004-2021
		YEAR					
		2004	2019	2020	2021		
5112	Software Publishers	8	115	194	334	4075%	326
5121	Motion picture and video industries	1,851	2,904	1,688	2,702	46%	851
5414	Specialized design services	222	273	238	227	2%	5
5415	Computer systems design and related services	1,072	2,064	2,068	2,050	91%	978
5417	Scientific research and development services	268	205	246	297	11%	29
7211	Traveler accommodation	12,438	11,738	6,589	5,956	-52%	-6,482
7225	Full-service restaurants	18,299	23,687	15,269	16,375	-11%	-1,924
7224	Drinking places, alcoholic beverages	3,028	3,286	1,657	2,213	-27%	-815
	TOTAL EMPLOYMENT IN SELECTED SECTORS	37,186	44,272	27,949	30,154	-19%	-7,032
	TOTAL AVERAGE ANNUAL PARISH EMPLOYMENT	247,260	200,514	171,495	174,200	-30%	-73,060

Note: NAICS 7725 was NAICS 7721 up until 2009.

Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting

Table 3 below compares the number of employees per establishment for the select sectors in Orleans, the State of Louisiana and U.S.

Table 3

		Employees per Establishment		
		2021		
		Orleans	Louisiana	U.S.
5112	Software Publishers	2.8	3.0	10.2
5121	Motion picture and video industries	30.4	19.9	11.0
5414	Specialized design services	2.5	2.3	3.4
5415	Computer systems design and related services	3.9	4.4	6.9
5417	Scientific research and development services	3.3	3.0	19.4
7211	Traveler accommodation	25.8	18.2	22.0
7225	Restaurants	13.0	16.0	16.8
7224	Drinking places, alcoholic beverages	8.2	4.5	8.2
	Average	11.5	12.6	13.2

Note: NAICS 7725 was NAICS 7721 up until 2009.

Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting

Table 3 magnifies the difference between the average number of employees per establishment between Orleans Parish and U.S. with respect to four of the select sectors: Software Publishers (NAICS 5112), Motion Picture and Video Industries (NAICS 5121), Scientific Research and Development Services (NAICS 5417) and Traveler Accommodations (NAICS 7211). First, it points out that relative to the U.S., **Orleans Parish is a regional film center**, having almost three times as many employees per establishment in 2021 than the U.S. average. Travelers Accommodations, recovering from the Covid-19 Pandemic, still is digging out of the economic hole of Covid-19. **As an illustration, Travelers Accommodations (NAICS 7211) had 57.5 employees per traveler’s establishment in Orleans Parish in 2019. The U.S. level was 22.2 employees per establishment in the same year.** The jobs in the technology and scientific private establishments remain small on the average when measured relative to the U.S. **Of critical concern is the fact, illustrated in Tables 2, and 3, that the Scientific Research and Development private industry remains small in the parish.** With two medical schools located in the parish, it points to the problem of diversifying the economy. *The private sector weakness of Scientific Research and Development Services (NAICS 5417) in New Orleans is pointed out by the level of NIH funding for both public and private scientific research establishments.* In Birmingham, academic and non-academic research centers received in 2021 \$338 million in NIH funds. In New Orleans, academic and non-academic research centers received \$135 million in NIH funding in 2021. In Houston-Galveston area, academic and non-academic research centers received \$586 million in NIH funding in 2021.

Table 4 identifies the number of employees per establishment for select years between 2004 and 2021 in Orleans Parish. Table 4 is a difficult data set to interpret primarily because the time series is heavily influenced in the years 2000 and 2021 by the Covid-19 Pandemic. **Note of caution: using employees per establishment tends to slightly distort the data series because the number is a ratio. Hence, Table 4 data should be evaluated in the context of Table 1 and 2.**

Table 4

NAICS	Orleans Parish	Average Number of Employees Per Establishment				Percent Change 2004-2021	Absolute Change 2004-2021
		YEAR					
	Industry Title	2004	2019	2020	2021		
5112	Software Publishers	2.7	2.1	2.6	2.8	4%	0.1
5121	Motion picture and video industries	47.5	35.4	20.1	30.4	-36%	-17.1
5414	Specialized design services	4.4	3.8	2.7	2.5	-42%	-1.8
5415	Computer systems design and related services	6.6	5.3	4.8	3.9	-41%	-2.7
5417	Scientific research and development services	8.9	3.5	3.4	3.3	-63%	-5.7
7211	Traveler accommodation	72.3	57.5	30.0	25.8	-64%	-46.5
7225	Full-service restaurants	22.3	20.2	12.4	13.0	-42%	-9.2
7224	Drinking places, alcoholic beverages	14.4	12.4	6.2	8.2	-43%	-6.3
	TOTAL AVERAGE EMPLOYEES PER ESTABLISHMENT IN SELECTED SECTORS	22.4	17.5	11.3	11.3	-50%	-11.1
	TOTAL PARISHWIDE AVERAGE EMPLOYEES PER ESTABLISHMENT	19.8	14.9	12.1	11.5	-42%	-8.3

Note: NAICS 7725 was NAICS 7721 up until 2009.

Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting

Critically, NAICS 7211 (Traveler Accommodations) has been hit hard by the Covid-19 Pandemic. Even with the impact of the Covid-19 Pandemic on Leisure and Hospitality, there are two fundamental questions that should be asked. First and looking only at the establishment and job levels for 2014 and 2019, the ratio shows a steep decline in the number of employees per establishment, going from 72.3 employees per establishment to 57.5 employees per establishment in 2019. The question is: could structural and technology changes in this industry causing this decline *prior* to the Covid-19 Pandemic by altering the demand for labor? Table 1 shows between 2004 and 2019 the number of establishments in this NAICS increased by 18.6%. Correspondingly, Table 2 shows that employment fell by 5.6%, suggesting structural changes in this industry occurring prior to the Covid Pandemic. Second, from the data identified in Tables 1 and 2, could the economic consequences of Covid-19 *accelerate structural changes* in the Traveler Accommodation industry by reducing the demand for labor. Hence, Table 1 shows that between 2019 and 2021, the number of establishments in Traveler Accommodation *increased* by 13.2%, suggesting little establishment consolidation in “the Covid-19 world.” At the same time establishments were added to the industry, employment plummeted by over 49% between 2019 and 2021. There are several (non-inclusive) potential answers: (a) establishments are not filling job-openings, (b) this inability to fill positions accelerates capital-labor substitution and/or(c) job functions of employees are becoming multi-occupational. The data at this stage is too “grainy” to provide an assessment but opens important questions remaining for answers with greater detail.

Looking across all the select sectors in Table 4 points to long-term trend in fewer employees per establishment. Disaggregating the total change by the incremental change in each NAICS employment and establishment categories yields some interesting observations. For example, new software establishments (NAICS 5112) yield 2.8 *new jobs per new establishment* (326 new jobs divided by 118 new establishments) between 2004 and 2021. At the national level, the ratio of new jobs per new establishment over this period was 7.1 or two and one-half times greater. On the other hand, Motion Picture and Video Industries in Orleans Parish new establishments yields 17 new jobs per new establishment. At the national level, the total jobs in the industry declined by 11,709 between 2004 and 2021. This increasing relative concentration of jobs (*even though the actual increase of the number of jobs in this NAICS sector in Orleans Parish only increased by 851 over the 2004 to 2021*), is significant **relative to the large decline at the national level**. This concentration is confirmed by the specialization quotient (location quotient (LQ)) which shows that in 2021 the concentration of Motion Pictures establishments in Orleans Parish was two times more concentrated relative to the nation, and the concentration of jobs in the parish relative to the nation was more than six times more concentrated in 2021. This job concentration ratio increased from 3.8 in 2004 to 6.4 in 2021. (*An explanation of the concentration or specialization ratio is explained at the end of this paper.*) However, the **type of jobs** in the Orleans Parish industry appears to be more on the lower end of the pay scale relative to the U.S. QCEW data showed that the average pay in 2021 Orleans Parish was \$60,900. Whereas average pay in this industry at the national level was \$95,600. Average pay in Orleans Parish across all the select sectors except for Traveler Accommodation (NAICS 7211), Restaurants (NAICS 7225) and Drinking Places (NAICS 7224) were all below the national average in the technology and scientific sectors, point to a weakness in an effort to diversify over the entire time series (2004 to 2022).

As noted earlier on, the local Traveler Accommodations (NAICS 7211) industry was hit hard by the collapse of the overall Leisure and Hospitality industry during the peak of the Covid-19 Pandemic. Between 2019 and 2021, the national industry was down by 556,430 QCEW jobs or 28.1% between these periods. In Orleans Parish, industry QCEW jobs went from 11,738 in 2019 to 5,956 QCEW jobs in 2021 or a 49.2% decrease over this period. The industry employment base went from 57.5 jobs per establishment in 2019 to 27.8 QCEW jobs in 2021. Even with the dramatic decline of jobs in this (NAICS 7211) industry, the establishment, jobs, and salary concentration ratios relative to the local economy, points to its importance to the Orleans Parish economy. For example, relative to the national economy and in 2021, the concentration ratio for establishments was 2.6 times greater in Orleans parish than the nation. Relative to jobs, industry concentration ratio was 3.6 greater in Orleans Parish than the nation. The relative importance to the local economy of total wages and salaries in this industry was 3.9 or almost four times more important than at the national level. These ratios confirm the obvious: the importance of the Traveler Accommodations industry within Leisure and Hospitality in the city of New Orleans. Interestingly, Restaurants (NAICS 7225) concentration (establishments, jobs and wage and salary impact) ratios are not as dominant as the Traveler Accommodation ratios (1.6, 1.4, 1.8) relative to the national economy. On the other hand, the Drinking Places, Alcoholic Beverages (NAICS 7224) industry clearly points to New Orleans as a “drinking destination.” The ratios are 4.7, 5.3 and 7.4.

The specialization or concentration ratios for the combined technology and science private sector industries, Software Publishers (NAICS 5112), Specialized Design Services (NAICS 5414), Computer Systems Design and Related Services (NAICS 5415) and Scientific Research and Development Services (NAICS 5417) are shown in Table 5. Only Orleans Parish establishments growth relative to U.S. establishment growth is the ratio equal to 1 or greater. This implies that either the local industry has a concentration equal to the U.S. (in the case of 1), or if the ratio is > than 1, the concentration is greater than the U.S with respect to that industry. Hence, between 2004 and 2021, establishment growth was more favorable than in the entire U.S. However, with respect to jobs in the select industry or specifically their average annual pay, the relative position of Orleans Parish select industry slipped relative to the U.S.

Table 5

Orleans Parish Specialization Ratios Relative to the U.S. Industries

NAICS	Industry	annual_avg_estabs		annual_avg_emplvl		avg_annual_pay	
		2004	2021	2004	2021	2004	2021
5112	Software publishers	0.3	1.6	0.0	0.5	0.6	0.4
5414	Specialized design services	1.3	1.6	1.4	1.3	0.7	0.8
5415	Computer systems design and related services	0.9	1.1	0.7	0.7	0.9	0.7
5417	Scientific research and development services	1.2	1.5	0.4	0.3	0.6	0.6

Source: Primary data are the Quarterly Census of Employment and Wages, BLS; Specialization ratios were calculated by Systems Solutions Consulting

Table 6 identifies average annual pay in the selected establishments and across all establishments in Orleans Parish over the study period. As noted earlier in this paper, average pay data for area geography (Orleans Parish) has been distorted by the Covid-19 Pandemic. In the case of this parish, the collapse of Leisure and

Hospitality employment affected aggregate pay data for that sector ultimately *inflating the calculated city-wide average*.

With respect to annual average pay, Computer Systems Design and jobs in Scientific research and development services lead the pack with Full-Service Restaurants and Drinking Place coming in the bottom. (note: calculated in average pay are tips) Hopefully, employment in Software Publishers will expand in time and better represent “an emerging industry” in the city of New Orleans. At this stage, it remains a “boutique industry.” And unfortunately, the private sector jobs in Scientific research and development services are so minuscule (see Table 2) that a few high paying jobs in the industry could seriously affect the average in that industry.

Table 6

NAICS	Industry Title	Annual Average Salary				Percentage Change 2004-2021 (current \$)	Absolute Change 2004-2021 (current \$)
		YEAR					
		2004	2019	2020	2021		
	Orleans Parish	CURRENT \$					
5112	Software Publishers	\$56,441	\$95,763	\$90,930	\$81,464	44%	\$25,023
5121	Motion picture and video industries	\$17,490	\$49,320	\$50,582	\$60,867	248%	\$43,377
5414	Specialized design services	\$30,030	\$42,660	\$47,886	\$59,446	98%	\$29,416
5415	Computer systems design and related services	\$62,069	\$89,570	\$92,058	\$97,051	56%	\$34,982
5417	Scientific research and development services	\$46,374	\$74,594	\$92,430	\$94,906	105%	\$48,532
7211	Traveler accommodation	\$21,607	\$36,656	\$36,291	\$41,237	91%	\$19,630
7221	Full-service restaurants	\$14,173	\$24,461	\$24,732	\$27,542	94%	\$13,369
7224	Drinking places, alcoholic beverages	\$15,433	\$24,764	\$27,563	\$29,993	94%	\$14,560
	TOTAL AVERAGE WAGES IN SELECTED SECTORS	\$18,644	\$30,881	\$35,420	\$32,830	76%	\$14,186
	TOTAL ORLEANS AVERAGE SALARY	\$36,877	\$53,691	\$60,492	\$62,546	70%	\$25,669

Note: NAICS 7725 was NAICS 7721 up until 2009.

Source: Quarterly Census of Employment and Wages; sum average for selected sectors is weighted by employment resulting in weighted average.

Table 7 shows the total annual wage bill in current dollars for each of the selected sectors; the summed total of the selected NAICS industries, and the annual average wage costs for all establishments in Orleans Parish over select years between 2004 to 2021. In 2021, sixty seven percent (67%) of the total wage bill for the *select sectors* was concentrated in the three Leisure and Hospitality sectors (NAICS 7211, 7225 and 7224). This was a decline from the 2019 in which the selected Leisure and Hospitality accounted for seventy-five (75%) of the total. This illustrates the impact of the covid-19 Pandemic on Leisure and Hospitality in the parish.

Table 7

NAICS	Industry Title	Total Annual Pay			Percentage Change 2004-2021	Absolute Change 2004-2021
		YEAR				
		2004	2020	2021		
CURRENT \$						
5112	Software Publishers	\$451,528	\$10,180,427	\$17,602,623	3798%	\$17,151,095
5121	Motion picture and video industries	\$32,373,990	\$132,049,324	\$85,395,881	164%	\$53,021,891
5414	Specialized design services	\$6,666,660	\$11,258,341	\$11,380,948	71%	\$4,714,288
5415	Computer systems design and related services	\$66,537,968	\$157,404,623	\$190,352,180	186%	\$123,814,212
5417	Scientific research and development services	\$12,428,232	\$10,107,175	\$22,745,505	83%	\$10,317,273
7211	Traveler accommodation	\$268,747,866	\$424,060,552	\$239,116,582	-11%	-\$29,631,284
7225	Full-service restaurants	\$259,351,727	\$550,697,884	\$377,642,851	46%	\$118,291,124
7224	Drinking places, alcoholic beverages	\$46,731,124	\$77,116,758	\$45,669,077	-2%	-\$1,062,047
	ANNUAL WAGE COSTS IN SELECTED NAICS	\$693,289,095	\$1,372,875,084	\$989,905,647	43%	\$296,616,552
	ORLEANS ANNUAL AVERAGE WAGE COSTS PER ESTABLISHMENT	\$8,644,752,732	\$10,282,609,875	\$10,374,010,434	20%	\$1,729,257,702
<p>Note: NAICS 7725 was NAICS 7721 up until 2009.</p> <p>Source: Quarterly Census of Employment and Wages</p>						

Table 8

NAICS	Industry Title	Annual Wage Cost Per Establishment				Percentage Change 2004-2021 (current \$)	Absolute Change 2004-2021 (current \$)
		YEAR					
		2004	2019	2020	2021		
CURRENT \$							
5112	Software Publishers	\$148,941	\$199,942	\$231,613	\$224,925	51%	\$75,984
5121	Motion picture and video industries	\$830,106	\$1,746,543	\$1,016,618	\$1,847,784	123%	\$1,017,677
5414	Specialized design services	\$130,916	\$161,802	\$129,329	\$149,880	14%	\$18,964
5415	Computer systems design and related services	\$408,177	\$475,215	\$441,652	\$376,004	-8%	-\$32,173
5417	Scientific research and development services	\$413,762	\$259,182	\$315,910	\$309,922	-25%	-\$103,841
7211	Traveler accommodation	\$1,562,464	\$2,109,130	\$1,086,894	\$1,063,230	-32%	-\$499,234
7225	Full-service restaurants	\$330,878	\$493,948	\$306,777	\$358,499	8%	\$27,621
7224	Drinking places, alcoholic beverages	\$222,504	\$307,085	\$171,688	\$244,913	10%	\$22,409
	ANNUAL WEIGHTED AVERAGE WAGE COSTS IN SELECTED NAICS	\$474,410	\$633,777	\$401,096	\$445,983	-6%	-\$28,427
	ORLEANS ANNUAL AVERAGE WAGE COSTS PER ESTABLISHMENT	\$729,697	\$799,482	\$729,485	\$717,375	-2%	-\$12,322
<p>Note: Total annual average for selected sectors is a weighted average determined by multiplying average employment per establishment by average wage and salary cost per establishment.</p> <p>Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting</p>							

Table 8 provides insight into level of development of industries over time within the cluster of selected industries. The most significant statistic to review is the change in the average wage cost per establishment. The table was developed by dividing the total annual wage cost (Table 8) in each NAICS category by the annual average number of establishments (Table 1) in each year within the category. In 2021, the weighted annual **average** wage bill for the select seven industries in this study was \$455,983. **Note the decline between 2019 and 2021.** Between these two periods, the average annual wage bill fell by 30% due to the Covid-19 Pandemic which paralyzed the Leisure and Hospitality industry. Software Publishers (NAICS 5112) and Scientific Research and Development Services (NAICS 5417) were able overcome the devastating impact of the Covid pandemic in 2000 and continued a positive-growth curve into 2021. Motion picture and video industries showed a big drop off in 2020 but recovered rapidly in 2021.

LOCATIONAL SPECIALIZATION ANALYSIS

Since this analysis is based upon the relative concentration in each select industry (NACIS), the problem of calculating averages is minimized over the data sets (Orleans, Louisiana and U.S.)

Location quotient analysis is a good *preliminary tool* to assess *the relative* (in this case) *competitiveness* of a local industry as measured against the same industry at a larger geographical area. *From an economic development perspective, it provides one preliminary measure of how “successful” a local industry is relative to another area.* In this study, the location quotient technique is used to identify the concentration of the select industries in Orleans Parish relative to the United States and Louisiana. Location quotients are *ratios measuring the concentration* of a specific industry measure (number of establishments, employment, salaries, etc.) relative to the same measure for all industries in that area. This ratio is divided by a similar ratio for the same industries at a larger spatial area (nation, state and region). *The larger (>1.0) the numerical value of the ratio, the greater is the concentration of the specific industry in an area relative to the larger spatial area being measured against. The smaller (<1.0) the ratio, the more likely the industry is locality specific and competes less in the national or larger market area.* In this analysis, the numerator is Orleans Parish. The dominator is the United States or Louisiana. The following is the location quotient formula used to identify the concentration of employment in a specific sector relative to the United States.

Concentration Location Quotients (LQ) is as follows:

Location Quotient=	Orleans Employment in <u>Industry I in Year T</u>	/	National Employment in <u>Industry I in Year T</u>
	Total Orleans Employment in Year T		Total National Employment in Year T

Table 9 measures the concentration of the average number of establishments in the identified industries for Orleans Parish relative to Louisiana and the United States in the year 2021. Relative to Louisiana, all the selected industries in Orleans Parish reflect a higher concentration of establishments. As an example, establishments engaged in motion picture and video production are 3.1 times more concentrated in Orleans Parish than the state. With a LQ at 1 or near 1 relative to the U.S., the number of establishments in computer systems design (LQ 1.1 with NAICS 5415) suggest that these (establishments) industries in Orleans Parish are

(generally) not oriented toward the *national marketplace and (generally) serves local markets*. Scientific Research and Development Industries (NAICS 5417) has a higher concentration of industries in Orleans Parish than the United States but as Table 10 illustrates, the employment concentration ratio is almost negligible relative to the United States. *Drinking places and alcoholic beverage establishments (NAICS 7224) stand out as being highly concentrated in Orleans Parish, having a LQ that is 4.7 times more concentrated than the United States*. This confirms that a large fraction of these establishments' service customers who are not from Orleans Parish and are heavily oriented toward non-resident visits.

Table 9

Concentration (LQ) Index for Annual Average Number of Establishments in Orleans Parish		
Relative to:	2021	
	Louisiana	U.S.
Industry		
Software Publishers	3.0	1.6
Motion picture and video industries	3.1	2.0
Specialized design services	2.6	1.6
Computer systems design and related services	1.9	1.1
Scientific research and development services	2.8	1.5
Traveler accommodation	1.9	2.6
Full-service restaurants	1.3	1.6
Drinking places, alcoholic beverages	2.5	4.7
Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting		

The concentration ratio of full-service restaurants (NAICS 7225) establishments surprisingly is less concentrated in Orleans Parish relative to the United States than *might be thought*. *This might be a function of a high level of competition, and hence a lower survival rate for restaurant establishments*. The LQ for pre-Katrina (2004) Orleans Parish restaurant establishments and the post-Katrina 2021 value has not changed between 2004 and 2021 (1.6 vs 1.6). Finally, as would be expected, traveler accommodations (NAICS 7211) show 2.6 times or more concentration (see Table 9) in Orleans Parish than the nation in 2021. New Orleans clearly is a top tourist destination that will recover from the 2020 Covid-19 Pandemic disaster.

Table 10 identifies the average annual employment concentration in the select industries in Orleans as measured against Louisiana and the United States as a whole. What does Table 10 tell us? Early on in this paper, it was noted that one economic development strategy for New Orleans was to further develop tourism-related economic activity and to develop industries in science and technology that would balance growth in the parish. *Table 10 tells us that in the areas of motion picture and video industries, traveler accommodation and drinking places, this objective has been met*. However, in the areas of software publishers, specialized design services, computer systems design and scientific research, the employment LQ suggests that these industries are dominated by a large number of establishments relative to the U.S. but lack a corresponding

employment base (see Table 4) per establishment. Relative to Louisiana, the concentration ratio for these industries looks favorable. However, for software publishers, computer systems design and related services and research and development services, the employment concentration index (Table 4) industries which are highly underdeveloped relative to the concentration for their counterparts in the U.S. In the language of the location quotient, these industries are local serving and are more likely to grow based upon demand for this service at the local level. It simply shows that these *industries (generally) are not oriented to the national market* and depends heavily on the health of local industries for their business. The word “generally” is used because there are outlier firms in the New Orleans that are oriented toward national or international markets.

Table 10

Concentration (LQ) Index for Average Annual Employment for Orleans Parish		
	2021	
Relative to:	Louisiana	U.S.
Industry		
Software Publishers	3.1	0.5
Motion picture and video industries	5.2	6.4
Specialized design services	3.2	1.3
Computer systems design and related services	1.8	0.7
Scientific research and development services	3.3	0.3
Traveler accommodation	3.0	3.5
Full-service restaurants	1.2	1.4
Drinking places, alcoholic beverages	5.1	5.3
Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting		

Table 11 focuses specifically on the competitive relationship *over time* between the select industries in Orleans versus those in the entire U.S. This table uses a concentration ratio for two data points (2004 and 2021) to better assess whether change has occurred over time. ***You can see little change in employment concentration relative to the U.S. in the technology and information industries in Orleans Parish.*** Overall, it appears that technology employment growth in Orleans Parish is driven by growth in the United States information and technology industries as a whole and probably lack locational advantages. The picture looks more favorable when reviewing the employment concentration indexes for motion pictures, traveler accommodation, full-service restaurants and drinking places industries. ***These industries are clearly driven by locational advantages*** and are oriented toward the capturing a national tourism market.

Table 11

Concentration (LQ) Index for Average Annual Employment for Orleans Parish		
	2004	2021
Relative to:	United States	
Software Publishers	0.0	0.5
Motion picture and video industries	3.8	6.4
Specialized design services	1.4	1.3
Computer systems design and related services	0.7	0.7
Scientific research and development services	0.4	0.3
Traveler accommodation	5.4	3.5
Full-service restaurants	1.7	1.4
Drinking places, alcoholic beverages	6.2	5.3
TOTAL AVERAGE ANNUAL EMPLOYMENT	247,260	174,200
Source: Quarterly Census of Employment and Wages; Systems Solution Consulting		

Motion picture and video industries have showed high concentration indexes for both number of establishments and employment in previous tables for Orleans Parish. Further, Table 6 shows average pay in motion picture and video production has substantially increased over the study period. However, the relative level of pay concentration index measured against the national concentration quotient yields a picture not as health as the absolute pay table shows. (Table 6). The salary concentration (Table 12) index comes in at 0.7 for 2021 relative to the U.S. concentration index. The employment concentration index for this industry (6.4, see Table 10), along with the establishment concentration index (2.0, see Table 9), gives insight to the structure of the industry locally. Average private sector pay (\$60,877 in 2021) best reflects the lower to mid-range skill profile of the Orleans Parish labor force in this industry relative to the *national level* (\$95,603 in 2021). Looking at the comparative change in percentage terms rather than absolute terms, the pay level in the motion picture and video industries increased less relative to the United States. *Between 2004 and 2021, motion picture and video industries annual average pay increased by 93% at the national level. In Orleans Parish, average pay increased by 248% (see Table 6) between 2004 and 2021.* Caution should be used when using this percentage change because the base year salary (2004) was only 35% of the national level. The gap between the national average and the local average has narrowed, with the local pay level increasing to 64% of the national level. Although the gap narrowed over the eighteen-year period of data, the gap between the Orleans Parish level and the U.S. level reflects the Orleans Parish skill demand is not likely on the high-end technical skills level. In short, the structure of the film industry is on the low-end technical level.

Table 12

Concentration (LQ) Index for Average Annual Pay for Orleans Parish		
	2021	
Relative to:	Louisiana	U.S.
Industry		
Software Publishers	0.7	0.4
Motion picture and video industries	0.9	0.7
Specialized design services	1.0	0.8
Computer systems design and related services	1.1	0.7
Scientific research and development services	0.9	0.6
Traveler accommodation	1.1	1.1
Full-service restaurants	1.2	1.3
Drinking places, alcoholic beverages	1.2	1.4
Source: Quarterly Census of Employment and Wages; Systems Solutions Consulting.		

It is slightly worrisome that in key indices, of employment and salary for software publishers, specialized design services, computer system design and scientific research and development, have not reached a level of agglomeration that would suggest an increase in comparative advantage for these select industries relative to the United States as a whole. In fact, the indices indicate that these sectors are local serving, mainly functioning to support other industries in the region. Looking at this concentration ratio over time between 2004 and 2021 disappointingly show little or no narrowing the gap. That would suggest that these industries have not matured to the level which would suggest greater concentration of employment and the associated skill levels that would command higher salaries.

CONCLUSION

(The Covid-19 Pandemic has affected the distribution of a major part of the data series affecting the calculated average vis-à-vis Orleans Parish. For example, the QCEW data shows that the collapse of Leisure and Hospitality employment and the associated payroll resulted in overstating the parish average in 2020. For example, and in 2019, Leisure and Hospitality employment in Orleans Parish represented approximately 27.7% of total parish employment with an average pay of \$28,268. In 2020, the fraction fell to 20.4% and average pay was \$28,916. The parish average in 2019 was \$53,691. This value jumped to \$60,492 in 2020. Why a 12.7% increase in one year? By substantially reducing the lower paying jobs in the overall distribution the average increases. Calculating the trend based upon the time series data yields (see Table 5) \$54,129, substantially less than \$60,492. The difference reflects the impact of reducing the lower paying jobs on the calculated average. This is also an example of how the frequency of a variable impacts a calculated average.)

This paper examined a select group of industries that currently drive a large part of the job growth (traveler accommodations, full-service restaurants and drinking places) in Orleans Parish. Also selected were those industries that many suggest will be needed to expand the potential of the New Orleans economy (software publishers, motion picture and video production, specialized design services, computer systems design and scientific research services) in the future.

This analysis clearly shows the importance of tourism related industries in the local economy as shown by Tables 8, 9 and 10. Correspondingly, the downside of this cluster is that salaries generated in these industries are quite low relation to the average for the parish (Table 6), ranging from 46% (Drinking Places, Alcoholic Beverages) of the average to 68% (Traveler Accommodation) of the average in 2021. These fractional values have, on the average, changed little between 2004 and 2021.

The “emerging” industries that are expected to broaden the economic base of the city reflect a mixed bag. Motion picture and video industries have shown success over the study period, particularly in the area of employment generated. However, the data suggests that **average pay is well below that of the U.S. average \$60,867 vs. \$95,603 in 2021**. This is disappointing since the industry in the city of New Orleans is almost 6 times more concentrated in employment (as shown in Table 10) than the nation in 2021. This suggests that high end technology work in motion picture and video production is (on the average) somewhere else.

Finally, the remaining sectors (software publishers, specialized design service, computer systems design and scientific research services) in the “emerging” industries and relative to employment concentration simply are still at the stage of local serving, as illustrated in table 10. Average pay in the software publishers’ sector in 2021 was 40% of the national average; average pay computer systems design and related services was 67% of the national average, and average pay in scientific research and development services was 59% of the national average. Some might argue that this disparity might reflect a comparative advantage for these industries in Orleans Parish to attract economic activity. Conversely, this pay differential could reflect a far less diversified skill set of the local labor force in these sectors, relative to the national market. Hence, the ability to attract national companies, without substantial public subsidies, is less attractive.

APPENDIX

Interpreting the Location Quotient is very simple. Only three general outcomes are possible when calculating location quotients. These outcomes are as follows:

LQ < 1.0	LQ = 1.0	LQ > 1.0
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LQ < 1.0 = All Employment is Non-Basic

A LQ that is less than zero suggests that local employment is less than was expected for a given industry. Therefore, that industry is not even meeting local demand for a given good or service. Therefore, all of this employment is considered non-basic by definition.

A LQ = 1.0 = All Employment is Non-Basic

A LQ that is equal to zero suggests that the local employment is exactly sufficient to meet the local demand for a given good or service. Therefore, all of this employment is also considered non-basic because none of these goods or services are exported to non-local areas.

A LQ > 1.0 = Some Employment is Basic

A LQ that is greater than zero provides evidence of basic employment for a given industry. When an LQ > 1.0, the analyst concludes that local employment is greater than expected and it is therefore assumed that this "extra" employment is basic. These extra jobs then must export their goods and services to non-local areas which, by definition, makes them Basic sector employment.

*Source: Florida State University
Department of Urban and Regional
Planning, Planning Methods III:
Forecasting*