

Online Journal of Rural Research & Policy

Volume 12

Issue 2 *How Have Retail Sales Patterns Changed Across America?*

Article 1

2017

How have retail sales patterns changed across rural America? A case study of Nebraska

Anil Giri

University of Central Missouri, giri@ucmo.edu

Bruce Johnson

University of Nebraska-Lincoln

Follow this and additional works at: <https://newprairiepress.org/ojrrp>



Part of the [Agribusiness Commons](#), and the [Agricultural and Resource Economics Commons](#)



This work is licensed under a [Creative Commons Attribution 4.0 License](#).

Recommended Citation

Giri, Anil and Johnson, Bruce (2017) "How have retail sales patterns changed across rural America? A case study of Nebraska," *Online Journal of Rural Research & Policy*. Vol. 12: Iss. 2. <https://doi.org/10.4148/1936-0487.1082>

This Article is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in *Online Journal of Rural Research & Policy* by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

Abstract

This study investigates retailing activity and trends at different spatial scales for the last quarter of a century, from 1990 to 2015, for Nebraska using data from the Nebraska Department of Revenue. The primary unit of measurement used to assess the retail strength was Pull Factor. The Pull Factor (PF), is widely used to identify and measure leakage and/or capture of retail trade across political boundaries as well as identifying trends over time.

Retailing is an important sector of any economy at all geographic levels and is watched carefully as an indicator of overall economic performance. For 2015 total taxable retail sales for the state was over 23 billion nominal dollars (slightly more than 13 percent of State Gross Product) for Nebraska. Results showed that population was the single largest factor that affected retailing activity. An analysis of top retail performers based on population class showed that all but one town employing the tax shift implications, by levying a local sales tax under the Local Option Revenue Act (applicable to cities) or Nebraska Revenue Statute 13-319 to 13-325 (applicable to counties), associated with their being trade-capture municipalities. This study also found that the higher (lower) the purchase index for motor vehicles, the lower (higher) the county retail pull factor for other taxable sales activity. This was because on average rural county residents spent relatively more on motor vehicle purchases than their metropolitan county cousins, which left less disposable income for other retail activity given no drastic differences in median household income levels across the state.

Rising unemployment and income stagnation, which reduced buying power and uncertainty among consumers, during the most recent recession years, slowed the growth of the retail sector significantly between the 2005 and 2010 period relative to both the pre-and post-time periods for the state. Recession consequences did not appear to be uniform across the town/city size classes of Nebraska communities. The smallest class of towns, less than 500 people, saw an increase in retail, most likely because retailing services are almost entirely inelastic goods and services that people need whatever the economic climate and the individual's economic condition. The metropolitan areas however saw a slight increase in retail dollar volume between 2005 and 2010 while their share of the state's total retail sales declined slightly.

How have retail sales patterns changed across rural America?

A case study of Nebraska

1. Introduction

Retailing is an important sector of any economy at all geographic levels. A majority of the time, metropolitan areas serve as retail centers for larger geographic areas as the volume of retail activity generated is certainly an important metric to those places. In the vernacular of economic development literature, these metropolitan areas represent Central Places in the concept of Central Place Theory (Shaffer, et. al.). However, this is also true in the smaller towns and cities that are constantly competing against the large super stores and outlets found in the larger cities/towns within an acceptable driving radius. Arguably, retail sales could be even more important to rural parts of the country because of their contribution to the local economy providing employment as well as goods and services. The recent trend towards greater online retail sales, driven by offerings of a wide variety of goods and services with efficient delivery to the buyer's door, is a challenge to location-based retailers everywhere. Forrester Research Inc., which studies and forecasts online sales, projects a 9.5 percent compound growth in retail activity for a projected \$414 billion in retail sales in 2018. For comparison purposes, 2013 retail activity totaled \$263 billion (Forrester Research Inc.). Also, the Center of Retail Research forecasts that almost 11 percent of retail activity will be online retail by 2018 (Center of Retail Research). Increasingly, both metro and non-metro Nebraskans are accessing a global network of retail providers without venturing into a brick-and-mortar building. This has resulted in substantial changes in retail sales patterns for large and small Nebraska communities alike which can have a significant effect on those communities. For example, 2015 total taxable retail sales for the state was over 23 billion nominal dollars (slightly more than 13 percent of State Gross Product) for Nebraska.

Using Nebraska as a case study, we analyze the retailing patterns across the state at different geographical scales. This study closely follows the model and framework used by Johnson and Blomendah in Nebraska's Retailing Patterns and Trends, 2007. However, in this paper, in addition to use of the latest data set, we examine the relationship of motor vehicle sales and retail sales and the effect of recession on retail activity across the state at different geographic scales.

This analysis can provide local community leaders, policy makers and businesses a basis for understanding retailing patterns and their community's retail health compared to neighboring localities as well as over time. Furthermore, the framework and model used in this study can be replicated to examine other states' retail changes at both spatial and temporal scales.

2. Primary Unit of Measure and Analysis

For the analysis, we use Pull Factor (PF) as the primary unit of measurement of retail strength. Pull factor is widely used to identify and measure leakage and/or capture of retail trade across political boundaries as well as identifying trends over time.

In essence, PF measures the relative market share of retailing by a specific geographic area over a specific time period. In this analysis, it is calculated by dividing the total annual per capita taxable retail sales for the local geographic area by the state average per capita sales which have occurred over the same time period.

Mathematically,

$$\text{Pull Factor (PF)} = \frac{\text{Local Per Capita Taxable Retail Sales}}{\text{State Average Per Capita Taxable Retail Sales}} \quad (1)$$

Adjustments for household income variation across geographic study areas can also be done to allow the pull factor measure to more realistically reflect a consistent purchasing power of the population. However, in this analysis, that adjustment was not done primarily because timely household income measures are not accessible down to the municipality level, particularly for smaller municipalities. So to maintain consistency across all the data sets as well as over time, an income adjustment was not made.

Interpreting the PF is straight-forward. If it is greater than 1.0, then the retail sales activity of that area has exceeded its own population in terms of customer equivalents. That geographic area has experienced some *retail capture* beyond the level inferred by its population base. The greater the area's PF exceeds 1.0, the more viable is its retailing activity in relative terms. Conversely, if the PF for the area is less than 1.0, that area is losing potential retail activity to other places, and is experiencing *trade leakage*, with the pull factor falling as leakage grows greater.

There is value in using the pull factor measure instead of the actual dollar volume of sales since a comparative analysis can be done over time even when there have been changes in tax policy. Total volume of taxable sales cannot be used directly as a good trend indicator of retail sales volume over time. But, by converting to the pull factor unit of measurement, the tax shift is essentially negated in the analysis, and the relative changes in retail viability over time can be more accurately evaluated for counties and municipalities.

3. Data Sources

Taxable Retail Sales: The primary source of taxable non-vehicle retail sales data¹ is the Nebraska Department of Revenue. We use the most recent year, 2015, data as well as earlier annual sales data for trend analysis. The Nebraska Department of Revenue maintains the data series for all years. These data are available at various geographic levels: city, town, county and state. This information is filed and collected as a part of collection of state and local sales tax revenues.

Motor Vehicle Sales: The primary source of taxable motor vehicle retail sales data is the Nebraska Department of Revenue. We use the most recent year, 2015, data as well as earlier annual sales data for trend analysis.

Population: Data for population was collected from the Census Bureau. We use the most recent year, 2015, data as well as earlier population data for trend analysis.

4. Methodology

In this analysis, we have classified Nebraska counties into four categories, *rural counties*, *small trade counties*, *large trade counties* and *metro counties*, based on 2015 population levels and the size of the largest municipality in the county. Based on the definition the Bureau of the Census, and U.S. Department of Commerce, *rural counties* were defined as those which contained no town larger than 2,500 people. 53 out of total 93 counties fell in this class and populations in this class ranged from less than 600 people in Arthur County to more than 8,500 people in Cedar County. Counties having the largest town with a population between a 2,500 and 7,500 were defined as *small trade counties*. 21 counties categorized as such, and population in this class ranged from less than 6,000 in Cedar County to more than 21,000 in Saunders County. Counties that did have a city of at least 7,500 people but less than 100,000 were defined as large trade counties; there were 13 counties in this class and population in this class ranged from about 11,000 people in Red Willow County to more than 61,000 people in Hall County. Prior to the 2010 U.S. Census, there were six counties that were classified by the U. S. Census as Standard

¹ For this study, non- Nebraska taxable sales, which are also part of total retail taxable sales of the state, are not included in the analysis. Non- Nebraska sales are predominantly sales made by large retailers which have headquarters outside the state and stores via mail, internet, etc. The data on non- Nebraska sales provided by the Nebraska Department of Revenue are not differentiated by counties and there is no reasonable way to distribute the sales. Thus, the analysis was done excluding that data component. For 2015, non- Nebraska sales were 19 % of the total retail sales for the state.

Metropolitan Areas (SMA's). These counties include all or a portion of a metropolitan area of 50,000 people or more. For purposes of this analysis to follow trend data back to 1990, these same counties were grouped as the metro counties for 2015, even though three additional counties are currently part of this Census classification in 2015.

In addition to the county classification and detail, this analysis of retailing also classified 547 Nebraska municipalities according to population size classes on the basis of 2015 population estimates. These class sizes were *population under 500*- 263 municipalities fell in this group (nearly 58 percent of municipalities in the state); *population of 500 to 999*- 85 communities comprised this size class; *population of 1,000 to 2,500*- 58 communities in the state comprised this class; *population of 2,500 to 4,999* - 17 communities comprised this class; *population of 5,000 to 9,999*- 16 communities comprised this class and are scattered across the state; *population of 10,000 to 19,999* – six cities comprised this classes; *population of 20,000 to 99,999* -eight cities fell into this class; and *population of 100,000 or more*- the state's two largest cities, Omaha and Lincoln comprised this class.

5. County- Level Retailing Patterns

The relative performance of the county classes for the period, 1990-2015 (Table 1 and Figure 1) shows that majority of the taxable retail sales has always been captured by Metro counties. This has been consistently true for more than two decades. The six counties out of the 93 counties in the state are in this category and capture (and have been capturing) almost two thirds of the state's total retail sales (57.2% in 1990; 65.5 % in 2000; 64% in 2005; 62.3% in 2005 and 64.1% in 2015). For the metro counties, the nominal taxable retail sales have been increasing by almost 20% every five years since 1990 except for the period, 2005-2010 (a modest 3%), growth which was largely due to the Great Recession of 2007-09. As of 2015 the taxable retail sales of \$ 23 billion represents a return to the longer historical growth rate. These counties also have an average pull factor of more than 1 for the time period which means that they been able to capture more retail sales than their population equivalent share. One primary reason is population growth at an increasing rate in these counties, often even at the expense of other counties in the state. In the latest year, 2015, these counties captured more than \$1.4 billion of taxable retail sales beyond their population equivalent, an amount more than the total taxable sales of the state's 52 rural counties.

The Large Trade Center county group has shown resiliency in retail trade when analyzed using percentage of sales by county class and pull factors. Both taxable retail sales as a percent of state's retail trade volume and pull factors have remained almost constant over time. These counties account for about one fourth of total state taxable sales. The taxable retail sale for these counties for 2015 was \$ 5.6 billion dollars. The average pull factor has been about 1.1 over the 25- year time period indicating that this group has been able, on average, to operate as trade-capture counties. In essence, the majority of the small cities in these counties are serving as regional satellite hubs and maintaining retail competitiveness. It is noteworthy that similar results

were found in the previous study. However, a change noticed compared to the 1990s is that the rate of increase of retail sales has slowed down. Taxable retail sales in these counties on average increased by slightly more than 12% from 2010 to 2015, which is less than the Metro Counties for the same period. However, the rate of increase in retail activity was greater (10% compared to 3%) for the period 2005 to 2010, suggesting the Great Recession affected retailing in these counties relatively less than Metro counties.

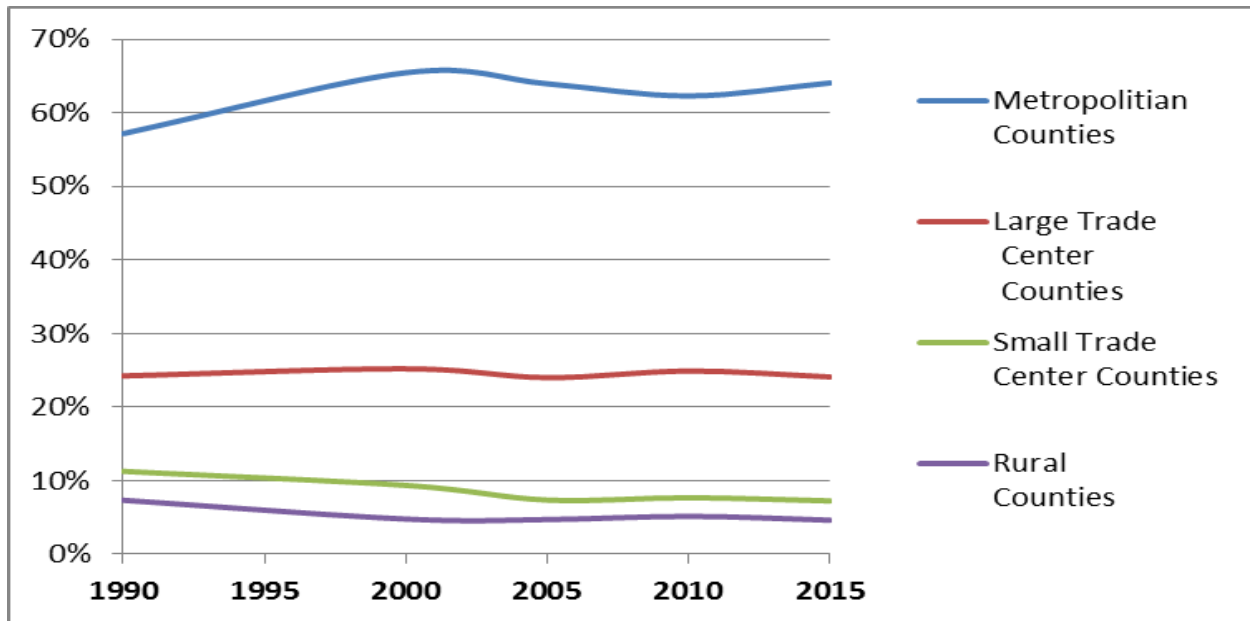
Table 1. Patterns of nominal taxable retail sales by County classes, selected years, 1990-2015

Year and Item	Non- metropolitan Counties				All Counties
	Metropolitan Counties	Large Trade Center Counties	Small Trade Center Counties	Rural Counties	
1990 Taxable Sales:					
Total (Mill \$)	5,699.40	2,415.70	1,122.80	730.1	9,968
% of Total Sales	57.2%	24.2%	11.3%	7.3%	100.0%
Avg. Per Capita (\$)	7,281	7,044	4,682	3,528	6339
Avg. Pull Factor	1.15	1.11	0.74	0.56	1.00
2000 Taxable Sales:					
Total (Mill \$)	9,760.60	3,756.20	1,392.60	7,10.4	14,909.40
% of Total Sales	65.5%	25.2%	9.3%	4.8%	100.0%
Avg. Per Capita (\$)	10,847	9,898	5,565	3,580	9,128
Avg. Pull Factor	1.19	1.08	0.61	0.39	1.00
2005 Taxable Sales:					
Total (Mill \$)	12,039.20	4,517.70	1,383.80	884.5	18,825.20
% of Total Sales	64.0%	24.0%	7.4%	4.7%	100.0%
Avg. Per Capita (\$)	12,581	11,533	6,357	4,597	10,704
Avg. Pull Factor	1.18	1.08	0.59	0.43	1.00
2010 Taxable Sales:					
Total (Mill \$)	12,408.57	4,959.65	1,526.40	1,021.77	19,916.40
% of Total Sales	62.3%	24.9%	7.7%	5.1%	100.0%
Avg. Per Capita (\$)	12,072	12,531	7,081	5,020	10,905
Avg. Pull Factor	1.11	1.15	0.65	0.46	1.00
2015 Taxable Sales:					
Total (Mill \$)	14,821.85	5,573.44	1,672.70	1,064.09	23,132.08
% of Total Sales	64.1%	24.1%	7.2%	4.6%	100.0%
Avg. Per Capita (\$)	13,490	13,920	7,779	5,847	12,199
Avg. Pull Factor	1.11	1.14	0.64	0.48	1.00

Based on taxable retail sales as reported to the Nebraska Department of Revenue

The nominal taxable retail sales for Small Trade County class for 2015 were nearly \$ 1.7 billion. The small trade counties on average show a trade leakage, measured by pull factor consistently less than one for the entire period. For the class, the average pull factor of .64 for 2015 suggests a retail leakage of more than a third of their trade potential. All but three counties, Cherry, Cheyenne and Keith, in this class had pull factor of less than one. A notable mention in this county class is Cheyenne County (home to Cabela’s headquarters) which had a 2015 pull factor of 1.22, similar to that of previous years. Cheyenne was able to hold to its advantage in retail sales in large measure because of the trade volume captured by the Cabela’s retail outlet marketing primarily to customers traveling on Interstate 80. For 2015, the nominal taxable retail sales for the Rural Counties were \$ 1.1 billion. The rural counties had a similar story to that of the small trade counties- virtually all of the counties experiencing severe trade leakage. For 2015, the trade leakage was more than half of their trade potential just as in previous years. This county class has shown slight progress in the pull factor in the recent years and stands at .48 for 2015. All but two counties, Brown (1.05) and Hooker (1.12), had pull factors less than one in this county class.

Figure 1: Net Taxable Sales Distributed by County Class 1990-2015

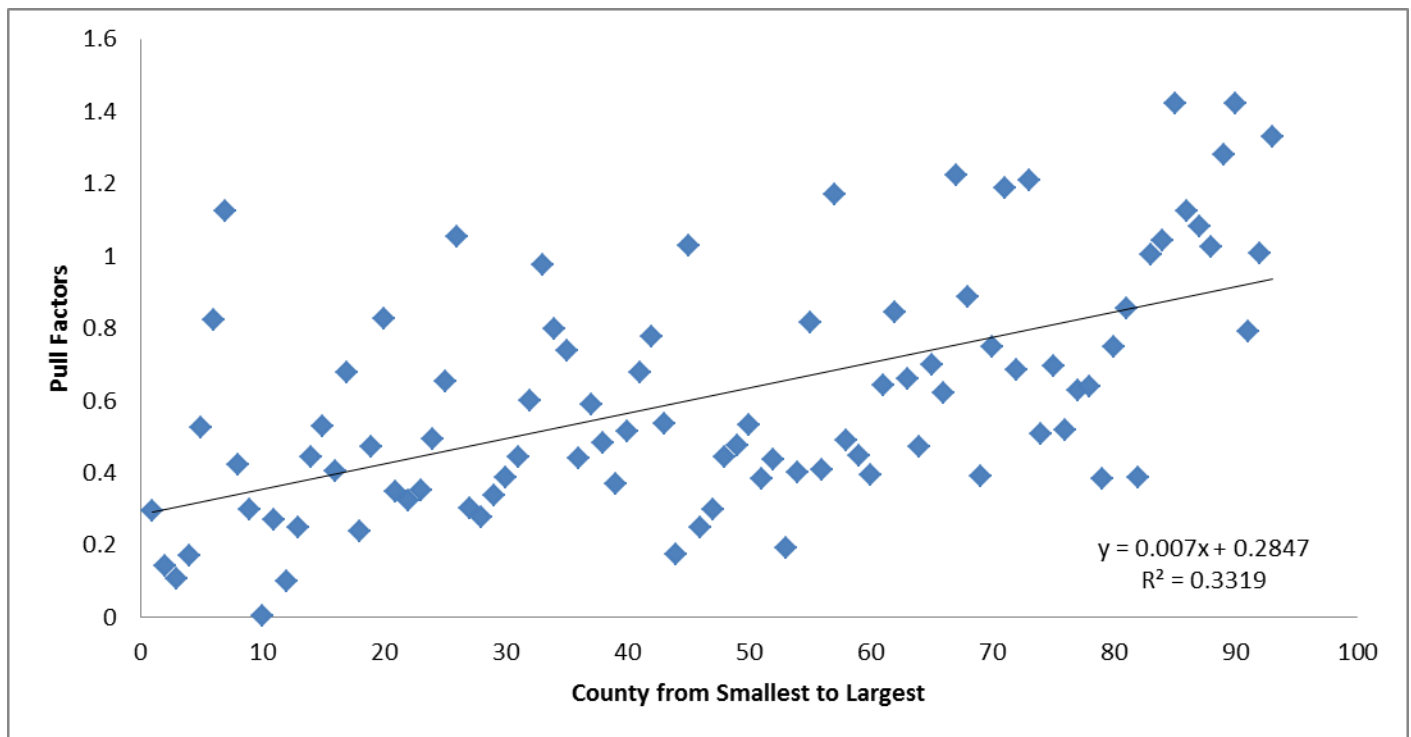


In summary, less than one-fifth (16) of Nebraska’s 93 counties recorded a 2015 retail pull factor of greater than one, indicating they were trade-capture counties. For half of these counties, Interstate 80 runs through them, which affords opportunity to capture retail trade from travelers, as well as providing greater ease of transportation for customers from nearby counties.

6. County Level Pull Factors and Population

County population tends to be the single largest factor that affects retailing and corollary the pull factor for that county. In this analysis, counties were cardinally ranked from one to 93, based on their relative population size and the pattern was analyzed. As seen on Figure 2, the pull factors do increase as the county population size increases. The trend line in the graph suggests that the larger the county population, the higher the county pull factors, tend to be. However, it should be noted, that the fitted line also suggests the vast predominance of county pull factors far below one; in other words, trade-leakage occurs in many counties, even when relative county population levels are towards the upward end of the size distribution.

Figure 2: 2015 County Pull Factors from Smallest to Largest Population



7. Town/ City Retail Patterns

Using taxable retail sales for individual Nebraska towns and cities, municipalities were grouped into eight population size classes (as stated earlier) and average pull factors were calculated for selected years up through 2015. As seen in Table 2, the two smallest size classes of communities' experience extreme trade leakage.

Table 2. Weighted average pull factors by Nebraska town/city population size class for selected years and percent changes.

Town/City Population class	Average pull factors of taxable retail sales activity for selected years:					Percentage changes in pull factors				
	1990	2000	2005	2010	2015	1990 to 2000	2000 to 2005	2005 to 2010	2010 to 2015	
	-----Pull Factors-----									
Less than 500	0.55	0.51	0.50	0.60	0.57	-8.35%	-0.99%	20.00%	-5.00%	
500-999	0.73	0.59	0.67	0.68	0.63	-18.41%	12.96%	1.34%	-7.35%	
1,000-2,499	0.96	0.75	0.79	0.91	0.84	-21.56%	5.31%	14.75%	-7.69%	
2,500-4,999	1.18	1.12	1.10	1.00	1.15	-5.01%	-1.52%	-9.17%	15.00%	
5,000-9,999	1.10	1.08	1.03	1.11	1.24	-1.45%	-5.07%	7.87%	11.71%	
10,000-19,999	1.29	1.19	1.21	1.41	1.60	-7.61%	2.02%	16.24%	13.48%	
20,000-99,999	1.26	1.35	1.19	1.39	1.38	6.97%	-11.93%	16.90%	-0.72%	
100,000 and over	1.40	1.58	1.47	1.48	1.41	12.33%	-7.04%	1.02%	-4.73%	

Based on taxable retail sales as reported to the Nebraska Department of Revenue

For the 263 municipalities with populations of less than 500, the average pull factor has slightly gone up to 0.57² since 2000 (0.51); implying that even while they are improving slightly in their trade; their trade loss has been equivalent to more than 40 percent of their resident population equivalent. However, their median pull factor (that level where half the pull factors are below and half are above) for this size group is nearly the same, 0.365 in 2000; 0.380 for 2005; 0.39 for 2010 and 0.37 for 2015 suggesting an even greater trade leakage. Further evidence of retail weakness is observed as only 41 of the 263 municipalities (16 percent) recorded a pull factor of greater than one in 2015.

For the 85 municipalities with populations of 500 to 999 in 2015, the mean and median pull factors were .63 and .56 respectively, meaning the trade loss was slightly more than 35 percent of their population equivalents. The long-term trend of trade loss, indicated by the pull factor average, has been fairly stable for this class. For 2015 only 13 of the 85 municipalities (15 percent) had retail pull factors of greater than one. There are 60 municipalities with populations of 1,000 to 2,499 and this size group experienced some increase in average retail pull factor between 2005 and 2015; however, the average pull factor was still lower compared to its highest of 0.96 in 1990. The recent trend from 2010 to 2015 show a decrease in average pull factor by almost 8%. The average and median were 0.84 and 0.77 respectively for 2015. Their size typically limits retail diversity in these towns, which in turn, affects their retail performance; so some trade leakage generally occurs. For 2015, 18 municipalities in this size group (30 percent)

² This study mostly focuses on descriptive statistics and the long term trend has not been analyzed for statistical significance.

had pull factors greater than one. And, in most cases these more-vibrant retail trade centers were capturing trade from larger but more sparsely-populated areas of the state.

For the 17 towns of 2,500 to 4,999, a fairly consistent trade pattern well above a pull factor of one is evident from 1990 onward. The average and median pull factor for the most recent year, 2015, is 1.15 and .96 respectively. Given that the median pull factor for this class is less than 1.0, this is evidence that the modest trade capture is not being distributed evenly across these towns. The town pull factors vary widely from .67 in Wahoo to 2.04 in Valentine. Nearly half of the towns (47 percent) have pull factors greater than one for 2015 suggesting trade capture. In several instances, they represent area trade center towns in the more rural areas of the state, and maintain robust, albeit smaller, retail functions. If the transportation costs were to increase these communities could probably expect to see an increase in retail; however, at the same time increase in online retail trade can reduce their trade. For the 15 towns of 5,000 to 9,999, some increase in trade pattern is evident since 2005. On average they are basically capturing the trade of their population equivalent plus nearly 25 percent more. Also, their median pull factor is greater than 1 at 1.04 which suggests that the trade capture is being distributed more evenly across these towns.

Six towns of 10,000 to 19,999 clearly can perform a more comprehensive retailing role than their smaller counterparts; their average and median pull factors for the most recent year was 1.60 and 1.20 respectively. On average they are capturing retail sales of more than 50 percent of their population equivalent. To be sure, some communities in this group of 15 are very strong retail centers, but a good number are geographically located in close proximity to a much larger center such that trade capture is difficult. Moving into the remaining two largest size class of municipalities, retail trade capture is more the norm than the exception. For the 8 cities with population between 20,000 and 99,999 the average and median pull factor were 1.38 and 1.51 in 2015. All but one of these cities exhibit very strong retail capture operating as essentially regional trade hubs. And, when combined with quality health, educational and financial services, they become ever more robust in retail activity. The one exception to this pattern is Bellevue which is adjacent to the state's largest city of Omaha and this makes it a challenge to even minimize trade leakage. It appears that their trade capture has levelled off as there was little change in average pull factor from 2010 to 2015. Similarly, the two cities of the state with population greater than 100,000 the average and median pull factor was 1.41 and 1.41 respectively. However, Omaha remains, by far, the dominant retail center of the state, with a pull factor of 1.62 in 2015. In fact, in 2015 with nearly \$8.8 Billion taxable retail sales, it accounted for 38% of the state total.

The evidence is substantial that the larger cities of the state command a dominant retail role; and while changes can and do occur over time, it is quite unlikely that pattern will subside in the future.

8. The Effect of the Great Recession on Nebraska Retailing Activity by Town/City Size Classes

As noted previously, annual growth of retail dollar volume in Nebraska slowed significantly between the 2005 and 2010 period relative to both the pre-and post-time periods. That correlates with the recession which began in the last quarter of 2007 and was still in early stage of recovery by 2010. Rising unemployment and income stagnation during a recession create reduced buying power and rising uncertainty among consumers which tend to throttle back consumer spending. But, as evident in Table 2, those impacts did not appear to be uniform across the town/city size classes of Nebraska communities. In fact, the smallest class of towns of less than 500 people saw a pull factor increase of 20 percent from 2005 to 2010. This may be explained by the fact that in these smallest of communities the retailing services are almost entirely for basic goods and services that people need whatever the economic climate and the individual's economic condition. Also, contributing to a relative uptick in retail performance in these small towns was the significant spike in gasoline prices at the time, which likely further reduced customer incentives to travel greater distances to larger trade centers for their basic needs. Furthermore, to the extent that many of these smaller communities are often serving a local agricultural economy, the relative robustness of agriculture at the time may well have spared them from the full brunt of the national recession. In contrast, the largest population class experienced almost no decrease in their pull factor – one possible reason being that higher-cost retail goods and services tend to be concentrated in those centers, and hence, total buyer sales volume fell off relatively more.

9. High Retail Performance Towns/Cities

The retail data and analysis suggest great variability across municipalities, even when compared with their similar-sized counterparts. Therefore, it is useful to identify the high performance towns/cities and attempt to understand the contributing factors to their strong retailing activity. We have identified the top five towns in each size class by their 2015 taxable retail sales pull factor (Table 3).

Table 3. Town/cities with highest 2015 retail pull factors by selected population size classes

Town/City Population Class	Number of incorporated town/cities	Highest ranking town/city by 2015 pull factor				
		1st	2nd	3rd	4th	5th
Less than 500	263	Whiteclay (42.17)	Roca (10.18)	Thedford (2.73)	Fordyce (2.71)	Pickrell (2.57)
500-999	85	St. Edward (1.86)	Hay Springs (1.41)	Ceresco (1.38)	Humphrey (1.32)	Ft Calhoun (1.29)
1,000-2,499	60	Hartington (2.30)	Ainsworth (1.80)	Imperial (1.61)	Stombsburg (1.60)	Albion (1.51)
2,500-4,999	17	Valentine (2.04)	Ogallala (1.85)	Broken Bow (1.83)	Oneill (1.77)	West Point (1.32)
5,000-9,999	16	Gretna (3.72)	York (1.94)	Sidney (1.76)	McCook (1.62)	Blair (1.37)
10,000-19,999	6	Papillion (2.55)	Scottsbluff (2.12)	Lexington (1.22)	Beatrice (1.18)	La Vista (1.13)
20,000-99,999	8	Norfolk (1.90)	Kearney (1.80)	Grand Island (1.66)	North Platte (1.60)	Columbus (1.42)
100,000 and more	2	Omaha (1.62)	Lincoln (1.08)			

Based on taxable retail sales as reported to the Nebraska Department of Revenue

In the less than 500 population size class, only one or few retail establishments can dramatically accelerate taxable sales activity which then shows up as a very high retail performance for the community as a whole. For example, Whiteclay outranks all others by a huge margin. The main reason for this small town with estimated population of only 10 people is high sales of alcohol (more than 3 million cans of beer per year) to residents of the nearby Rosebud Indian Reservation. *Note: the questionable ethical integrity, if not its legality, of this retail focus would certainly nullify its credibility as any retail center to emulate.* Similarly, Roca with an estimated population of 220 ranks second with a pull factor of 10.18 as a result of few large retailers which again sell to a customer base beyond the local population. For the 500 to 999 population size class, St. Edward leads the list with a pull factor of 1.86. The remaining four communities had much more modest trade capture measures in 2015.

Highest ranking towns in both the 1,000 to 2,499 and the 2,500 to 4,999 groups were all county-seat communities in lower population-density areas of the state. Their role tends to be the primary local trade center for the surrounding area, and consequently they capture a sizable trade volume beyond their own population equivalents. Particularly the near-by agricultural industry looks to these communities as key centers for such needs as banking services, livestock auction barns, feed and veterinarian services, agricultural cooperatives, farm machinery supplies and services, etc.

Gretna, which is the fastest growing community in the state since 2010, is by far the highest retail performer in the 5,000 to 9,999 population class. For Gretna, the recent rebuilding and expansion of a discount mall adjacent to Interstate 80 has provided much of its recent retail strength. York, Sidney and McCook also recorded strong retail capture in 2015.

There are only six Nebraska communities with populations of 10,000 to 19,999; therefore, Table 3 is not particularly revealing. It does show considerable variation in which Papillion records an extremely strong retail pull factor in 2015 followed by Scottsbluff while the other similar-sized communities are distant in their respective pull factor measures. Clearly, Scottsbluff remains as a very strong larger trade center in western Nebraska. The eight cities in the 20,000 to 99,000 size class are clearly of a size where very robust retailing can and usually does occur. The top five performing cities are all regional trade centers for the state, providing a full array of retail trade for their regional populations. Their trade capture performance is impressive, with the top three cities registering larger pull factors in 2015 than Omaha, the state's largest city.

Among the only two population centers, Omaha and Lincoln, with population more than 100,000 Omaha remains a powerful player in state's retail sector. Omaha, due to sheer population numbers, its close proximity to some Iowa towns, and continually large trade capture operates as a 'retail magnet'. However, it is noteworthy that the pull factor for Omaha has appeared to remain fairly steady since 2005. This could be because the city is still recovering from the recession which curbed some retail activity. But, it may also be reflecting some change in customers' purchasing habits, using more online stores, rather than buying from geographic outlets in large cities.

10. Top Performing Towns/Cities in Terms of Pull Factor Increases Since 2005

Across the various size classes of town/cities, there are some municipalities which have recorded very notable increases in their retail trade capture (as measured by the pull factor metric) since 2005. In towns of less than 500 population, very significant changes in annual taxable retail sales can occur over a short period of time with the simple addition or subtraction of a single retailer. Thus, for these smaller towns, shifts in pull factor are less meaningful in terms of assessing general retail health of the community. But for the larger size classes of towns/cities, the pull factor shifts are useful in identifying the municipalities that have outperformed their peers over a period of time. The percentage changes in pull factors between 2005 and 2015 for the top performers are presented in Table 4.

For the 500-999 population group, St. Edward with a 289 percent increase and Palmyra with a 227 percent increase clearly excelled over all the other towns in that size group, and, in fact, with percentage gains that were matched in only two other municipalities in the state—Papillion with a retail pull factor increasing by 296 percent and Gretna recording a 219 percent increase. Virtually all of the other fast-growing trade municipalities recorded much more modest gains as measured by the change in their respective pull factors. A variety of factors can contribute to significant improvements in pull factors. As previously mentioned, the re-opening

and expansion of Gretna’s outlet mall just off of Interstate 80 has certainly propelled much of that municipality’s retail gains over the past decade; but also the fact that the town itself, bordering the greater Omaha metropolitan area, has experienced phenomenal population gains in recent years and with that population greater retail activity overall. Likewise, the larger town of Papillion in the shadow of Omaha has experienced tremendous growth of retail activity as rapid population growth has encompassed the surrounding area. Both variety of retail goods and services as well as dollar volume grow this the potential customer base of the area.

It is noteworthy here that over the period 2005-2015, both of the state’s largest municipalities, Omaha and Lincoln experienced some percentage decline in their respective pull factors, a minus 2 percent and a minus 15 percent respectively. While the change in Omaha’s performance is relatively minor, Lincoln’s percentage decline seems more problematic and worthy of further research. However, for Lincoln one contributing factor could be its very robust population growth in recent years with a somewhat lagging growth of retailing. A second factor may lie in the fact that Lincoln is a university town with more than 25,000 students at the University of Nebraska—Lincoln campuses as well thousands of other students enrolled in a number of other university and college campuses in Lincoln. College students, don’t represent the more typical household consumers in terms of buying patterns and overall dollar volume of purchases. In fact, it is this younger element of today’s consumer society, they are more likely to purchase more goods and services online; and it is that trend which has tended to accelerate in recent years.

Table 4: Town/cities with highest pull factor percentage increase from 2005-2015 by selected population size classes

Town/City Population Class	Number of incorporated town/cities	Highest percentage change in pull factor between 2005-2015				
		1st	2nd	3rd	4th	5th
500-999	85	St Edward (289)	Palmyra (227)	Tilden (160)	Trenton (74)	Cedar Bluffs (69)
1,000-2,499	58	Stanton (63)	Springfield (62)	Tecumesh (49)	Hartington (36)	Battle Creek (36)
2,500-4,999	17	Fairbury (34)	David City (26)	Ogallala (25)	Gothenburg (23)	Broken Bow (13)
5,000-9,999	15	Gretna (219)	Seward (92)	Sidney (86)	Crete (34)	Blair (18)
10,000-19,000	6	Papillion (296)	S Sioux City (22)	La Vista (11)	Lexington (8)	Scottsbluff (6)
20,000-99,999	8	Hastings (9)	North Platte (7)	Norfolk (5)	Fremont (4)	Columbus (3)
100,000 and more	2	Omaha (-2)	Lincoln (-15)			

Based on taxable retail sales as reported to the Nebraska Department of Revenue

11. Local Sales and Use Tax

Cities and counties in Nebraska are eligible to levy a local sales tax under the Local Option Revenue Act (applicable to cities) or Nebraska Revenue Statute 13-319 to 13-325 (applicable to counties). Presently, more than 200 Nebraska cities and towns are exercising that option. The local tax rate levied by these municipalities ranges from 0.5 percent to the maximum allowable percentage of 2.0 percent.

Analysis of the effectiveness of this local tax rate using the pull factor metric can give valuable insight into the relative tax shifts both within and outside the respective community. It is obvious that community with a strong retail sales sector would be most likely employing a local tax due to the greater dollar revenue generated. But, additionally, if it is a trade capture community (pull factor greater than 1.0) then there is some tax shift from community residents to non-residents who purchase taxable goods and services from that community. For example, if the community's pull factor is 1.5, then for every dollar of local sales tax paid by local residents, there would be an additional \$.50 of local tax collected from non-residents --essentially a Tax Transfer. Conversely, if a jurisdiction has a relatively weak retail sector with a pull factor of less than one, then there is essentially not a tax shift to non-residents, but rather some internal shift among local retail customers based on their relative purchase patterns of taxable goods and services. Furthermore, local sales tax collections can also have some implications on municipal property tax rates. For instance, if a community is trying to reduce local municipal property taxes by shifting some of the tax burden to sales tax revenue, then that also represents some internal tax shifts among local residents.

An analysis of top retail performers based on population class was done to see how these towns/cities had additional local taxes. Table 5 shows that all but one town employing the tax shift implications associated with their being trade-capture municipalities. For these communities, non-resident consumers are essentially paying a portion of the local sales tax. In fact, for Omaha, non-resident consumers are basically paying 38 percent of the local sales and use tax collected. In contrast Lincoln, the second largest town based on population, with a pull factor of only 1.08 suggests a shift to non-residents of only 7.4 percent. All cities/ towns had local tax rate of at least 1 percent or more with three of them having the highest rate of 2 percent.

Table 5: Local Sales and Use Tax for the top performers

Population Size Classes	Town/City	Sales Tax Rate		Pull Factors				
		Local (%)	Total (%)	1990	2000	2005	2010	2015
500-999 top performers	St. Edward	1	6.5	0.62	0.40	0.48	1.26	1.86
	Hay Springs	1	6.5	0.72	0.80	0.98	1.37	1.41
	Ceresco	1.5	7	1.84	1.93	1.57	1.44	1.38
	Humphrey	1.5	7	2.47	1.27	1.51	1.84	1.32
	Ft Calhoun	*	5.5	0.50	0.47	1.02	0.87	1.29
1,000-2,499 top performers	Hartington	1	6.5	1.82	1.28	1.69	2.03	2.30
	Ainsworth	1.5	7	1.46	1.17	1.42	1.53	1.80
	Imperial	1	6.5	1.79	1.23	1.34	1.64	1.61
	Stromsburg	1.5	7	1.13	1.13	1.19	1.61	1.60
	Albion	1.5	7	1.75	1.25	1.31	1.62	1.51
2,500-4,999 top performers	Valentine	1.5	7	1.68	2.21	1.90	1.70	2.04
	Ogallala	1.5	7	1.89	1.54	1.49	1.62	1.85
	Broken Bow	1.5	7	1.59	1.48	1.63	1.84	1.83
	O'Neill	1.5	7	1.96	1.62	1.59	1.83	1.77
	West Point	1.5	7	1.58	1.45	1.44	1.33	1.32
5,000-9,999 top performers	Gretna	1.5	7	0.46	1.67	1.16	1.27	3.72
	York	2	7.5	1.47	1.70	1.86	1.89	1.94
	Sidney	2	7.5	1.11	2.09	0.95	1.80	1.76
	Mccook	1.5	7	1.73	1.94	1.60	1.72	1.62
	Blair	1.5	7	1.20	1.25	1.16	1.18	1.37
10,000-19,999 top performers	Papillion	2	7.5	0.48	0.63	0.64	1.67	2.55
	Scottsbluff	1.5	7	1.93	2.06	2.00	2.29	2.12
	Lexington	1.5	7	1.59	1.02	1.12	1.26	1.22
	Beatrice	1.5	7	1.12	1.29	1.19	1.16	1.18
	La Vista	2	7.5	0.49	1.21	1.02	1.02	1.13
20,000-99,999 top performers	Norfolk	2	7.5	1.58	1.82	1.81	1.86	1.90
	Kearney	1.5	7	1.41	1.76	1.75	1.84	1.80
	Grand Island	1.5	7	1.49	1.70	1.67	1.67	1.66
	North Platte	1.5	7	1.25	1.38	1.50	1.57	1.60
	Columbus	1.5	7	1.33	1.35	1.38	1.37	1.42
100,000 and more top performers	Omaha	1.5	7	1.58	1.73	1.65	1.74	1.62
	Lincoln	1.75	7.25	1.09	1.32	1.28	1.07	1.08

* Data not available and/or no local tax

Data source: Nebraska Department of Revenue rates effective January 1, 2017 and authors' calculations

12. Motor Vehicle Purchases

As noted initially in this report, this retail analysis has been based entirely upon taxable retail sales in Nebraska less motor vehicle sales, which are also taxable but not collected by the dealer/seller at their municipality and county of location but rather by the buyer’s county of residence. Nonetheless, there is no question that purchases of motorized (and licensed) vehicles generally represent a substantial dollar outlay in most individual household and business budgets. In fact, the automobile or truck for personal and/or business use will often be the big-ticket expenditure by far. Consequently, the dollar magnitude of such outlays can, and will, impact the expenditure patterns of the remaining discretionary income of one’s budget. To put into a dollar perspective, in 2015, total taxable retail sales (less motor vehicle sales) totaled \$23.1 billion, while motor vehicle purchases by residents in Nebraska in that year totaled \$4.0 billion. On a per capita basis, this converts to \$12,199 and \$2,111 respectively or for a typical household family of four, the total expenditures in 2015 averaged \$48,796 for non-vehicle goods and services with an additional \$8,444 (or 17 percent) paid out for the purchase of their motorized transportation. Since, sales taxes are collected by the buyer’s county of residence, it is possible to assess patterns of motor vehicle purchases across Nebraska counties and observe any patterns. Table 6 shows a summary synopsis of the 2015 per capita purchase of motor vehicles for each county and associated “purchase indices” for the four county classifications.

As expected, metropolitan counties accounted for more than half (nearly 52 percent) of the total motor vehicle purchases in 2015 (Table 6). However, the average per-capita purchase was lower than that of all the other county classes. In fact, it was the rural counties which recorded the highest per capita purchases in 2015 with an average of \$3,154 per capita, or 48 percent above that of the metropolitan county group.

Table 6: Taxable Motor Vehicle Purchases by County classes, 2015

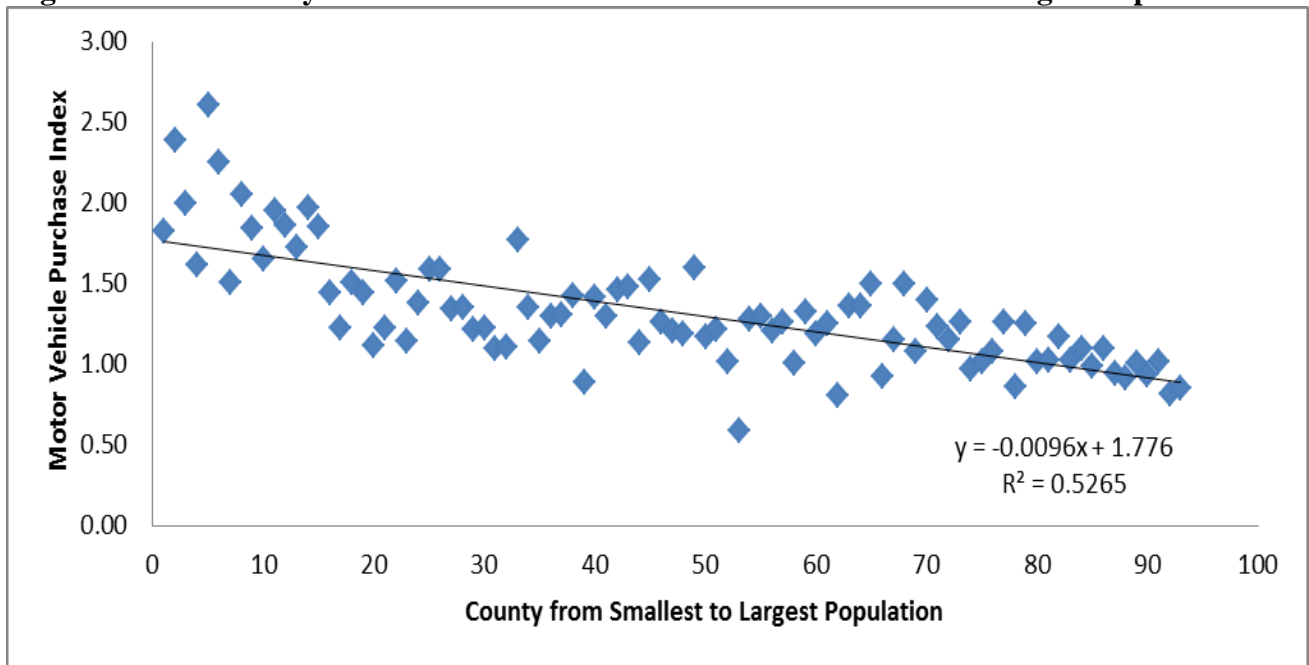
2015	Metropolitan Counties	Non- metropolitan Counties			All Counties
		Large Trade Center Counties	Small Trade Center Counties	Rural Counties	
Total (Mill \$)	2,076.37	870.52	544.99	510.94	4,003
% of Total Sales	51.9%	21.7%	13.6%	12.8%	100%
Avg. Per Capita (\$)	2,129	2,250	2,567	3,154	2,111
Avg. Purchase Index	1.01	1.07	1.22	1.49	1.00

Based on data reported by the Nebraska Department of Revenue

From Figure 3, it is noteworthy that the lowest-populated counties have some of the highest per-capita outlays. The logic of this pattern is one of need more than preference. Nebraskans across the rural and other non-metropolitan counties must travel farther distances for

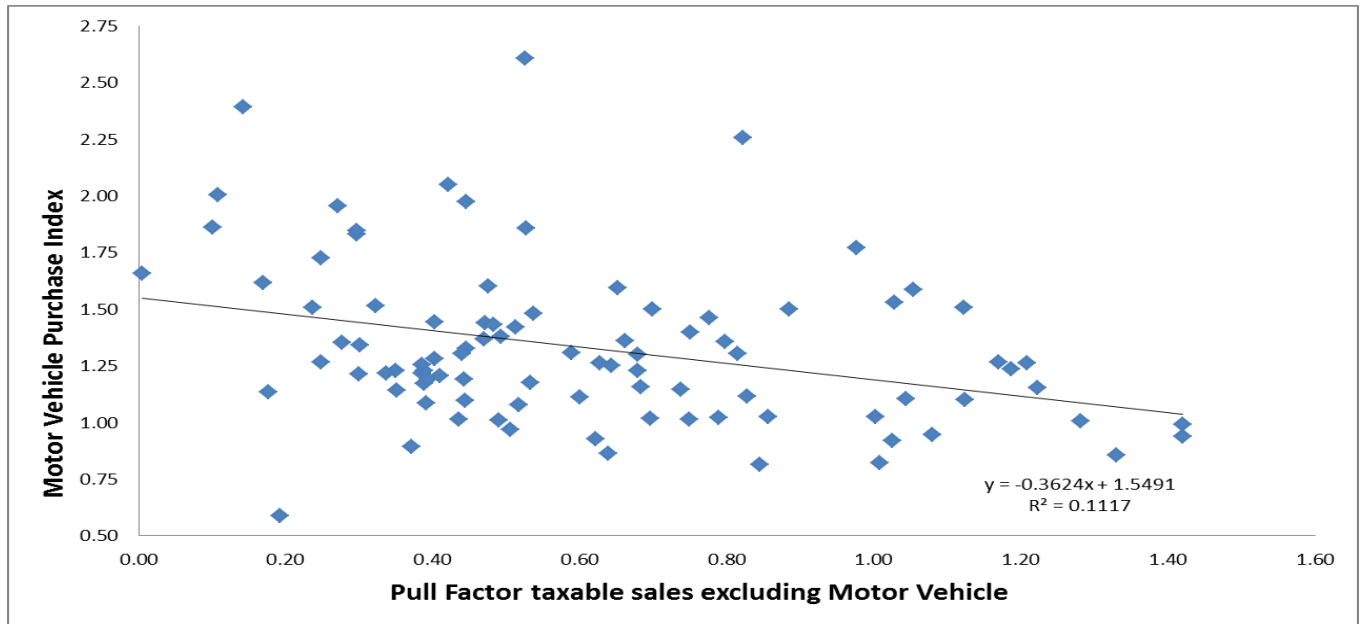
job and lifestyle needs, and so must bear a significantly larger dollar outlay for vehicle replacement. Additionally, the agricultural sector of the state requires farm families and others working in the agricultural sector to drive far more miles per year than their urban counterparts, and over road conditions that will contribute to greater wear and tear on vehicles. Finally, the higher incidence of self employed in the work force of rural areas would lend to the need for higher investment in business related vehicles in the rural areas.

Figure 3: 2015 County Motor Vehicle Purchase Index from Smallest to Largest Population



Implications of the above are that per-capita retail patterns across the state of Nebraska are reflecting, at least in part this need for higher dollar outlay needs associated with transportation. On average rural county residents need to spend relatively more on motor vehicle purchases than their metropolitan county cousins, which can leave less disposable income for other retail activity given no drastic differences in median household income levels across the state. This relationship can be observed in Figure 4. Even though the relationship is not particularly strong, it can be observed in Figure 4, that higher (lower) the purchase index for motor vehicles, the lower (higher) the county retail pull factor tends to be for other taxable sales activity.

Figure 4: 2015 County level Motor Vehicle Purchase Index vs Pull Factors Excluding Motor Vehicles



13. Conclusions and Implications

Retailing patterns across Nebraska have continued to evolve over the past quarter century. While some deviation occurred during the most recent U.S. recession, the greater share of retail volume continues to shift toward the urban and larger population areas of the state. In part, this reflects shifts in the state’s population distribution. But it is also being driven by decisions on both the supply and demand side of the retail sector. By 2015, six metropolitan counties in Nebraska were accounting for nearly two-thirds (64 percent) of total taxable sales. And when combined with the 13 large trade counties (each having a city of at least 7,500 people but less than 100,000) these 19 counties accounted for 88 percent of the state’s total taxable retail volume in 2015. Given their share of Nebraska’s population is 79 percent, it shows a significant retail trade capture from the remaining 74 Nebraska counties. But even within these larger populated county classes, there are substantial differences in trade capture. In the Metro County Class, Douglas County (Omaha) essentially dominates, registering 60 percent of the class total volume and nearly 38 percent of total taxable sales in Nebraska during 2015. In contrast, four of the metro counties (all of which are located adjacent to a larger metro county experienced some trade leakage in 2015, as did also three of the 13 counties in the large trade center class. In short, sheer population density does not always work in favor of retail activity.

As for the Smaller Trade and Rural counties scattered across the state, they continue to struggle to keep the majority of the retail trade potential that their population numbers would suggest. Maintaining a “critical mass” of retail goods and services is the ongoing challenge for most of them. Their local populations increasingly travel to the larger trade centers for many

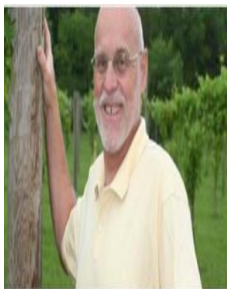
retail goods and services as well as buying “*online*”; leaving their smaller local retail outlets to cover little more than the most basic of goods and services.

Yet, despite these ongoing trends, there remain communities across the complete size continuum that continue to be viable retail centers, albeit with an evolving mix of retail activity. For some of these communities, their considerable distance from larger population centers allows them to remain competitive in serving the area populations. In contrast, just the opposite occurs for other smaller communities where being in the shadow of a larger metro center or adjacent to a major highway network allows opportunity to serve a greater population base, not only with basic/convenience goods and services but also at times with retail “niches” for specialty products. Additionally, there are communities with at least some of their retailers capturing larger revenues via on-line marketing and sales. Internet is clearly a tool to expand customer base regardless of trade center size or geographic location. And this is very likely to grow in the future as customers everywhere become more accustomed to shopping on-line for selection, price, and sheer convenience. This is not to say that traditional retailing patterns will eventually disappear in the future since the personal buyer/seller interaction will always remain important to customers on many fronts. So the relative viability of the retail sector will remain a critical component of any community’s economic vigor and general quality of life.

Finally, similar studies should be done to in other states to compare within state and across Midwest states retail sales pattern over time. Their results could be of significant interest to policy makers as they consider levying more or less sales tax. Furthermore, similar studies could also help to determine the likely consequences of rapidly growing online sales so mechanisms can be put in place to collect online sales tax if desired.



Anil Giri is Assistant Professor of Agriculture – Agri-Business at the University of Central Missouri in Warrensburg.



Bruce Johnson is Emeritus Professor of Agricultural Economics at the University of Nebraska-Lincoln in Lincoln.

References

Center of Retail Research, The Retail forecast for 2016-2017, Jan 2016, available at:
<http://www.retailresearch.org/retailforecast.php>

Forrester Research Institute, Media Center, May 2014, available at:
<https://www.forrester.com/US+Mobile+And+Tablet+Commerce+To+Top+293B+by+2018+Total+eCommerce+To+Hit+414B/-/E-PRE7004>

Johnson, Bruce B. and Blomendahl, Ben. Retail Sales Trends Across Nebraska Counties and Localities, Department of Agricultural Economics, Report No. 182, May 2007.

Nebraska Department of Revenue, Current Local Sales and Use Tax Rates, Effective January 1, 2017

Nebraska Department of Revenue, Sales Tax Data Series 1990-2015

U.S. Census Bureau, Nebraska: 2012 Economic Census, Retail Trade, Geographic Area Series, 2012.