A TRADE AREA ANALYSIS OF WISCONSIN RETAIL AND SERVICE MARKETS: UPDATED FOR 2021

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ABSTRACT

Using 2021 county sales tax data, we examine the strength and weaknesses of Wisconsin retail and service markets through the application of the tools of Trade Area Analysis. Only those counties that have elected to collect the optional county sales tax are included in the analysis. Because sales tax data are used one must keep in mind that the analysis focuses only on taxable sales and may not reflect the total level of activity in the county. Using Pull Factors and measures of Surplus and Leakage the relative strengths, and weaknesses, of local retail and service markets are identified.

INTRODUCTION[1]

When a community is exploring economic development options one area of interest is local retail and service markets. Communities naturally ask “are local retail and service businesses reaching their fullest potential, are there weaknesses that need to be addressed, or strengths that we can build upon?” In order to address these basic questions communities need to have basic insights into the relative strengths and weaknesses of local retail and service markets. One approach to identifying these local strengths and weaknesses is to examine patterns in current sales activities using the tools of Trade Area Analysis.

The power of Trade Area Analysis (TAA) is the simplicity of the tools and the ease of interpretation. Community economic development practitioners have found that this simplicity has led to community leaders, businesses and concerned citizens to adopt the tools and insights gained from TAA. The tools of Trade Area Analysis have proven to be a powerful foundation upon which to build a conversation about community economic development options.

Indeed, some businesses have found these tools to be useful in developing business feasibility plans and have been accepted by a number of bank loan officers.

It is important to note that the analysis presented here is at the county level which may not reflect the true market geographic area. Some businesses may service a local community within the county while other businesses draw customers from a much larger geographic area.

The weakness of Trade Area Analysis is the lack of geographic detail. The data, in the case of Wisconsin, are provided at the county level (and only for counties that have implemented the county option sales tax) which may or may not reflect the true geographic economic market area. In our case here, from a purely economic perspective, the county is an arbitrary political boundary that may or may not reflect local retail and service markets.

Because the TAA reported here ignores the geographical or spatial element of the community's markets, local knowledge of business opportunities and consumer behavior is extremely important. There may be very sensible reasons why TAA identifies a particular weakness or strength. For example, one community may be found to have large weaknesses in motor vehicle sales suggesting a market potential. But it may be the case that a neighboring community has a large concentration of automobile dealerships (a strength for that community) and easily explains the initial weakness for the community of interest. Knowledge of the condition of surrounding markets is vital to interpreting the results of the analysis presented here. The key is that TAA can serve as a foundation for a conversation about local retail and service markets.

What we will do in the following few pages is review the tools of Trade Area Analysis and some of the simplifying assumptions that allow the analysis to move forward. Initially, residents in the local market or trade area of interest (e.g., the county) have the same tastes and preferences across the state. This assumption allows the community practitioner to compare the local market to a state average. We then show methods of estimating demand with unique trade area characteristics. As described above, the trade area is defined by the availability of data, and the geographic area that the data are reported.

For this particular study, we will use sales tax data reported by the Wisconsin Department of Revenue at the county level. Specifically, counties that have imposed the local option sales tax are included in this analysis. Because the data is drawn from tax sales receipts only taxable sales are considered. If a particular item is not included in the tax base, then no data is available. Hence care must be taken and one must keep in mind that the analysis is of "taxable sales". Still, the analysis provides one set of information that can be used to develop a picture of the local retail market.

TRADE AREA ANALYSIS

Sales retention is an indirect measure of locally available goods and services, assuming people buy locally if possible. While measurement of actual sales is relatively easy, measurement of the sales potential presents some difficulty. This assumes that not only that tastes and preferences are identical but also the local trade area is demographically similar to the state. *Local potential sales* can be estimated by statewide average sales per capita adjusted by the ratio of local to state per capita income (Deller, et.al. 1991; Hustedde, Shaffer & Pulver 1993; Shaffer, Deller & Marcouiller 2004; Stone & McConnen 1983):

$$PS_s^i = P_s * PCS_{state}^i * \frac{PCI_s}{PCI_{state}} \quad (1)$$

where PS_s^i is potential sales in community s for sector i, P is population, PCS is per capita sales, PCI is per capita income.

Care must be used in accepting the computed potential sales from equation (1). It ignores all of the shopping areas and consumer characteristics that are located within the immediate and surrounding market.

The potential sales provided from equation (1) assume no differences in local consumption patterns except adjusting by relative local income. For example, the approach of Trade Area Analysis used here does not account for differences in the socioeconomic characteristics of the region, other than income. But this readily calculated estimate represents a realistic initial estimate.

One way to estimate sales retention is just to divide actual sales by sales potential. Actual sales can be obtained from a variety of sources, including census of business, sales tax data, and the merchants themselves. Another approach to sales potential estimates the number of people buying from local merchants (Hustedde, Shaffer & Pulver, 1993; Stone & McConnen, 1983). The Trade Area Capture estimates the customer equivalents. Trade Area Capture used in conjunction with the Pull Factor permits the community to measure the extent to which it attracts nonresidents (e.g., tourists and nonlocal shoppers) and differences in local demand patterns.

Trade Area Capture estimates the number of customers a community's retailers sell to. Most trade area models consider market area as the function of population and distance. Trade Area Capture incorporates income and expenditure factors with the underlying assumption that local tastes and preferences are similar to the tastes and preferences of the state. The verbiage here can become somewhat confusing in that the phrase trade area discussed above has a definite spatial meaning, but Trade Area Capture is aspatial. Thus, the Trade Area Capture estimate suffers from the same caveats enumerated for Potential Sales estimated:

$$TAC_s^i = \frac{AS_s^i}{PCS_{state}^i * \frac{PCI_s}{PCI_{state}}} \qquad (2)$$

where notation remains the same with the addition of TAC is Trade Area Capture and AS is actual sales.

The number calculated from equation (2) is the number of people purchased for, not the people sold to or actual customers in the store (i.e., if one person buys food for a family of four, all four are counted). If Trade Area Capture exceeds the trade area population then the community is capturing outside trade or local residents have higher spending patterns than the state average.

If the Trade Area Capture is less than the trade area population, the community is losing potential trade or local residents have a lower spending pattern than the statewide average. Further analysis is required to determine which cause is more important. Comparison of the Trade Area Capture estimates for specific retail or service categories to the total allows for additional insight into which local trade sectors are attracting customers to the community. It is important to make Trade Area Capture comparisons over time to identify trends.

Trade Area Capture measures purchases by both residents and non-residents. The Pull Factor makes explicit the proportion of consumers that a community (the primary market) draws from outside its boundaries (the secondary market, including residents in neighboring areas or tourists). The Pull Factor is the ratio of Trade Area Capture to municipal, in our case here county, population. The Pull Factor measures the community's drawing power.

Over time, this ratio removes the influence of changes in municipal population when determining changes in drawing power. The Pull Factor is computed as:

$$PF_s^i = \frac{TAC_s^i}{P_s} \qquad (3)$$

A Pull Factor (PF) greater than one implies that the local market is drawing or pulling in customers from surrounding areas. A Pull Factor of less than one implies that the local market is losing customers to competing markets. The Pull Factor, much like the percent sales retention estimate, can also be loosely interpreted as a location quotient. Pull Factors significantly greater than one often indicate an area of specialization for the local market. For example, tourist areas tend to have high Pull Factors and location quotients for restaurants, hotels, and miscellaneous retail stores. The use of any tool by itself can often lead to erroneous conclusions.

One must use a variety of tools to gain a clearer understanding of the local economy. An alternative way to think about sales retention is to compute local Surplus or Leakage by looking at the difference between actual sales (AS) with Potential Sales (PS):

$$S/L_s^i = AS_s^i - PS_s^i \qquad (4)$$

If actual sales (AS) is larger than Potential Sales (PS) and equation (4) is positive then there is said to be a Surplus, or the local market is performing better than one would expect. One could reasonably interpret a Surplus as the dollar value of the Pull Factor being greater than one. If actual sales (AS) are smaller than Potential Sales (PS) and equation (4) is negative then there is said to be a Leakage, or the local market is performing below what one would expect. Again, one could reasonably argue that a Leakage is the dollar value of the Pull Factor being less than one.

The leakage here can be interpreted as the dollar value of the Pull Factor being less than one, whereas a surplus is the dollar value of the Pull Factor being greater than one. If the Pull Factor is less than one and there are dollars being lost (leakage) out of the county, this may point to market opportunities. Is the leakage sufficiently large to support a new business, or perhaps existing businesses can expand to capture some of those leakages?

CORE DATA FOR ANALYSIS

Before turning to the Trade Area Analysis for Wisconsin counties that have sales tax data, three core pieces of information are required. The first is the Index of Income, which is the per capita income of the county divided by the per capita income of Wisconsin, the second is the county population (Table 1), and the third are per capita expenditure levels for the state by business type (Table 2). For this analysis, 68 counties have imposed a sales tax from which the data are derived. Please note that for this analysis, the state averages are based on the 68 counties that are contained in this analysis.

Fifty-six of the 68 have an Index of Income strictly below one, but several, including Calumet and Sauk, are very close to being exactly at the state average. Menominee County has the lowest Index of Income (0.677, which means that per capita income is only 67.7% of the state average) while Ozaukee has the highest Index of Income (1.618).

There are several potential sources of data that can be used to undertake a Trade Area Analysis including sales estimates from private venders such as Woods and Poole, Inc. ESRI, or InfoGroup as well as federal government sources such as the Economic Census conducted every five years. While these data allow for comparisons across state lines many times they are estimates based on the Economic Census and the methods employed are unclear. For this study we use County Sales Tax data provided by the Wisconsin Department of Revenue. These data are not only timely, but the methods of collection and reporting are clearly documented. The weakness is that the data cover only taxable sales and are reported only at the county level.

Again note that here, the Wisconsin average is defined as including only those counties that have a county sales tax. Because of the relatively low-income levels, we would not expect spending in these counties to be on par with the state average, and these averages are adjusted downward as described above. At the same time, one would expect counties that have higher income levels (e.g., Dane, Ozaukee, and Washington) to have higher spending levels than the state average and thus are adjusted upward.

	Population	Per Capita Income	Index of Income		Population	Per Capita Income	Index of Income
Adams	20,875	$ 42,565	0.798	Lincoln	28,541	$ 47,781	0.896
Ashland	16,107	$ 41,505	0.778	Marathon	137,648	$ 53,703	1.007
Barron	46,719	$ 50,435	0.946	Marinette	41,875	$ 45,875	0.860
Bayfield	16,320	$ 47,714	0.895	Marquette	15,792	$ 41,950	0.787
Brown	269,591	$ 55,272	1.036	Menominee	4,289	$ 36,091	0.677
Buffalo	13,302	$ 48,013	0.900	Milwaukee	928,059	$ 51,191	0.960
Burnett	16,744	$ 43,822	0.822	Monroe	46,193	$ 44,978	0.843
Calumet	52,539	$ 52,958	0.993	Oconto	39,356	$ 46,924	0.880
Chippewa	66,865	$ 47,775	0.896	Oneida	38,259	$ 50,249	0.942
Clark	34,746	$ 44,459	0.834	Outagamie	191,545	$ 53,624	1.005
Columbia	58,488	$ 54,205	1.016	Ozaukee	92,497	$ 86,297	1.618
Crawford	16,075	$ 44,479	0.834	Pepin	7,364	$ 51,608	0.968
Dane	563,951	$ 66,189	1.241	Pierce	42,587	$ 49,483	0.928
Dodge	89,313	$ 47,030	0.882	Polk	45,431	$ 48,243	0.905
Door	30,369	$ 60,390	1.132	Portage	70,468	$ 49,586	0.930
Douglas	44,203	$ 45,572	0.854	Price	14,050	$ 45,753	0.858
Dunn	45,547	$ 43,638	0.818	Richland	17,212	$ 46,426	0.870
Eau Claire	106,452	$ 51,675	0.969	Rock	164,381	$ 47,563	0.892
Florence	4,593	$ 52,444	0.983	Rusk	14,123	$ 45,335	0.850
Fond du Lac	104,362	$ 51,540	0.966	Sauk	65,697	$ 53,187	0.997
Forest	9,258	$ 42,683	0.800	Sawyer	18,295	$ 45,089	0.845
Grant	52,110	$ 46,217	0.867	Shawano	40,859	$ 45,754	0.858
Green	36,988	$ 55,098	1.033	Sheboygan	117,747	$ 53,737	1.008
Green Lake	19,229	$ 45,536	0.854	St. Croix	95,044	$ 58,625	1.099
lowa	23,756	$ 51,381	0.963	Taylor	19,923	$ 45,456	0.852
Iron	6,178	$ 47,441	0.890	Trempealeau	30,724	$ 45,706	0.857
Jackson	21,121	$ 46,290	0.868	Vernon	30,915	$ 43,680	0.819
Jefferson	84,943	$ 49,905	0.936	Vilas	23,520	$ 51,540	0.966
Juneau	26,802	$ 41,243	0.773	Walworth	106,799	$ 52,159	0.978
Kenosha	168,732	$ 52,212	0.979	Washburn	16,752	$ 47,857	0.897
Kewaunee	20,543	$ 51,995	0.975	Washington	137,175	$ 62,438	1.171
La Crosse	120,433	$ 53,712	1.007	Waupaca	51,570	$ 47,666	0.894
Lafayette	16,784	$ 45,879	0.860	Waushara	24,828	$ 43,103	0.808
Langlade	19,502	$ 45,507	0.853	Wood	74,070	$ 49,024	0.919

Table 2: State Per Capita Taxable Expenditure

Retail Sectors		
Motor Vehicle and Parts Dealers	$	2,573
Furniture and Home Furnishings Stores	$	322
Electronics and Appliance Stores	$	258
Building Material and Garden Equipment and Supplies Dealers	$	1,363
Food and Beverage Stores	$	996
Health and Personal Care Stores	$	234
Clothing and Clothing Accessories Stores	$	575
Sporting Goods, Hobby, Book, and Music Stores	$	321
General Merchandise Stores	$	1,450
Miscellaneous Store Retailers	$	425
Service Sectors		
Professional, Scientific, and Technical Services	$	415
Administrative and Support Services	$	287
Data Processing, Hosting, and Related Services	$	78
Telecommunications	$	530
Accommodation	$	321
Food Services and Drinking Places	$	1,672
Repair and Maintenance	$	441
Personal and Laundry Services	$	216

The second set of data is the state per capita expenditure levels (Table 2). It is vital to recall that the data are drawn from taxable sales, not total sales. As a result, the estimated potential sales as well as surplus/leakage levels are conservative. For retail sectors, the largest single category of expenditures is motor vehicle and parts dealers with a state-wide per capita expenditure level of $2,573 in 2021. This result is largely attributed to the expense of automobiles. The second largest single category of retail expenditures is general merchandise stores with $1,450.

There are two potential reasons why this category is as large as it is: (1) the growing popularity of “big-box” stores such as Wal-Mart and Target is drawing a larger share of consumer dollars and (2) many of the “super” stores have expanded into carrying groceries which is in direct competition to more traditional food stores. Many of these “super stores” have become one-stop centers where customers can purchase food, clothing, hardware, toys, electronics, and even have prescriptions filled in one store.

Some of these stores have even entered the retail gasoline market thus placing pressure on smaller gasoline retailers. Indeed, even more traditional gasoline retailers have expanded into offering more items associated with general merchandise and food stores. Many gasoline stations have turned into general convenience stores that compete directly with grocery stores. Indeed, for many of these latter establishments the businesses do not classify themselves as gasoline which creates some difficulties in measuring market strengths and weaknesses. Rather, the businesses report under a different business classification such as a convenience store (e.g., general merchandise).

For the services sectors food services and drinking places (restaurants and taverns/bars) at $1.672 followed by telecommunication services which would include wireless and internet service providers ($530). Also note that in Wisconsin the typical per-person spending on professional, scientific, and technical services is slightly higher than accommodation (hotels, motels, B&Bs) ($415 vs $321). In 2009, for example, per capita spending on professional, scientific, and technical services was $238 which represents a 74.4% increase. While a small part of this increase is due to changes in sales tax laws, this large increase is more a reflection of the growth in this sector and its growing importance to the economy.

In more rural counties, for example, there may be one grocery store that dominates the market which means that the data will be suppressed. Here local knowledge of the retail and service markets are vital to properly interpreting the resultsof the Trade Area Analysis.

TRADE AREA ANALYSIS RESULTS

In addition to the tabular presentation of the results for Pull Factors and Surplus/Leakage we have presented the Pull Factors in map form. It is important to note that there are at least three reasons why there may be no data for a particular category for any given county. First, there are four counties in Wisconsin that do not impose the local option sales tax and hence there is no data available. The second is that there are no businesses within the particular category that are reporting taxable sales. Finally, disclosure rules prohibit the release of data that may identify the revenues (sales) of any individual business. In more rural counties, for example, there may be one grocery store that dominates the market which means that the data will be suppressed. Here local knowledge of the retail and service markets is vital to properly interpreting the results of the Trade Area Analysis.

The volume of results prevents a detailed discussion we have left it to the reader to draw the relevant information for their own purposes.

For brevity we have reported only the two key variables of interest: Pull Factors and the Surplus/Leakage that is tied to those Pull Factors. The reader must keep in mind to consider both Leakages as well as Surpluses when developing strategies to build local retail and service markets. Naturally, the tendency is to want to focus on addressing weaknesses in the markets, but there may be solid reasons why such weaknesses exist ranging from lack of market size (small populations such as in Florence County may be a real barrier to the creation of certain types of businesses) to spatial competition from neighboring communities. But focusing attention on sectors that have a revealed strength (i.e., large Pull Factors and Surpluses) can build on existing markets. For example, a community that has a strong tourism and recreation sector may find that the further promotion of tourism and recreation can have strong positive impacts. In other words, it can be just as valuable to build on existing strengths as it is to address weaknesses.

One must also consider the relative size of any Leakage before considering it as a business opportunity. For example, the Leakage may not be sufficiently large to justify new

business enterprises. Rather, a viable alternative to new business formation is for existing businesses within the sector to rethink their business strategies. The challenge here is to use the analysis as an "excuse" or "reason" to engage the community in a conversation about the strengths and weaknesses of local retail and service markets and strategies that can be pursued to build on those strengths and address the weaknesses.

Consider the Pull Factor and corresponding Surplus/Leakage calculation for total taxable retail sales and total selected services sales (Table 3). In addition, a mapping of the Pull Factor for total retail activity is provided in Map 1 and for total selected services sales is provided in Map 2. In the strictest interpretation 42 of the 68 counties in this analysis, or 61.8%, have a Pull Factor of less than one, suggesting that these 42 counties are experiencing Leakages of taxable retail and service activities.

A four-step process then comes to light when considering the analysis presented here.

1. Determine which sectors are strengths and weaknesses based on the relative size of the Pull Factor.

2. This determination should first be based on the county in isolation and then in comparison to similar counties.

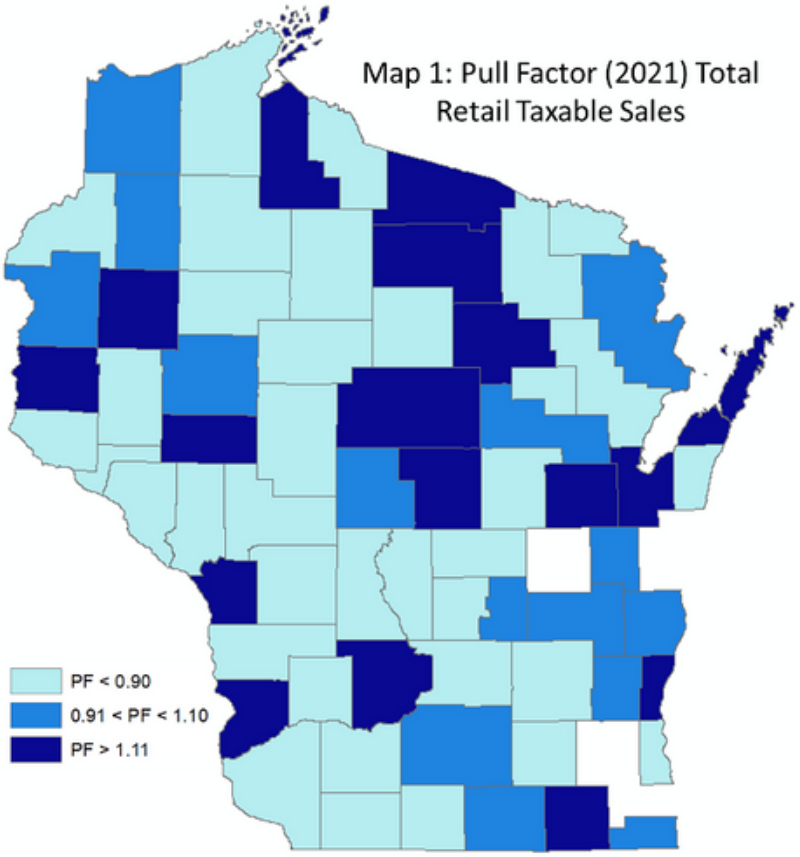
3. Determine the dollar value of the strength or weaknesses based on the Surplus or Leakage.

4. Identify strategies to build on strengths and address weaknesses.

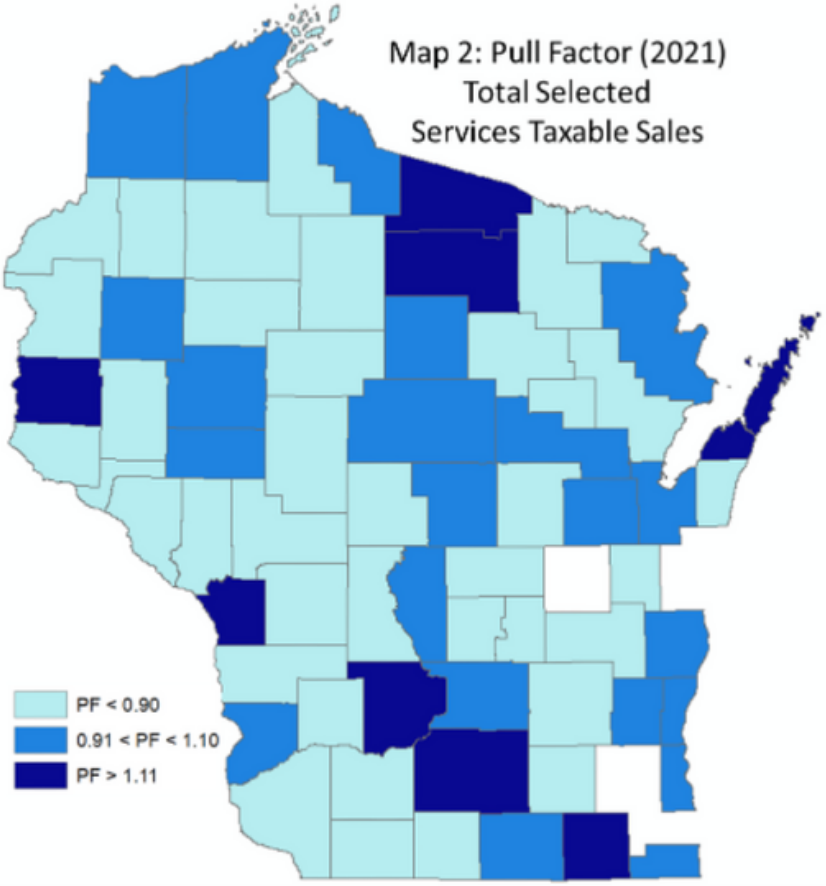
The three counties with the smallest Pull Factors are Menominee (PF=0.093), Florence (PF=0.389), and Buffalo (PF=0.444, which translates to leakages of $21.3 million, $23.3 million, and $51.7 million, respectively, while the counties with the largest Pull Factors are Door (PF=1.431), Sawyer (PF=1.661) and Oneida (PF=1.749), which translates into surpluses of $77.4 million, $127.1 million, and $262.8 million, respectively. The large surpluses for these last three counties is partially explained by large tourism and recreational economies. Counties with the lowest Pull Factors tend to be smaller more rural counties that are within a reasonable driving distance to a larger county.

Table 3: TAA Total Retail Sales and Select Services, 2021

	Retail		Services			Retail		Services	
	Pull Factor	Surplus/Leakage	Pull Factor	Surplus/Leakage		Pull Factor	Surplus/Leakage	Pull Factor	Surplus/Leakage
Adams	0.54	($45,141,682)	1.06	$21,915,147	Lincoln	0.83	($15,999,537)	0.92	$3,033,799
Ashland	1.11	$45,650,334	0.81	$2,080,216	Marathon	1.15	$172,912,459	0.91	($55,403,619)
Barron	1.33	$153,693,411	0.96	$3,562,252	Marinette	1.05	$66,653,870	0.91	$8,956,314
Bayfield	0.61	($39,334,595)	1.08	$11,817,287	Marquette	0.48	($40,916,060)	0.61	($11,105,332)
Brown	1.22	$419,256,066	1.08	$51,446,571	Menominee	0.09	($21,328,636)	0.19	($8,195,249)
Buffalo	0.44	($51,728,654)	0.66	($12,791,474)	Milwaukee	0.86	($772,815,200)	1.04	$284,848,112
Burnett	0.66	($22,391,904)	0.71	($7,264,550)	Monroe	0.87	$10,969,744	0.82	($4,242,702)
Calumet	1.01	$9,092,195	0.68	($64,098,695)	Oconto	0.61	($91,158,476)	0.53	($55,279,574)
Chippewa	1.01	$63,540,750	0.92	$7,298,692	Oneida	1.75	$262,813,708	1.31	$55,020,636
Clark	0.57	($77,675,753)	0.49	($47,500,235)	Outagamie	1.29	$468,524,891	1.00	($3,607,963)
Columbia	0.80	($107,003,426)	0.92	($21,794,474)	Ozaukee	1.16	($364,427,222)	1.04	($211,312,483)
Crawford	1.12	$38,774,140	1.01	$10,935,866	Pepin	0.59	($23,494,923)	0.81	($4,528,881)
Dane	1.06	($852,569,924)	1.18	($135,722,130)	Pierce	0.49	($159,208,463)	0.60	($54,514,951)
Dodge	0.80	($60,441,311)	0.66	($77,147,974)	Polk	0.99	$32,288,406	0.70	($36,923,068)
Door	1.43	$77,364,128	2.69	$187,548,925	Portage	1.10	$104,215,527	0.95	$5,933,298
Douglas	0.91	$21,056,560	1.01	$26,811,865	Price	0.69	($19,872,935)	0.65	($11,599,090)
Dunn	0.79	($11,464,491)	0.71	($19,460,160)	Richland	0.88	$748,561	0.59	($18,992,810)
Eau Claire	1.31	$309,430,169	1.03	$26,048,747	Rock	1.07	$248,760,168	0.90	$5,683,754
Florence	0.39	($23,253,044)	0.18	($14,545,864)	Rusk	0.72	($15,580,758)	0.62	($13,049,239)
Fond du Lac	0.91	($46,266,136)	0.88	($35,075,914)	Sauk	1.37	$207,613,392	2.72	$448,140,471
Forest	0.54	($20,407,974)	0.52	($10,099,458)	Sawyer	1.66	$127,079,129	1.38	$38,401,655
Grant	0.78	($39,885,919)	0.65	($44,865,768)	Shawano	0.89	$10,941,932	0.88	$3,745,646
Green	0.85	($56,328,754)	0.83	($30,356,012)	Sheboygan	0.94	($67,228,988)	0.95	($24,927,054)
Green Lake	0.96	$18,052,078	0.66	($15,111,085)	St. Croix	1.02	($64,643,874)	0.96	($51,369,247)
Iowa	0.85	($22,012,351)	0.80	($15,782,381)	Taylor	0.82	($5,748,280)	0.58	($21,621,128)
Iron	0.54	($18,539,839)	0.93	$905,822	Trempealeau	0.58	($72,372,400)	0.72	($16,883,319)
Jackson	0.75	($22,090,413)	0.64	($19,468,034)	Vernon	0.74	($20,827,015)	0.56	($32,052,476)
Jefferson	0.89	($34,144,070)	0.80	($46,968,802)	Vilas	1.28	$61,930,729	1.88	$85,143,939
Juneau	0.70	($16,794,412)	0.89	$12,673,435	Walworth	1.12	$132,617,695	1.35	$159,110,904
Kenosha	1.06	$109,672,214	0.90	($49,436,201)	Washburn	1.00	$14,985,550	0.89	($469,235)
Kewaunee	0.54	($75,332,337)	0.53	($36,258,803)	Washington	1.09	($89,660,006)	0.97	($107,170,354)
La Crosse	1.30	$304,962,421	1.17	$79,866,437	Waupaca	0.84	($24,224,347)	0.76	($27,848,860)
Lafayette	0.49	($52,934,137)	0.64	($14,802,474)	Waushara	0.59	($46,474,700)	0.64	($16,867,979)
Langlade	1.29	$72,096,454	0.75	($8,295,473)	Wood	0.99	$46,026,267	0.83	($26,119,218)



Map 1: Pull Factor (2021) Total Retail Taxable Sales



Map 2: Pull Factor (2021) Total Selected Services Taxable Sales

How Close to One is Close Enough?

While the Pull Factor has a definitive threshold of one, there remains room for interpretation. For example, Dane County, where Madison a regional hub is located, has a Pull Factor of 1.069. Fond du Lac, another potential regional hub, has a Pull Factor of 0.978. In the strictest sense, one could conclude that Dane County is doing better than expected while Fond du Lac is doing poorer than expected but in reality, a more reasonable interpretation would be that both counties are performing on par with the state average.

Some have suggested that when interpreting Pull Factors more reasonable thresholds might be above 1.1 and below 0.9 and Pull Factors between those two ranges are close enough to 1.0 to be acceptable.

Others point to the size of the corresponding Surplus and/or Leakage as the relevant metric of interest. For small counties, a very small Pull Factor may translate into a very modest dollar Leakage, too small for businesses to consider addressing. Whereas for a large county, a Pull Factor slightly smaller than one can lead to leakages in the millions of dollars. For example, Fond du Lac has a Pull Factor of 0.95, very close to one, but a leakage of about $68 million.

The leakage here can be interpreted as the dollar value of the Pull Factor being less than one, whereas a surplus is the dollar value of the Pull Factor being greater than one. If the Pull Factor is less than one and there are dollars being lost (leakage) out of the county, this may point to market opportunities. Is the leakage sufficiently large to support a new business, or perhaps existing businesses can expand to capture some of those leakages? The county with the largest retail leakage is Milwaukee County at $772.8 million while Brown County has a surplus of $419.3 million and Outagamie County has a surplus of $468.5 million. Clearly, these large dollar values are directly tied to the population size of these counties. Consider, for example, the smaller county of Pierce with a population of 42,600 has a leakage of $159.2 million, or Forest County with only 9,258 people and leakage of $20.4 million.

The simple mapping of the aggregate Pull Factor (Map 1) reveals several interesting patterns. First, for descriptive purposes, the Pull Factor can take on one of three values, less than 0.9, between the values of 0.9 and 1.1, and finally above 1.1. While a strict threshold value of 1.0 holds for the Pull Factor, is a value of 0.95 or 1.05 in a practical sense different from 1.0? (see sidebar). For discussion purposes we have altered the thresholds slightly to allow for three outcomes: performing as one would expect (0.9 – 1.1), underperforming (<0.9), and overperforming (>1.1). Second, many of the larger market counties, such as Dane and Kenosha tend to perform as one might expect. One might also expect that these are regional hubs that draw in (i.e., surplus) retail and service spending from neighboring counties. While there are still regional hubs, such as Eau Claire, the larger markets (counties) do not appear to overwhelm and dominate the neighboring counties. Third, many of the northern counties have relatively high Pull Factors suggesting that the local markets are overperforming. This latter result is largely due to the tourism markets and recreational housing. While prior research suggests that the owners of recreational homes tend to bring most of their goods (groceries, supplies, etc.) from their home areas, there is additional spending. This is particularly true for building materials and garden supply retailers.

We also applied the tools to selected service industries where the overall results are provided in Table 3 and the mapping of the overall Pull Factor is provided in Map 2. A full 75% of the counties with a county sales tax had a Pull Factor for overall service sales of less than one. Florence and Menominee counties had the lowest overall Pull Factor, 0.183 and 0.194 respectively which translates into Leakages of $23.3 million and $21.3 million, again respectively. The counties with the highest overall services Pull Factor were not the larger more urban counties but rather Vilas (PF=1.881), Door (PF= 2.692), and Sauk (PF=2.720) with corresponding Surpluses of $61.9, $77.4, and $207.6 million respectively. What is driving this result are the tourism and recreation industries. For example, the Pull Factor for Accommodations for Sauk County is 14.18 (Table 6), resulting in a Surplus of $277.4 million (Table 7), and the Pull Factor of Food Services and Drinking Places is 2.45 which translates into a Surplus of $158.9 million. Door County had equally large Pull Factors and Surplus:

Accommodations PF=8.93 and a Surplus of $87.6 million and Food Services and Drinking Place PF=2.19 and a Surplus of $68.3 million.

While a detailed discussion of the results for the ten different retail and eight services sectors is beyond the scope of this summary narrative, the Pull Factors and corresponding Surplus/Leakage calculations are provided in Tables 6 and 7 the Pull Factors for each of the 18 sectors are mapped. There are a few patterns worthy of notice. First, notice the prevalence of underperforming counties in Clothing and Clothing Accessories Stores or Furniture and Home Furnishings Stores: outside of a few urban hubs the Pull Factors are consistently below 0.9. This is due to two reasons: first, a growing share of consumer purchases are at general merchandise stores, and second, the rate of purchasing at more specialized stores is insufficient to support such stores outside of larger market areas.

To better understand the second point, consider the notion of population thresholds which is defined as the number of people required to support a particular type of retail or service business (see Appendix A). Here, the interplay between the costs of operating a given type of business and the demand for the goods or services offered by the business determines a minimum market size, generally proxied by population, required to support a given business. Some businesses, such as full-service restaurants, require as few as 1,100 people whereas a bowling center needs almost 27,000 people. Coupled with the power of agglomeration effects within retail, often driven by the notion of multi-purpose shopping trips as well as external economies of scale to specific types of businesses, results in the spatial clustering of certain types of businesses within a geographic area. These areas tend to be larger cities resulting in “retail hubs”. These economic forces give larger places a comparative advantage over smaller places and help explain some of the patterns observed in both retail and some service markets.

Third, by examining sectors that are traditionally sensitive to tourism and recreation, such as Accommodations, as well as Food Services and Drinking Places among others, can identify parts of Wisconsin that are more dependent on tourism and recreation. As noted above, counties such as Door, Sauk, and Vilas have unusually high Pull Factors, and correspondingly Surpluses, in these tourism-sensitive

sectors. While these sectors represent strengths for the local economy they also point to the potential for exposure to swings in the tourism sector which tends to be sensitive to economic downturns.

These data and the patterns observed can provide a powerful starting point for a broader discussion in the community about regional economic strengths and weaknesses. In particular, the analysis provided in this report can help guide further analysis of market opportunities. In addition to pointing toward opportunities, the analysis can potentially expose areas of threat. For example, if a county's market is overly dependent on one particular sector, such as tourism, can expose the county to shocks. In the end, these analyses provide insights into the local retail and service economies.

STRATEGIES FOR ENHANCING RETAIL AND SERVICE MARKETS

Individual business owners do not want to "bet the farm" based on a simple Pull Factor and corresponding measure of Leakage or Surplus. Rather, these tools can be powerful in the initial identification of market ideas and concepts. In a sense, these tools can be used in the "plan-to-plan" stage of the business planning process and can provide useful insights.

Beyond aiding businesses in the initial planning stages there exists a wide range of potential strategies that can be put in place to build on the

strengths of the local retail markets and address potential gaps. A detailed discussion of the vast range of potential strategies is not the intent of this study. Rather, the intent here is to introduce the reader to a broad range of ideas.

The two broad classifications of strategies include: (a) increasing the flow of dollars into the community (e.g., build on Surpluses) and (b) increasing the re-circulation of dollars within the community (e.g., plug Leakages). Increasing the flow of dollars into the community means that the community is essentially injecting new money into the local economy by attracting consumers from surrounding communities or by capturing the dollars of visitors to the community. Consumers are both individuals as well as businesses. In each case, the community is bringing more money into the community. Increasing the re-circulation of dollars in the community means that the community is plugging Leakages of money out of the local community's economy. In other words, the community is actively seeking ways to get people and businesses to spend more locally.

One can almost think of these as broad approaches to address “gaps” and “disconnects” within the local market.

Gaps describe the case where a particular good or service is not available at a sufficient level for purchase in the local community. Disconnects are when goods and services are available but local customers, both residents and businesses, are not making local purchases.

Because these are broad approaches and specific strategies will be applicable to both we will suggest several possible specific strategies across both approaches. For a more focused discussion see the newsletter Downtown Economics produced by the Center for Community Economic Development at the University of Wisconsin-Extension[3] as well as the collection of resources at the USDA National Rural Resource Library and the references therein.[4]

Examples of specific activities a community can undertake to increase the inflow or re-circulation of dollars include:

1. Develop market information to help retail and service businesses in identifying market potentials and formulate business plans. The TAA presented here is a small piece of such market information.

2. Promote community and regional commercial space necessary to attract new retail and service businesses.

3. Encourage mixed uses for downtown real estate, including housing, lodging, office space, and social spaces. Recognize the shift away from traditional retail spaces to service-oriented businesses.

4. Work to ensure that retail and service development policies aim at complementary growth where local firms are harmonized and not competitive.

5. Match the preferences of local market segments with the assets and amenities of the community, such as tourism linked to agriculture and local foods.

6. Help businesses explore all market segments available including but not limited to local residents, in commuters, second home-owners, and visitors, among others. Expand purchases by non-local people through appropriate advertising and promotions.

- Help develop an online presence for each new or existing business including e-retailing and online marketing including the use of social media.
- Coordinated advertising can build on economies of size and scope.
- Coordinate business hours.
- Sponsor downtown activities such as sidewalk sales or art fairs.
- Organize farmers markets to attract customers to the downtown.
- Providing convenient parking or public transit.

7. Ensure that key public services (e.g., fire and police, water and sewer, general administration) are more than satisfactory.

8. Aid businesses in developing employee-training programs to improve the quality of service.

9. Recognize the important role of transfers such as retirement benefits, and unemployment compensation as a flow of funds into the community.

10. Consider initiating a business retention and expansion program to support existing businesses first. These business visitation programs can build a stronger sense of community and help identify potential problem areas.

11. Encourage collective action through the formation of organizations such as the Chamber of Commerce or Merchants Association. These types of organizations can provide a mechanism for local businesses to network and create learning opportunities that foster innovation.

12. Create a positive business climate where local government regulators work with businesses to satisfy local rules and regulations rather than create barriers of red tape

These broad-based strategies are clearly not exhaustive and are meant to only introduce the idea that effective strategies can range from the simplistic to the complex. It is also important that there is no single strategy that effective development of the retail and service sectors requires. Instead, they require a multi-prong approach with overlapping strategies. Finally, strategies need to be constantly evaluated and adjusted to reflect changing markets

While the tools of Trade Area Analysis are a powerful indicator of retail market strengths and weaknesses, they should not be substituted for detailed business feasibility studies. While businesses have found measures of Surplus/Leakage to be a reasonable first approximation of potential revenues more detailed market analysis is required before specific business investments are made. Again, these tools are most appropriate in the business “plan-to-plan” phase of business planning.

CONCLUSIONS

The intent of this applied research project is to: (1) introduce one set of tools, specifically Trade Area Analysis and market threshold analysis, to community development practitioners; (2) apply the tools to a set of data for Wisconsin counties; and (3) outline a set of simple strategies to help build on Surpluses and address Leakages. The tools offered here as well as the analysis should be considered one step in developing a complete understanding of the local retail market. The tools can be used to stimulate discussions within the community about the strengths and weaknesses of the local retail markets as well as a simple set of tools that potential businesses can use in the initial planning, or “plan-to-plan”, stages in business development.

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Table 4: Pull Factors Retail Sectors

	Motor Vehicle and Parts Dealers	Furniture and Home Furnishings	Electronics and Appliance	Building Material and Garden Equipment and Supplies Dealers	Food and Beverage	Health and Personal Care	Clothing and Clothing Accessories	Sporting Goods, Hobby, Book, and Music	General Merchandise	Miscellaneous Store Retailers
Adams	1.16	0.44	0.58	1.00	-	0.20	0.19	0.35	0.41	0.74
Ashland	1.13	0.90	0.50	1.28	0.92	1.36	0.56	0.73	3.33	0.91
Barron	1.62	1.01	0.97	1.98	0.65	0.91	0.49	1.68	1.93	1.73
Bayfield	0.83	0.64	0.26	0.90	0.83	0.24	0.33	1.72	0.30	0.87
Brown	1.45	1.19	1.30	1.08	1.23	1.07	1.26	1.13	1.24	1.40
Buffalo	0.92	0.39	-	0.76	-	0.27	0.21	0.27	0.23	0.77
Burnett	1.03	0.49	0.52	1.57	-	0.30	0.17	0.86	0.72	0.94
Calumet	1.28	0.61	0.54	1.05	0.51	0.54	0.88	2.35	1.36	0.93
Chippewa	1.68	1.04	0.55	0.80	0.51	0.65	0.41	2.14	1.51	0.92
Clark	1.13	0.46	0.39	0.83	0.41	0.29	0.17	0.24	0.26	1.54
Columbia	1.34	0.78	0.51	0.59	0.49	0.76	0.51	0.95	0.80	0.91
Crawford	1.25	0.39	1.03	0.91	0.58	1.09	0.43	3.71	2.87	0.66
Dane	1.14	1.10	1.11	0.78	1.10	1.05	1.06	1.13	0.69	0.96
Dodge	1.32	0.63	0.87	0.72	0.53	0.69	0.50	0.81	1.17	0.81
Door	1.94	1.69	0.65	1.18	1.28	0.82	2.01	0.88	0.80	2.05
Douglas	0.80	0.65	0.90	2.06	0.83	0.85	0.35	1.18	1.25	1.15
Dunn	1.31	0.63	0.80	0.45	0.61	0.70	0.37	0.68	1.61	0.87
Eau Claire	1.14	1.10	1.95	1.67	1.54	1.12	1.57	2.47	1.30	1.42
Florence	0.91	-	-	0.44	-	0.18	0.14	0.25	0.24	0.72
Fond du Lac	1.43	0.79	1.08	0.85	0.96	1.05	0.59	0.49	0.90	0.79
Forest	0.98	0.58	-	1.32	-	0.24	0.30	0.48	0.34	0.91
Grant	1.06	0.66	0.61	1.41	0.29	0.62	0.46	0.47	1.17	0.69
Green	1.30	0.83	0.92	0.52	0.42	0.76	0.38	0.48	1.22	1.23
Green Lake	1.69	0.88	0.65	1.35	-	0.30	0.31	0.29	1.48	1.80
Iowa	1.32	0.97	1.36	0.94	-	0.73	0.22	0.49	1.38	0.82
Iron	1.05	0.63	-	0.93	-	0.22	0.35	1.00	0.23	0.80
Jackson	1.11	0.85	0.69	0.68	0.37	0.20	0.16	0.17	1.72	0.59
Jefferson	1.21	0.77	0.60	1.08	0.54	1.15	1.50	0.51	1.00	0.62
Juneau	1.51	0.60	0.93	0.68	0.85	1.07	0.26	0.62	0.42	0.63
Kenosha	1.04	1.01	1.15	0.78	1.35	1.39	2.27	1.55	0.98	0.98
Kewaunee	1.44	0.66	0.41	0.43	-	0.36	0.29	0.36	0.22	0.32
La Crosse	1.31	0.92	1.82	1.48	1.35	1.10	1.36	1.63	1.41	1.45
Lafayette	0.97	0.51	0.40	0.97	-	0.27	0.20	0.21	0.31	0.63
Langlade	1.74	0.77	0.50	2.34	-	1.26	0.26	0.92	2.77	0.80

Table 4 (cont): Pull Factors Retail Sectors

	Motor Vehicle and Parts Dealers	Furniture and Home Furnishings	Electronics and Appliance	Building Material and Garden Equipment and Supplies Dealers	Food and Beverage	Health and Personal Care	Clothing and Clothing Accessories	Sporting Goods, Hobby, Book, and Music	General Merchandise	Miscellaneous Store Retailers
Lincoln	1.47	1.01	0.65	0.63	0.71	0.75	0.26	0.76	1.07	0.77
Marathon	1.48	0.94	1.19	1.47	0.97	0.86	0.88	1.29	1.06	1.21
Marinette	1.45	0.60	0.67	1.65	1.04	0.71	0.81	0.76	1.41	0.77
Marquette	1.16	0.44	0.30	0.42	-	0.30	0.22	1.36	0.38	0.52
Menominee	0.31	-	-	-	-	0.15	0.19	0.15	-	0.08
Milwaukee	0.98	1.17	1.00	0.64	1.28	1.36	1.49	0.77	0.67	0.90
Monroe	1.26	1.02	0.78	0.86	0.44	0.57	0.31	0.42	1.95	0.76
Oconto	1.51	0.71	0.44	0.54	0.44	0.25	0.17	0.37	0.27	0.41
Oneida	1.68	1.68	1.03	3.41	1.13	1.24	0.84	2.29	2.38	1.43
Outagamie	1.56	1.11	1.54	1.24	1.31	1.34	1.71	1.90	1.14	1.08
Ozaukee	1.42	0.82	0.53	0.58	0.98	0.82	0.76	0.65	0.67	0.69
Pepin	1.24	0.43	0.29	0.80	-	0.34	0.21	1.21	0.25	0.79
Pierce	0.82	0.56	0.46	0.59	0.67	0.32	0.24	0.49	0.18	0.63
Polk	1.10	0.84	0.63	2.19	0.76	0.39	0.23	0.67	1.27	0.81
Portage	1.23	1.04	1.60	1.43	1.15	0.80	0.81	1.08	1.40	1.20
Price	1.20	0.68	0.59	1.62	-	0.30	0.16	0.61	0.39	1.16
Richland	1.46	0.40	0.57	0.90	-	0.24	0.35	0.19	2.00	0.95
Rock	1.41	0.94	1.33	1.21	1.26	1.06	0.82	1.08	1.19	1.48
Rusk	1.16	0.41	-	1.12	-	0.18	0.14	0.23	1.63	0.47
Sauk	1.42	0.89	0.99	1.67	0.93	1.69	1.95	1.07	1.81	1.25
Sawyer	2.08	1.98	1.46	2.20	1.07	0.94	0.91	1.89	3.10	1.76
Shawano	1.48	0.82	0.67	0.98	0.60	0.81	0.36	0.63	1.35	0.84
Sheboygan	1.25	0.89	1.12	0.96	0.99	0.88	0.52	0.49	1.06	0.76
St. Croix	1.08	0.86	0.56	1.45	1.11	0.64	0.33	0.54	0.95	1.15
Taylor	1.37	0.42	0.86	1.38	-	0.26	0.25	0.68	1.37	0.55
Trempealeau	1.10	0.96	0.36	0.62	0.64	0.29	0.29	0.44	0.35	0.89
Vernon	1.17	0.88	0.79	0.86	0.64	0.73	0.30	0.59	1.06	0.95
Vilas	2.26	1.93	1.19	1.69	1.20	1.07	0.54	1.90	0.23	1.18
Walworth	1.39	1.54	1.30	1.40	1.01	0.92	0.80	0.72	1.23	1.03
Washburn	1.84	1.00	0.75	1.62	0.93	0.54	0.34	1.21	0.36	1.00
Washington	1.44	0.81	0.73	1.13	0.79	0.86	0.68	0.58	1.08	0.75
Waupaca	1.47	0.81	0.48	0.59	0.92	1.26	0.28	0.33	1.13	0.74
Waushara	1.26	0.60	1.00	0.52	0.65	0.33	0.21	0.23	0.40	0.82
Wood	1.24	1.38	0.44	0.85	1.14	0.90	0.35	0.64	1.77	0.91

Table 5: Surplus or Leakage Retail Sectors

	Motor Vehicle and Parts Dealers	Furniture and Home Furnishings	Electronics and Appliance	Building Material and Garden Equipment and Supplies Dealers	Food and Beverage	Health and Personal Care	Clothing and Clothing Accessories	Sporting Goods, Hobby, Book, and Music	General Merchandise	Miscellaneous Store Retailers
Adams	$6,804,709	($3,020,432)	($1,813,237)	($76,460)	($16,597,019)	($3,113,093)	($7,725,291)	($3,459,511)	($14,323,803)	($1,817,545)
Ashland	$5,092,186	($386,858)	($1,612,976)	$4,735,753	($994,054)	$1,070,442	($3,149,431)	($1,072,396)	$42,423,620	($455,952)
Barron	$41,318,935	$203,136	($388,548)	$58,746,964	($15,332,360)	($892,238)	($12,890,186)	$9,694,588	$59,463,296	$13,769,822
Bayfield	($9,811,481)	($1,689,192)	($2,805,568)	($2,029,010)	($2,425,334)	($2,582,768)	($5,622,572)	$3,380,323	($14,920,534)	($828,460)
Brown	$82,824,718	$17,273,207	$21,589,816	$31,030,662	$64,782,166	$4,879,081	$41,577,251	$11,592,677	$95,805,284	$47,901,204
Buffalo	($5,578,810)	($2,340,930)	($3,090,084)	($3,998,962)	($11,929,607)	($2,052,569)	($5,412,996)	($2,821,153)	($13,333,128)	($1,170,416)
Burnett	($96,483)	($2,236,818)	($1,701,028)	$10,685,665	($13,705,583)	($2,259,879)	($6,582,174)	($618,762)	($5,521,575)	($355,266)
Calumet	$4,390,555	($6,514,090)	($6,252,768)	$3,576,801	($25,528,594)	($5,630,309)	($3,453,881)	$22,594,596	$27,446,717	($1,536,834)
Chippewa	$76,921,567	$772,315	($6,916,602)	($16,511,506)	($29,473,217)	($4,952,104)	($20,352,373)	$21,874,362	$44,264,435	($2,086,127)
Clark	$5,750,907	($5,024,804)	($4,526,035)	($6,671,847)	($17,127,538)	($4,821,968)	($13,819,167)	($7,074,256)	($30,977,581)	$6,616,536
Columbia	$8,431,936	($4,151,975)	($7,514,012)	($33,230,559)	($30,236,284)	($3,303,248)	($16,811,072)	($1,033,654)	($16,862,805)	($2,291,753)
Crawford	$6,632,949	($2,625,019)	$120,201	($1,708,663)	($5,589,560)	$276,881	($4,381,624)	$11,665,911	$36,314,104	($1,931,040)
Dane	($479,324,839)	$22,066,635	$19,537,340	($213,816,144)	$68,232,032	$8,526,253	$22,455,712	$29,846,747	($319,056,481)	($11,037,180)
Dodge	$38,785,298	($9,323,068)	($2,740,597)	($30,111,434)	($36,560,404)	($5,703,495)	($22,755,055)	($4,728,933)	$18,979,738	($6,283,361)
Door	$32,249,439	$7,581,025	($3,133,956)	$8,475,109	$9,596,022	($1,460,754)	$19,883,748	($1,363,235)	($9,790,161)	$15,326,891
Douglas	($24,701,459)	($4,260,928)	($989,650)	$54,479,344	($6,344,535)	($1,328,517)	($14,128,248)	$2,173,355	$13,730,648	$2,426,549
Dunn	$26,277,447	($4,488,425)	($1,890,786)	($28,056,089)	($14,348,618)	($2,631,108)	($13,579,780)	($3,852,062)	$33,183,379	($2,078,450)
Eau Claire	($16,489,409)	$3,322,358	$25,270,771	$93,664,467	$55,217,588	$2,966,472	$33,813,282	$48,454,193	$44,629,242	$18,581,205
Florence	($3,007,378)	($1,452,132)	($1,165,437)	($3,427,263)	($4,499,297)	($870,829)	($2,231,733)	($1,080,727)	($4,975,146)	($543,103)
Fond du Lac	$46,708,173	($6,714,679)	$2,041,064	($20,810,754)	($4,093,081)	$1,184,106	($23,872,745)	($16,511,059)	($15,133,957)	($9,063,203)
Forest	($488,543)	($1,007,240)	($1,911,888)	$3,250,416	($7,381,051)	($1,320,234)	($2,961,901)	($1,234,004)	($7,081,522)	($272,007)
Grant	($3,205,530)	($4,975,789)	($4,562,389)	$25,170,170	($31,765,039)	($4,026,794)	($14,001,618)	($7,631,732)	$11,125,945	($6,013,142)
Green	$131,536	($2,089,197)	($803,543)	($25,164,426)	($22,211,945)	($2,125,420)	($13,723,922)	($6,369,582)	$12,278,313	$3,749,434
Green Lake	$24,633,189	($641,072)	($1,478,468)	$7,859,743	($16,355,275)	($2,671,175)	($6,530,059)	($3,724,066)	$11,361,293	$5,597,967
Iowa	$5,313,294	($185,425)	$2,119,762	($1,896,808)	($22,799,308)	($1,449,757)	($10,213,506)	($3,742,020)	$12,634,360	($1,792,943)
Iron	($794,096)	($649,714)	($1,418,062)	($534,358)	($5,474,584)	($1,004,934)	($2,058,132)	($5,424)	($6,138,076)	($462,458)
Jackson	$1,006,314	($878,269)	($1,473,730)	($8,024,955)	($11,480,914)	($3,447,284)	($8,890,474)	($4,898,191)	$19,168,910	($3,171,820)
Jefferson	$7,353,002	($5,989,658)	($8,269,625)	$8,801,603	($36,415,060)	$2,864,519	$22,655,708	($12,543,360)	$150,661	($12,751,862)
Juneau	$29,956,699	($2,679,000)	($396,392)	($8,928,685)	($3,006,394)	$359,143	($8,823,672)	($2,548,321)	($17,497,202)	($3,230,587)
Kenosha	($64,840,812)	$774,442	$6,474,858	($48,639,344)	$56,973,619	$15,051,326	$120,470,049	$29,118,873	($4,124,465)	($1,586,331)
Kewaunee	$9,378,381	($2,165,696)	($3,042,181)	($15,666,761)	($19,951,522)	($3,021,982)	($8,156,320)	($4,131,914)	($22,757,937)	($5,816,405)
La Crosse	$11,861,001	($3,008,575)	$25,708,233	$80,041,820	$42,270,291	$2,970,957	$25,307,443	$24,634,111	$72,236,744	$22,940,397
Lafayette	($3,880,623)	($2,259,185)	($2,233,109)	($606,742)	($14,383,302)	($2,471,922)	($6,635,576)	($3,670,685)	($14,547,324)	($2,245,669)
Langlade	$26,781,700	($1,212,221)	($2,133,925)	$30,354,555	($16,576,930)	$993,060	($7,067,039)	($438,170)	$42,809,149	($1,413,726)

Table 5 (cont): Surplus or Leakage Retail Sectors

	Motor Vehicle and Parts Dealers	Furniture and Home Furnishings	Electronics and Appliance	Building Material and Garden Equipment and Supplies Dealers	Food and Beverage	Health and Personal Care	Clothing and Clothing Accessories	Sporting Goods, Hobby, Book, and Music	General Merchandise	Miscellaneous Store Retailers
Lincoln	$20,503,895	$65,034	($2,283,592)	($12,732,998)	($7,393,742)	($1,479,743)	($10,838,332)	($1,992,726)	$2,600,135	($2,447,469)
Marathon	$61,107,545	($2,845,695)	$6,699,313	$88,518,072	($4,596,998)	($4,506,400)	($9,308,794)	$12,786,054	$12,954,265	$12,105,097
Marinette	$31,997,957	($4,646,653)	($3,043,549)	$32,005,873	$1,584,345	($2,451,388)	($3,967,220)	($2,725,862)	$21,383,293	($3,482,927)
Marquette	$5,667,638	($2,249,670)	($2,256,949)	($9,761,821)	($12,374,121)	($2,035,505)	($5,572,343)	$1,421,713	($11,214,561)	($2,540,442)
Menominee	($4,747,464)	($933,187)	($748,948)	($3,956,251)	($2,891,394)	($575,562)	($1,348,384)	($788,177)	($4,209,449)	($1,129,818)
Milwaukee	($416,693,304)	$49,995,380	$663,074	($441,763,678)	$245,260,735	$75,842,469	$251,553,866	($66,482,768)	($432,177,854)	($39,013,120)
Monroe	$18,858,889	$311,914	($2,251,291)	($7,466,760)	($21,565,908)	($3,912,135)	($15,540,952)	($7,185,835)	$53,648,968	($3,927,145)
Oconto	$32,868,814	($3,229,757)	($5,042,109)	($21,514,616)	($19,222,717)	($6,054,585)	($16,497,154)	($6,981,554)	($36,783,739)	($8,701,057)
Oneida	$39,545,665	$7,919,321	$271,729	$118,216,423	$4,513,555	$2,042,237	($3,288,581)	$14,851,958	$72,199,254	$6,542,148
Outagamie	$119,387,954	$6,599,624	$26,598,642	$62,091,440	$59,049,499	$15,529,785	$79,006,989	$55,583,780	$38,288,935	$6,388,243
Ozaukee	($114,715,634)	($8,820,691)	($18,030,360)	($85,832,159)	($2,353,879)	($6,400,725)	($20,297,705)	($16,619,106)	($71,907,278)	($19,449,684)
Pepin	$375,610	($1,294,878)	($1,307,468)	($1,960,084)	($7,098,795)	($1,104,239)	($3,246,433)	$478,956	($7,711,418)	($626,175)
Pierce	($29,956,070)	($5,559,383)	($5,496,860)	($22,242,149)	($12,795,259)	($6,319,131)	($17,205,488)	($6,440,831)	($46,909,690)	($6,283,601)
Polk	($2,874,579)	($2,139,570)	($3,970,719)	$66,931,144	($9,937,119)	($5,883,769)	($18,209,033)	($4,285,363)	$16,049,757	($3,392,344)
Portage	$9,963,557	$908,504	$10,197,935	$38,437,781	$9,493,255	($3,134,776)	($7,062,921)	$1,706,885	$38,023,917	$5,681,390
Price	$3,641,591	($1,249,266)	($1,283,608)	$10,190,013	($12,007,411)	($1,976,329)	($5,810,619)	($1,505,738)	($10,696,232)	$824,664
Richland	$12,982,958	($2,906,444)	($1,646,644)	($2,025,281)	($14,925,960)	($2,649,862)	($5,588,132)	($3,896,883)	$21,713,293	($308,484)
Rock	$99,950,692	($2,753,465)	$12,411,572	$41,003,772	$37,735,273	$2,026,641	($15,479,273)	$3,551,167	$40,513,644	$29,800,144
Rusk	$2,753,323	($2,273,578)	($3,097,795)	$1,975,158	($11,959,378)	($2,303,675)	($5,919,524)	($2,962,667)	$10,920,052	($2,712,674)
Sauk	$22,864,628	($2,227,499)	($149,966)	$60,259,554	($4,464,874)	$10,630,559	$35,655,621	$1,418,430	$76,745,304	$6,881,636
Sawyer	$38,441,783	$4,856,835	$1,829,212	$25,304,542	$1,126,218	($199,501)	($781,907)	$4,410,633	$47,078,268	$5,013,047
Shawano	$34,180,368	($2,076,804)	($2,943,443)	($809,393)	($13,917,609)	($1,592,117)	($12,947,200)	($4,204,448)	$17,605,333	($2,352,757)
Sheboygan	($2,270,590)	($4,129,637)	$3,746,594	($6,985,508)	($1,073,280)	($3,341,605)	($32,420,984)	($19,490,285)	$10,712,723	($11,976,417)
St. Croix	($58,527,205)	($4,779,138)	($11,955,343)	$64,730,513	$11,188,612	($8,881,067)	($39,997,301)	($15,382,873)	($7,698,477)	$6,658,405
Taylor	$12,239,622	($3,160,193)	($592,788)	$8,746,789	($16,916,069)	($2,940,522)	($7,287,924)	($1,739,774)	$9,180,713	($3,278,133)
Trempealeau	$1,439,910	($329,103)	($4,362,160)	($13,786,976)	($9,327,846)	($4,364,315)	($10,793,907)	($4,723,123)	($24,903,380)	($1,221,500)
Vernon	$8,841,762	($1,000,367)	($1,346,633)	($4,724,810)	($8,984,953)	($1,582,114)	($10,199,695)	($3,319,306)	$2,079,581	($590,480)
Vilas	$50,885,818	$6,801,452	$1,132,680	$21,362,504	$4,421,244	$391,185	($6,013,664)	$6,589,137	($25,360,793)	$1,721,166
Walworth	$36,253,141	$18,137,693	$8,043,411	$57,133,191	$559,768	($1,902,754)	($12,136,003)	($9,222,347)	$34,410,052	$1,341,542
Washburn	$24,506,840	$10,706	($981,384)	$12,729,834	($1,047,857)	($1,608,454)	($5,668,994)	$997,672	($13,929,708)	($23,104)
Washington	($8,972,541)	($9,898,869)	($11,286,169)	$27,742,942	($33,407,178)	($5,382,446)	($29,372,525)	($21,504,126)	$19,344,546	($16,923,640)
Waupaca	$36,986,513	($2,830,323)	($6,220,785)	($25,835,507)	($3,520,894)	$2,823,955	($19,046,531)	($9,958,363)	$8,418,740	($5,041,151)
Waushara	$12,656,599	($2,565,291)	$12,964	($13,216,081)	($7,083,084)	($3,154,695)	($9,136,317)	($4,950,594)	($17,524,833)	($1,513,369)
Wood	$13,469,842	$8,270,276	($9,906,014)	($13,727,778)	$9,448,513	($1,549,278)	($25,565,285)	($7,910,156)	$76,192,501	($2,696,355)

Table 6: Pull Factors Selected Service Sectors

	Professional, Scientific, and Technical Services	Administrative and Support Services	Data Processing, Hosting, and Related Services	Telecommun-ications	Accommodation	Food Services and Drinking Places	Repair and Maintenance	Personal and Laundry Services
Adams	0.95	1.02	1.21	1.75	-	1.61	1.08	1.82
Ashland	1.05	1.05	0.84	0.94	-	1.19	1.21	1.39
Barron	1.38	0.69	0.60	1.11	1.06	0.98	1.08	0.85
Bayfield	0.97	0.88	0.69	1.57	4.30	0.77	0.80	0.98
Brown	1.24	0.99	1.07	1.04	0.84	1.10	0.92	0.93
Buffalo	0.53	0.44	0.82	0.94	-	0.74	1.08	1.21
Burnett	0.72	0.57	1.14	1.21	-	0.98	1.00	0.75
Calumet	0.74	0.74	1.63	0.86	-	0.68	0.68	0.88
Chippewa	1.01	1.90	1.01	0.93	0.72	0.88	1.26	1.33
Clark	0.49	0.79	0.74	0.75	-	0.42	1.33	0.69
Columbia	0.54	0.69	0.76	1.07	1.23	0.86	1.21	0.82
Crawford	1.20	0.47	1.16	1.50	2.29	1.21	0.92	0.46
Dane	1.43	1.27	1.22	0.97	0.72	0.88	0.69	0.89
Dodge	0.83	0.68	0.62	1.01	-	0.60	1.48	0.94
Door	1.85	2.46	0.82	1.08	8.93	2.19	0.88	1.81
Douglas	0.86	0.67	0.81	1.12	0.97	1.29	1.78	0.95
Dunn	1.27	0.52	0.72	1.03	-	0.83	1.18	1.16
Eau Claire	0.79	1.17	0.90	0.65	1.02	1.18	1.18	1.47
Florence	0.37	-	-	0.87	-	-	-	0.56
Fond du Lac	0.75	0.82	0.65	0.94	0.50	0.90	1.31	1.27
Forest	0.66	0.28	1.30	1.29	-	0.74	-	1.05
Grant	0.50	0.48	0.92	1.06	-	0.72	1.44	0.67
Green	0.68	0.56	1.04	1.07	-	0.67	1.77	0.79
Green Lake	0.92	1.58	0.92	0.91	-	0.63	0.77	1.21
Iowa	0.86	0.69	0.95	0.99	1.87	0.53	1.08	0.73
Iron	2.50	0.82	-	1.06	-	1.25	-	0.92
Jackson	0.56	0.52	0.84	0.97	-	0.80	0.97	0.79
Jefferson	0.74	0.79	0.62	1.01	0.47	0.79	1.28	0.97
Juneau	0.73	0.58	1.08	1.28	1.88	1.12	1.46	0.99
Kenosha	0.71	1.18	0.58	0.97	0.45	1.05	0.80	0.99
Kewaunee	0.35	0.32	0.73	0.90	-	0.44	1.05	0.81
La Crosse	1.04	0.93	0.83	0.99	1.21	1.25	1.20	1.48
Lafayette	0.34	0.24	1.08	1.00	-	0.48	2.55	0.86
Langlade	0.66	0.58	1.22	1.02	-	1.10	0.68	1.17

Table 6 (cont): Pull Factors Selected Service Sectors

	Professional, Scientific, and Technical Services	Administrative and Support Services	Data Processing, Hosting, and Related Services	Telecommun-ications	Accommodation	Food Services and Drinking Places	Repair and Maintenance	Personal and Laundry Services
Lincoln	1.03	0.42	0.80	0.87	0.52	0.86	2.59	1.19
Marathon	0.87	0.89	0.70	0.99	0.63	0.87	1.17	0.85
Marinette	0.55	0.82	1.17	1.16	1.04	1.01	1.21	2.21
Marquette	0.45	0.50	0.84	1.45	-	0.65	1.45	0.84
Menominee	1.53	0.54	-	0.66	-	-	-	-
Milwaukee	1.27	0.98	1.64	1.06	0.79	1.18	0.74	1.09
Monroe	0.42	0.73	0.73	1.09	1.79	0.95	1.07	0.87
Oconto	0.35	0.82	0.83	0.96	-	0.63	0.51	0.59
Oneida	0.92	1.61	0.79	1.10	2.13	1.29	1.93	1.41
Outagamie	1.10	0.98	0.71	0.92	0.51	1.07	1.06	1.09
Ozaukee	0.65	1.13	0.72	0.58	0.35	0.60	0.72	0.73
Pepin	0.91	0.41	-	0.70	-	0.89	1.36	1.73
Pierce	0.86	0.41	0.64	0.94	-	0.69	0.40	1.06
Polk	0.57	0.63	0.72	0.94	-	0.84	1.21	0.74
Portage	0.93	0.83	0.83	1.22	0.87	1.09	0.90	0.96
Price	0.73	0.36	0.95	1.05	-	0.58	1.67	1.22
Richland	0.51	0.58	0.70	1.17	-	0.66	0.97	0.48
Rock	0.85	0.90	0.74	1.20	0.64	1.10	1.06	0.87
Rusk	0.43	0.85	0.89	1.11	-	0.58	1.36	1.01
Sauk	1.00	1.48	0.68	1.01	14.18	2.45	1.18	0.91
Sawyer	1.63	1.19	1.31	0.96	5.20	1.36	1.26	1.49
Shawano	0.40	0.70	0.93	1.16	0.54	1.05	2.07	0.81
Sheboygan	0.87	0.91	0.62	0.93	1.34	0.95	0.89	0.80
St. Croix	0.50	0.76	0.53	1.03	0.43	0.99	1.07	0.83
Taylor	0.38	0.52	0.91	0.84	-	0.61	1.54	0.72
Trempealeau	0.73	0.51	1.76	1.41	-	0.65	1.61	0.88
Vernon	0.66	0.53	0.84	1.00	-	0.53	1.39	0.80
Vilas	1.94	1.51	0.94	1.08	6.07	1.59	1.71	2.10
Walworth	0.75	1.88	0.58	0.90	4.14	1.28	0.93	1.04
Washburn	1.56	0.98	0.96	1.02	-	0.91	1.44	1.02
Washington	0.72	1.21	0.54	0.87	0.26	0.77	1.35	0.79
Waupaca	0.41	0.58	0.77	0.91	0.88	0.87	1.14	1.06
Waushara	0.82	0.60	0.85	1.13	-	0.74	1.05	1.09
Wood	0.53	0.91	0.60	1.27	0.51	0.86	1.37	0.83

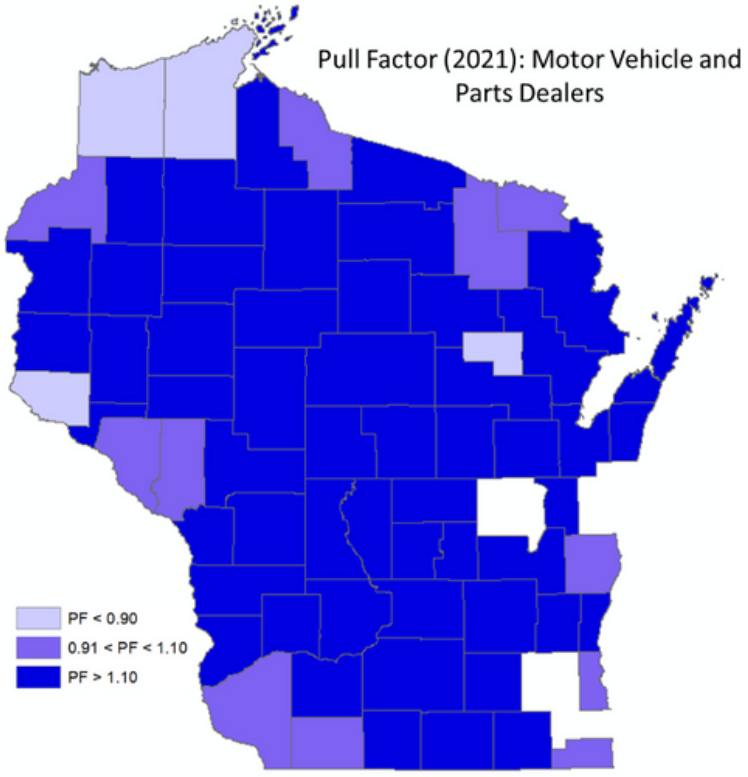
Table 7: Surplus or Leakage Selected Service Sectors

	Professional, Scientific, and Technical Services	Administrative and Support Services	Data Processing, Hosting, and Related Services	Telecommun-ications	Accommodation	Food Services and Drinking Places	Repair and Maintenance	Personal and Laundry Services
Adams	($356,153)	$109,193	$275,638	$6,648,151	($5,352,381)	$17,089,363	$570,267	$2,931,070
Ashland	$240,322	$184,432	($155,711)	($405,720)	($4,026,990)	$4,020,101	$1,176,666	$1,047,116
Barron	$6,973,084	($3,876,389)	($1,375,550)	$2,631,391	$870,732	($1,753,250)	$1,503,815	($1,411,581)
Bayfield	($170,620)	($511,060)	($349,391)	$4,423,455	$15,498,752	($5,730,703)	($1,290,650)	($52,495)
Brown	$27,959,724	($1,040,917)	$1,555,860	$5,180,917	($14,035,709)	$46,080,602	($10,067,592)	($4,186,315)
Buffalo	($2,316,526)	($1,937,924)	($170,575)	($395,639)	($3,847,185)	($5,112,383)	$443,035	$545,724
Burnett	($1,589,694)	($1,679,047)	$145,786	$1,519,146	($4,419,920)	($510,290)	($286)	($730,245)
Calumet	($5,723,146)	($3,960,156)	$2,536,891	($3,913,401)	($16,760,225)	($27,534,632)	($7,376,893)	($1,367,134)
Chippewa	$177,868	$15,461,621	$60,866	($2,212,648)	($5,443,523)	($11,891,037)	$6,877,156	$4,268,389
Clark	($6,083,707)	($1,751,279)	($574,513)	($3,772,376)	($9,305,404)	($28,281,990)	$4,198,890	($1,929,856)
Columbia	($11,465,898)	($5,313,768)	($1,091,594)	$2,177,129	$4,359,646	($13,583,694)	$5,389,774	($2,266,069)
Crawford	$1,124,538	($2,025,464)	$170,221	$3,535,190	$5,558,607	$4,607,536	($470,783)	($1,563,980)
Dane	$125,824,894	$53,235,591	$12,212,420	($10,798,143)	($63,868,247)	($141,366,191)	($94,961,119)	($16,001,335)
Dodge	($5,568,978)	($7,243,748)	($2,308,440)	$349,933	($25,301,832)	($52,868,410)	$16,840,658	($1,047,155)
Door	$12,137,178	$14,371,239	($478,259)	$1,439,084	$87,651,347	$68,296,626	($1,838,748)	$5,970,458
Douglas	($2,167,064)	($3,615,815)	($569,950)	$2,491,438	($385,188)	$18,445,496	$13,009,805	($396,858)
Dunn	$4,151,586	($5,166,028)	($799,337)	$499,057	($11,972,580)	($10,353,565)	$2,910,674	$1,270,034
Eau Claire	($9,055,603)	$5,046,047	($804,732)	($18,884,229)	$585,927	$30,317,133	$8,381,236	$10,462,968
Florence	($1,181,541)	($1,296,025)	($350,555)	($299,404)	($1,450,980)	($7,551,329)	($1,992,245)	($423,785)
Fond du Lac	($10,533,745)	($5,162,006)	($2,722,972)	($3,382,789)	($16,223,955)	($16,644,649)	$13,619,813	$5,974,389
Forest	($1,040,183)	($1,541,402)	$170,332	$1,133,294	($2,380,319)	($3,255,250)	($3,268,258)	$82,329
Grant	($9,340,663)	($6,706,140)	($282,200)	$1,550,029	($14,507,533)	($21,212,887)	$8,828,899	($3,195,274)
Green	($5,107,043)	($4,819,224)	$126,425	$1,435,316	($12,276,287)	($20,997,535)	$13,046,241	($1,763,905)
Green Lake	($575,025)	$2,709,350	($107,033)	($769,494)	($5,274,421)	($10,164,191)	($1,671,651)	$741,380
Iowa	($1,328,169)	($2,035,042)	($95,411)	($153,848)	$6,428,025	($18,049,745)	$787,574	($1,335,765)
Iron	$3,420,824	($281,805)	($426,542)	$184,647	($1,765,501)	$2,298,977	($2,424,093)	($100,684)
Jackson	($3,336,852)	($2,525,960)	($225,643)	($278,407)	($5,889,366)	($6,142,541)	($223,245)	($846,019)
Jefferson	($8,488,569)	($4,744,758)	($2,314,874)	$606,668	($13,542,869)	($27,576,820)	$9,661,991	($569,571)
Juneau	($2,297,927)	($2,525,198)	$128,381	$3,035,536	$5,884,479	$4,287,815	$4,200,220	($39,871)
Kenosha	($19,668,557)	$8,411,633	($5,356,688)	($2,923,567)	($29,289,623)	$14,148,788	($14,372,617)	($385,570)
Kewaunee	($5,366,928)	($3,924,774)	($413,128)	($1,086,128)	($6,434,176)	($18,598,412)	$397,639	($832,896)
La Crosse	$2,089,937	($2,401,380)	($1,591,726)	($521,536)	$8,060,404	$50,770,261	$10,872,389	$12,588,088
Lafayette	($3,981,433)	($3,130,817)	$94,919	($7,554)	($4,638,478)	($12,559,879)	$9,864,112	($443,344)
Langlade	($2,326,398)	($2,001,712)	$289,120	$177,842	($5,345,902)	$2,648,164	($2,333,383)	$596,796

Table 7 (cont): Surplus or Leakage Selected Service Sectors

	Professional, Scientific, and Technical Services	Administrative and Support Services	Data Processing, Hosting, and Related Services	Telecommun-ications	Accommodation	Food Services and Drinking Places	Repair and Maintenance	Personal and Laundry Services
Lincoln	$306,725	($4,222,170)	($396,720)	($1,826,053)	($3,919,267)	($5,858,934)	$17,918,715	$1,031,504
Marathon	($7,491,751)	($4,248,438)	($3,185,113)	($443,088)	($16,559,766)	($29,388,383)	$10,514,802	($4,601,883)
Marinette	($6,771,220)	($1,889,120)	$487,487	$2,983,010	$513,401	$879,665	$3,384,533	$9,368,558
Marquette	($2,840,419)	($1,777,339)	($152,708)	$2,962,894	($3,990,536)	($7,339,769)	$2,467,088	($434,544)
Menominee	$633,647	($386,131)	($225,278)	($526,031)	($932,447)	($4,852,730)	($1,280,282)	($625,997)
Milwaukee	$99,659,115	($4,331,699)	$44,531,121	$25,949,547	($61,290,639)	$265,225,703	($102,274,244)	$17,379,209
Monroe	($9,323,227)	($2,977,939)	($830,174)	$1,913,522	$9,925,367	($3,108,418)	$1,245,512	($1,087,345)
Oconto	($9,345,253)	($1,757,756)	($463,423)	($749,301)	($11,124,270)	($21,367,825)	($7,420,535)	($3,051,211)
Oneida	($1,260,367)	$6,259,248	($576,495)	$1,826,215	$13,064,410	$17,718,823	$14,786,733	$3,202,069
Outagamie	$7,957,677	($1,309,345)	($4,262,550)	($7,656,526)	($30,621,648)	$23,995,291	$4,714,105	$3,575,033
Ozaukee	($21,750,441)	$5,609,878	($3,201,789)	($33,320,897)	($31,123,951)	($100,280,131)	($18,605,167)	($8,639,983)
Pepin	($254,984)	($1,200,234)	($553,090)	($1,118,101)	($2,289,294)	($1,363,694)	$1,135,894	$1,114,621
Pierce	($2,263,558)	($6,723,095)	($1,101,762)	($1,235,319)	($12,694,047)	($20,614,408)	($10,406,718)	$523,955
Polk	($7,401,371)	($4,350,484)	($878,240)	($1,297,215)	($13,202,376)	($11,289,653)	$3,806,482	($2,310,212)
Portage	($1,823,562)	($3,144,816)	($850,467)	$7,544,851	($2,829,634)	$10,372,319	($2,757,863)	($577,529)
Price	($1,350,791)	($2,205,746)	($46,935)	$294,716	($3,872,276)	($8,530,026)	$3,547,983	$563,986
Richland	($3,018,199)	($1,810,615)	($354,569)	$1,350,649	($4,813,480)	($8,449,213)	($228,159)	($1,669,224)
Rock	($9,376,393)	($4,121,371)	($2,943,517)	$15,584,522	($16,970,137)	$23,528,608	$4,038,600	($4,056,557)
Rusk	($2,842,396)	($518,989)	($99,383)	$689,165	($3,856,786)	($8,339,886)	$1,884,092	$34,943
Sauk	$80,865	$9,079,161	($1,619,918)	$246,170	$277,387,360	$158,865,924	$5,327,480	($1,226,572)
Sawyer	$4,047,270	$852,855	$377,522	($347,865)	$20,848,528	$9,215,571	$1,782,288	$1,625,486
Shawano	($8,681,501)	($3,050,460)	($201,308)	$3,026,566	($5,206,439)	$2,738,208	$16,568,819	($1,448,238)
Sheboygan	($6,491,131)	($2,910,638)	($3,526,355)	($4,133,998)	$12,804,538	($9,865,905)	($5,564,679)	($5,238,885)
St. Croix	($21,707,624)	($7,142,013)	($3,813,776)	$1,881,669	($18,982,879)	($1,090,928)	$3,394,956	($3,908,651)
Taylor	($4,336,441)	($2,330,256)	($115,305)	($1,481,382)	($5,455,271)	($10,968,937)	$4,076,037	($1,009,573)
Trempealeau	($2,899,748)	($3,665,502)	$1,553,261	$5,678,210	($8,458,937)	($15,431,259)	$7,042,614	($701,957)
Vernon	($3,615,186)	($3,419,456)	($304,818)	$20,673	($8,134,299)	($19,900,742)	$4,407,787	($1,106,434)
Vilas	$8,898,232	$3,311,218	($102,987)	$905,714	$37,031,013	$22,561,011	$7,143,727	$5,396,011
Walworth	($10,768,653)	$26,290,230	($3,435,913)	($5,719,382)	$105,454,664	$49,419,419	($3,078,070)	$948,608
Washburn	$3,520,819	($69,986)	($41,464)	$179,089	($4,829,272)	($2,205,366)	$2,898,254	$78,692
Washington	($18,393,528)	$9,527,760	($5,721,391)	($11,258,705)	($38,060,723)	($60,993,410)	$24,929,271	($7,199,627)
Waupaca	($11,267,517)	($5,513,007)	($819,984)	($2,096,721)	($1,758,196)	($9,758,013)	$2,753,385	$611,193
Waushara	($1,534,668)	($2,321,059)	($235,844)	$1,393,509	($6,446,410)	($8,575,181)	$448,966	$402,708
Wood	($13,323,949)	($1,843,952)	($2,090,151)	$9,566,553	($10,765,625)	($16,219,208)	$11,108,302	($2,551,189)

APPENDIX B


Pull Factor (2021): Motor Vehicle and Parts Dealers
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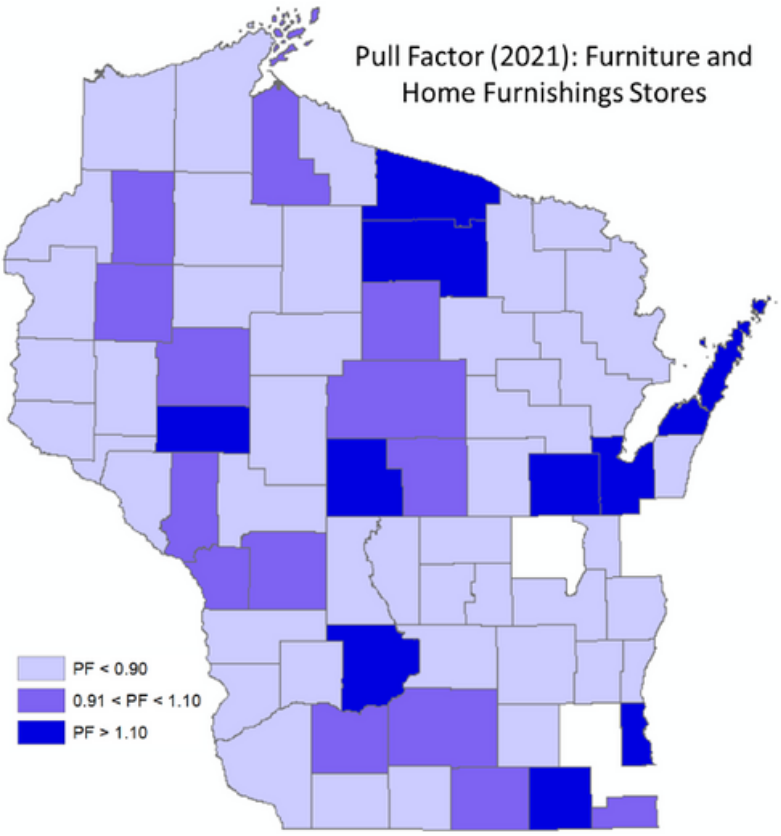
Pull Factor (2021): Furniture and Home Furnishings Stores
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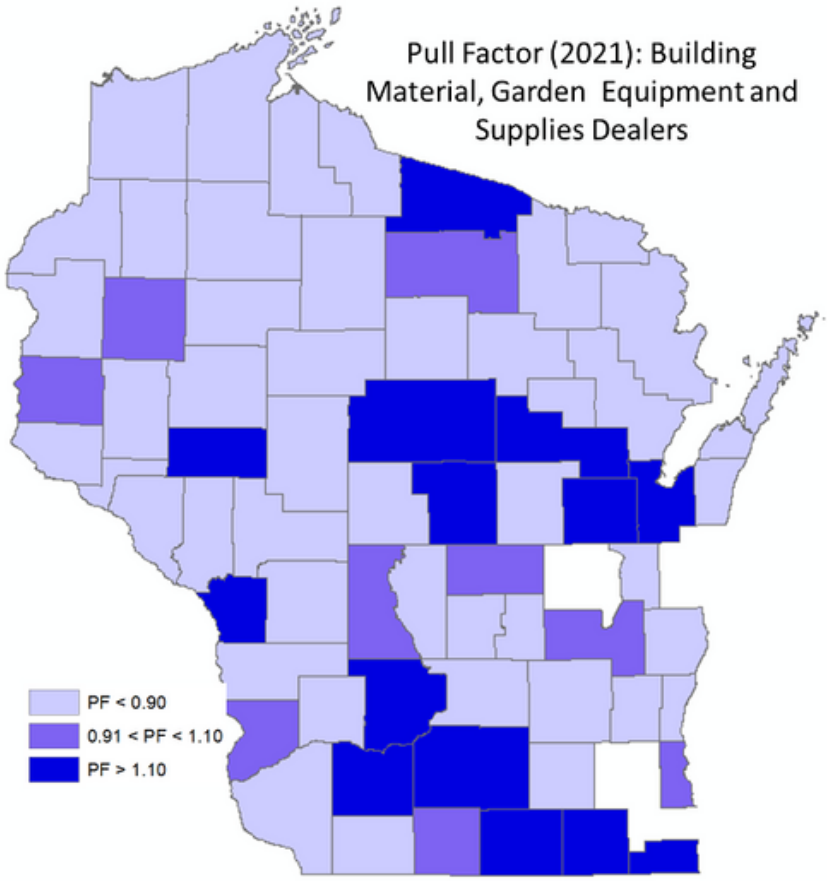
Pull Factor (2021): Building Material, Garden Equipment and Supplies Dealers
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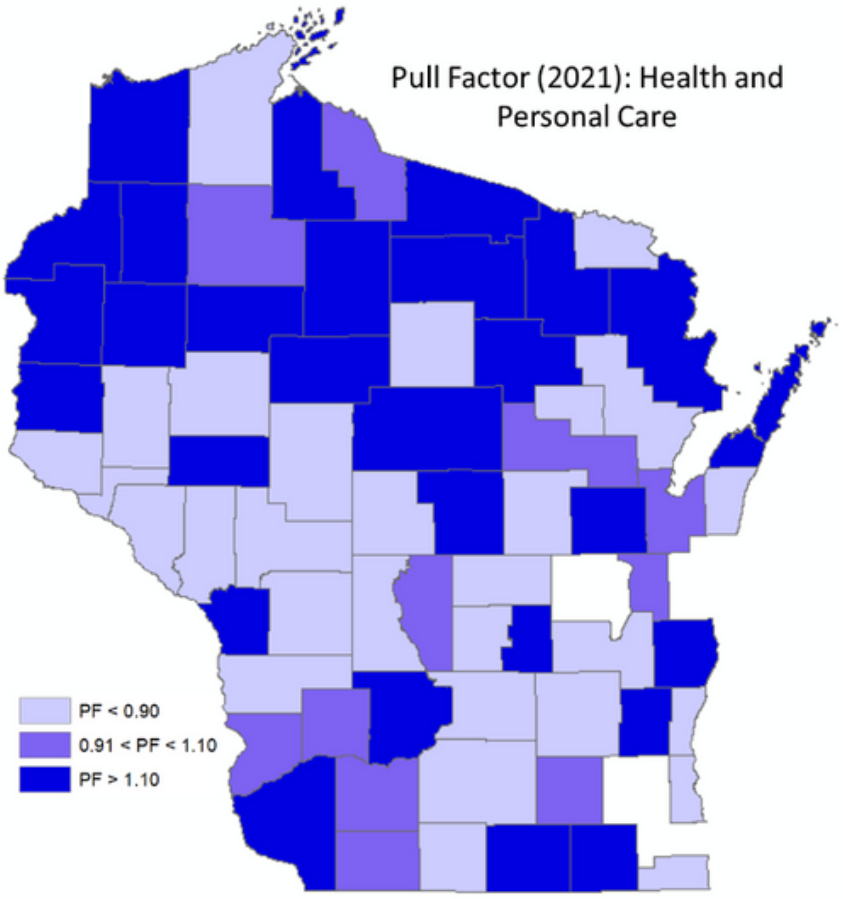
Pull Factor (2021): Health and Personal Care
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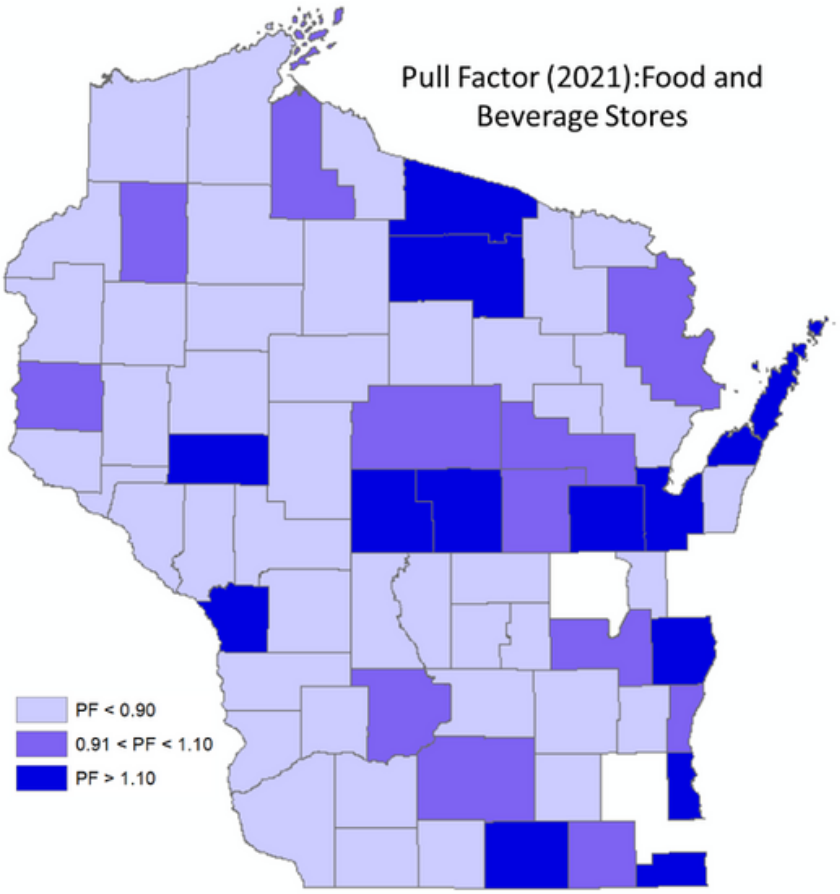
Pull Factor (2021):Food and Beverage Stores
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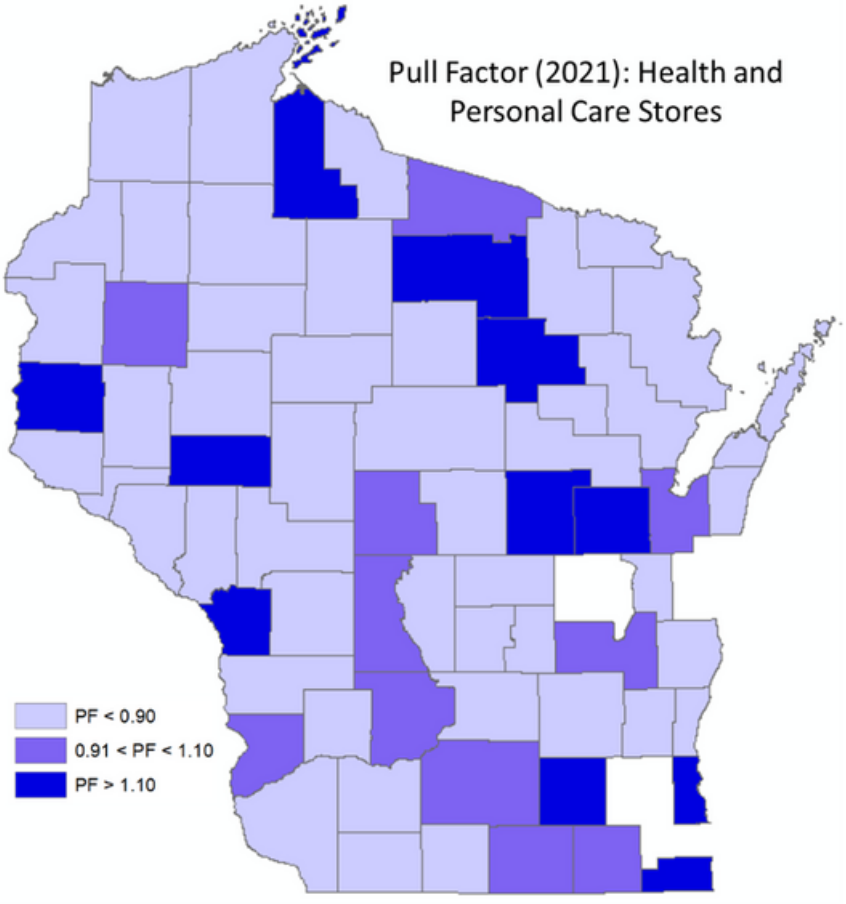
Pull Factor (2021): Health and Personal Care Stores
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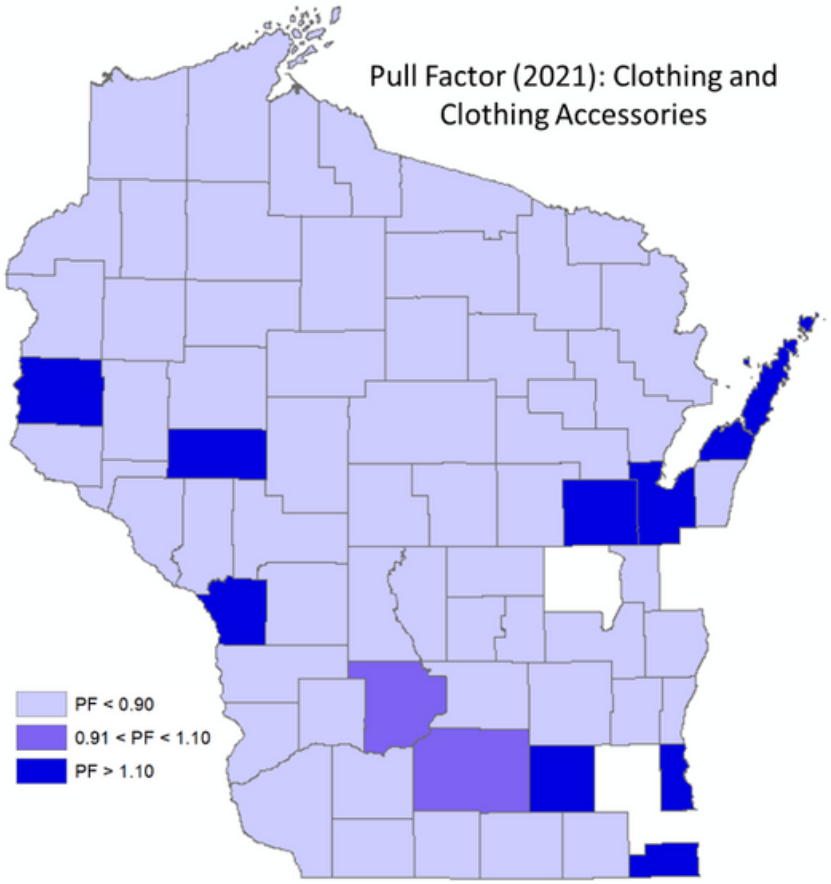
Pull Factor (2021): Clothing and Clothing Accessories
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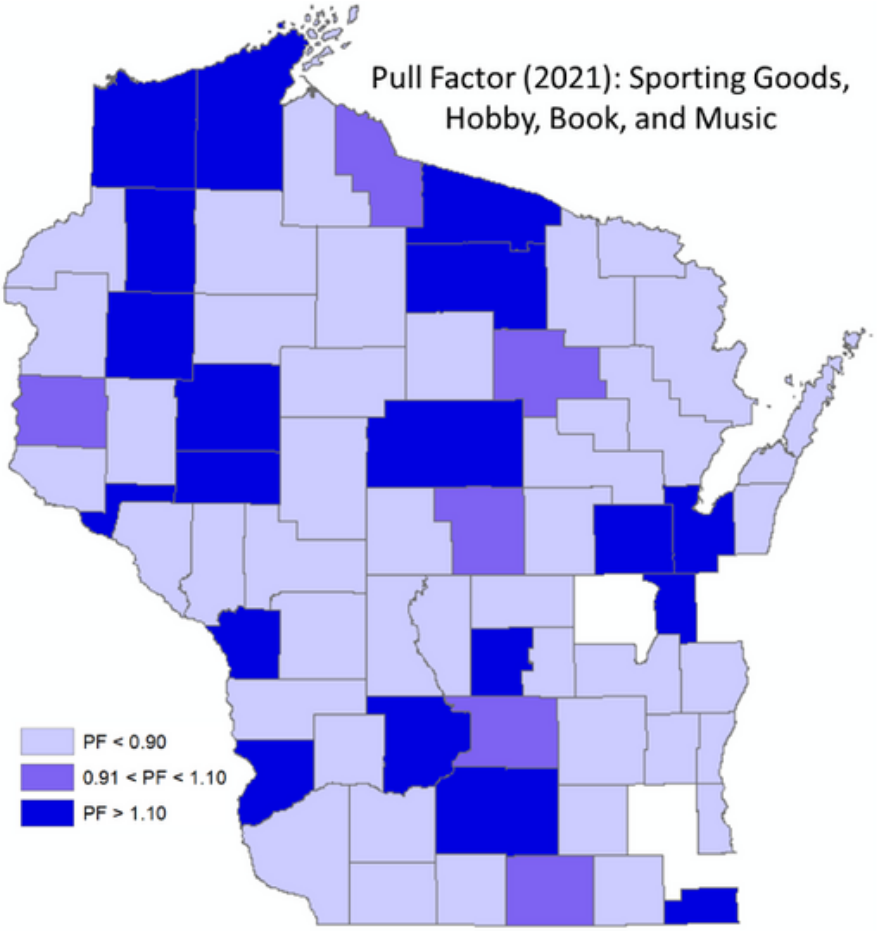
Pull Factor (2021): Sporting Goods, Hobby, Book, and Music
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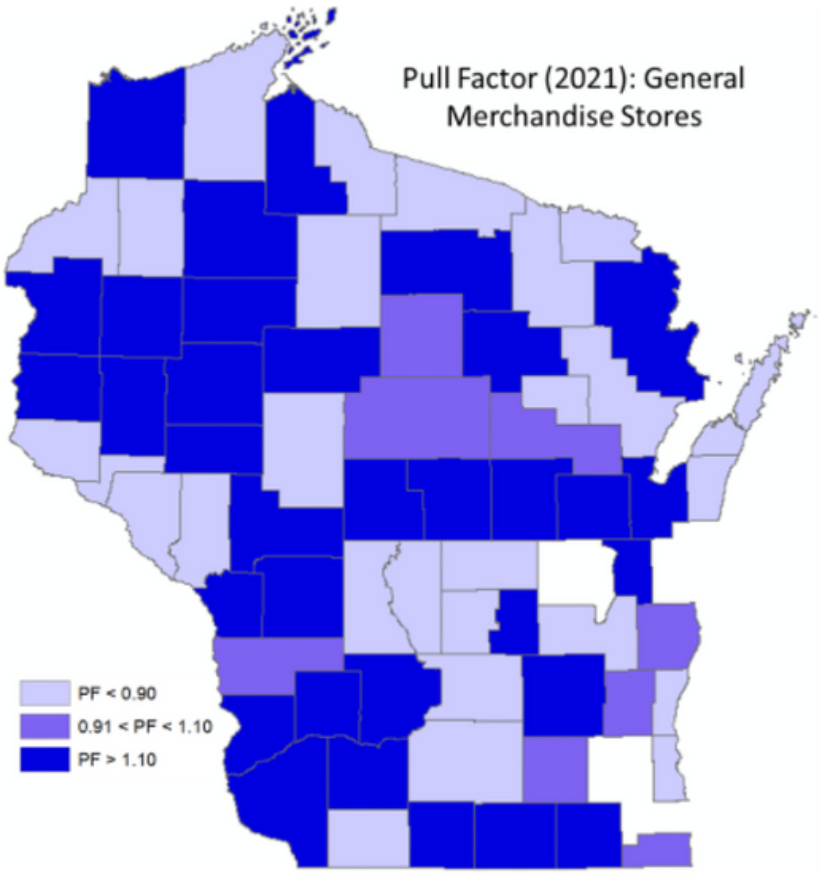
Pull Factor (2021): General Merchandise Stores
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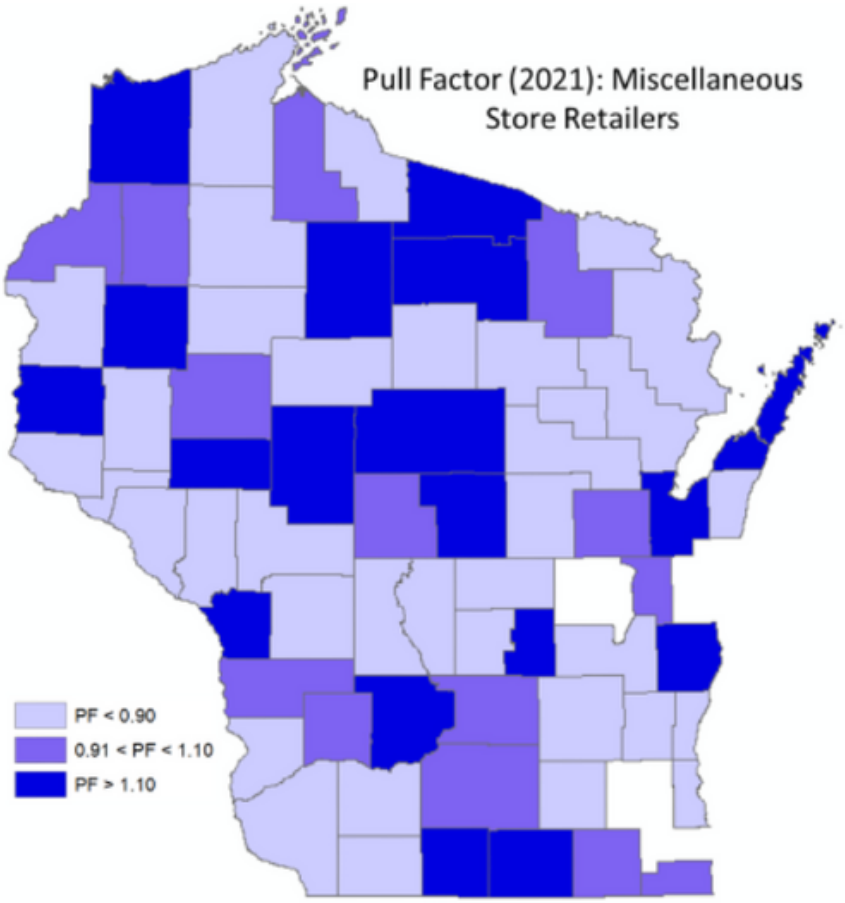
Pull Factor (2021): Miscellaneous Store Retailers
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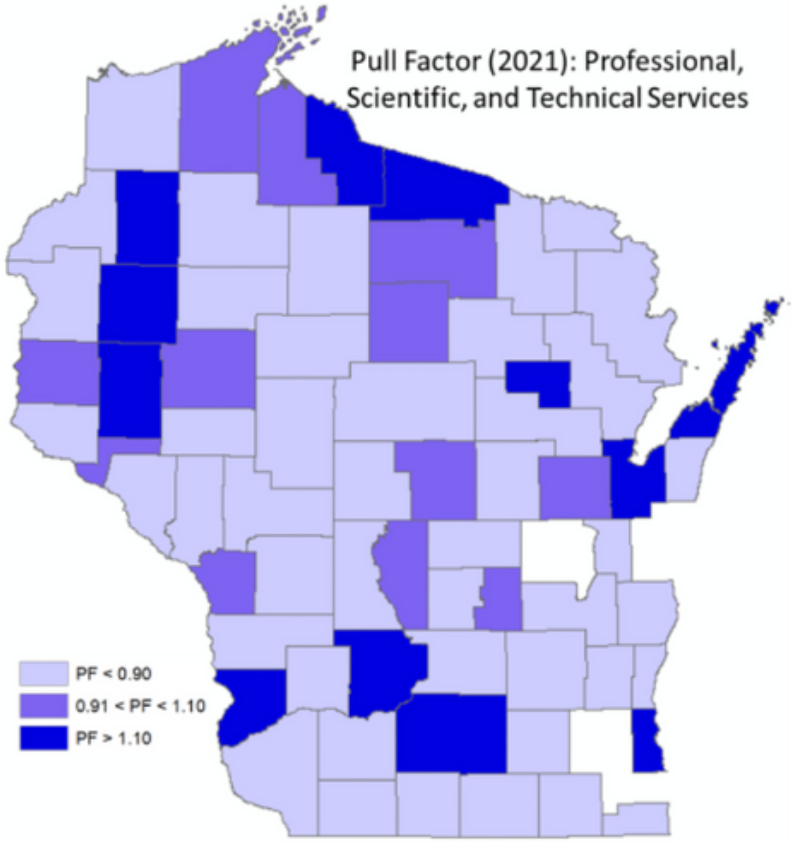
Pull Factor (2021): Professional, Scientific, and Technical Services
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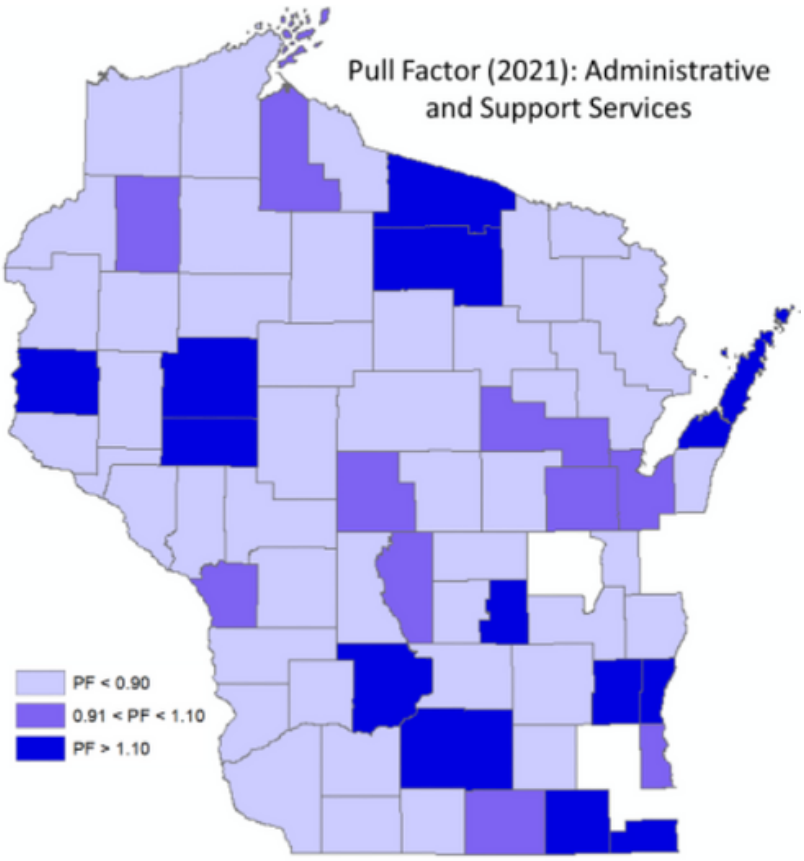
Pull Factor (2021): Administrative and Support Services
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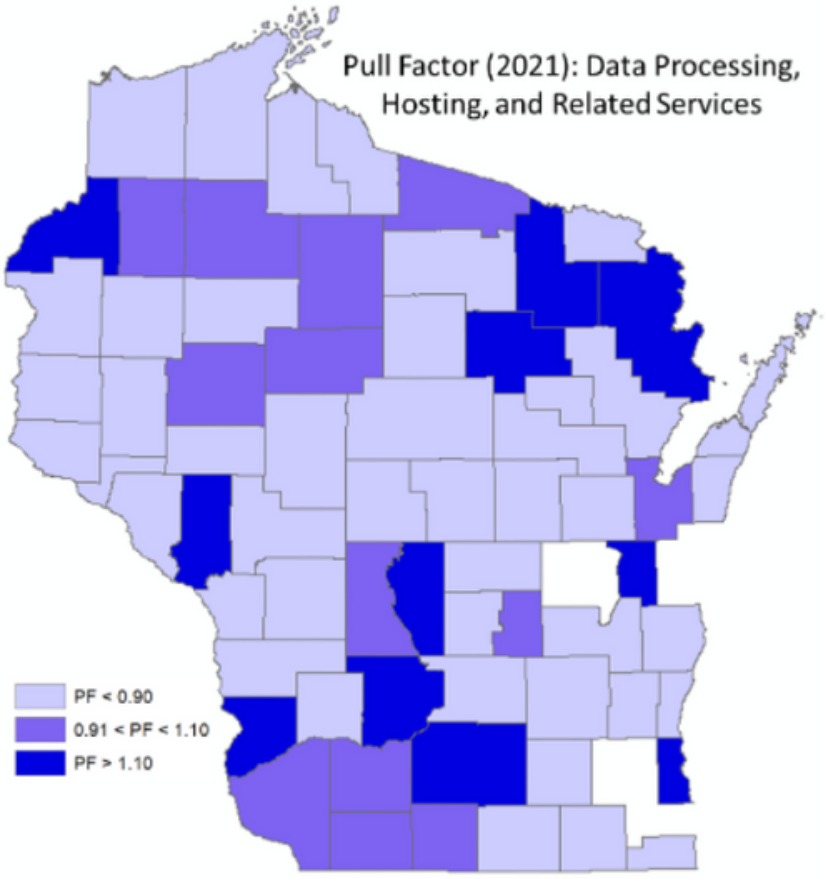
Pull Factor (2021): Data Processing, Hosting, and Related Services
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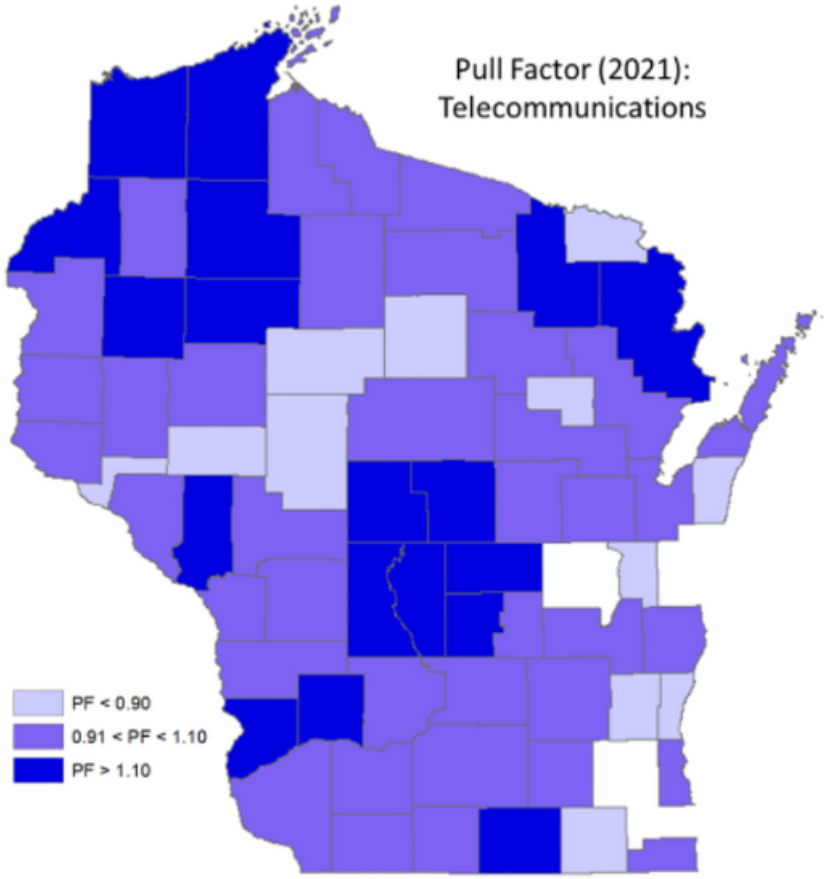
PF > 1.10


Pull Factor (2021): Telecommunications
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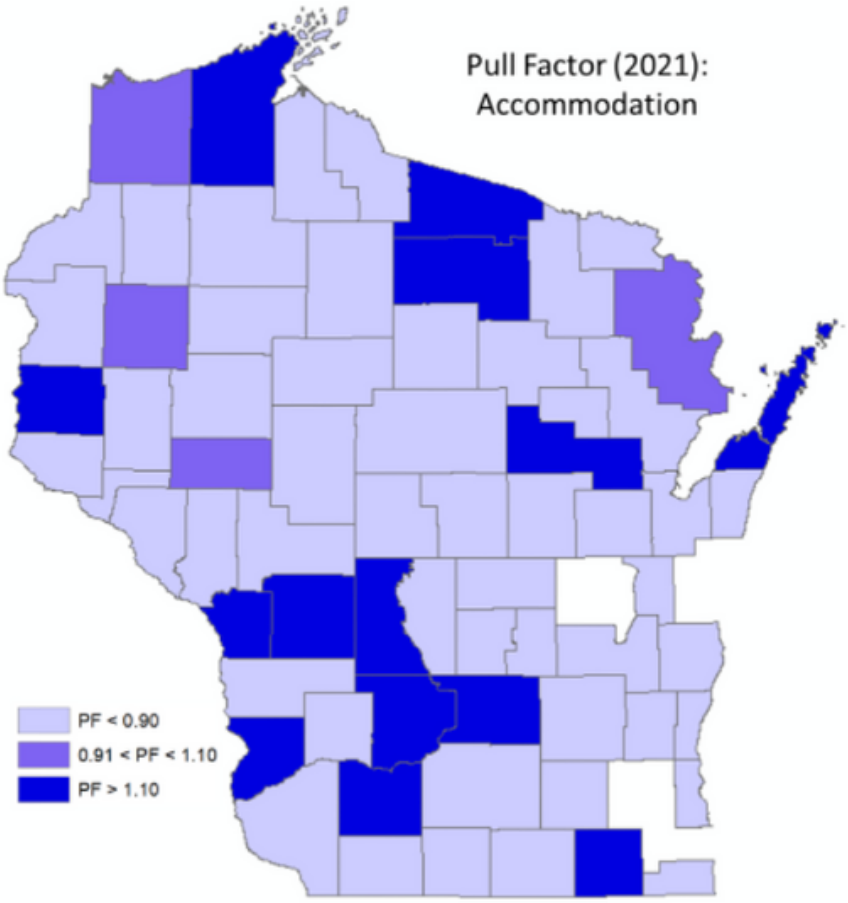
Pull Factor (2021):
Accommodation
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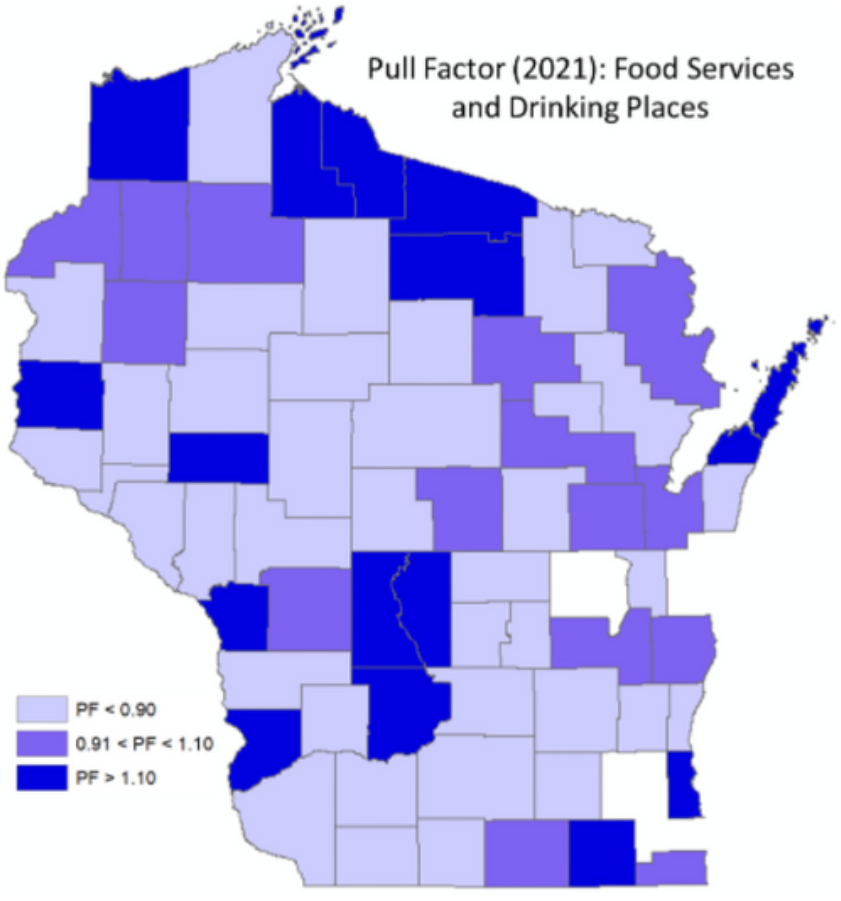
Pull Factor (2021): Food Services
and Drinking Places
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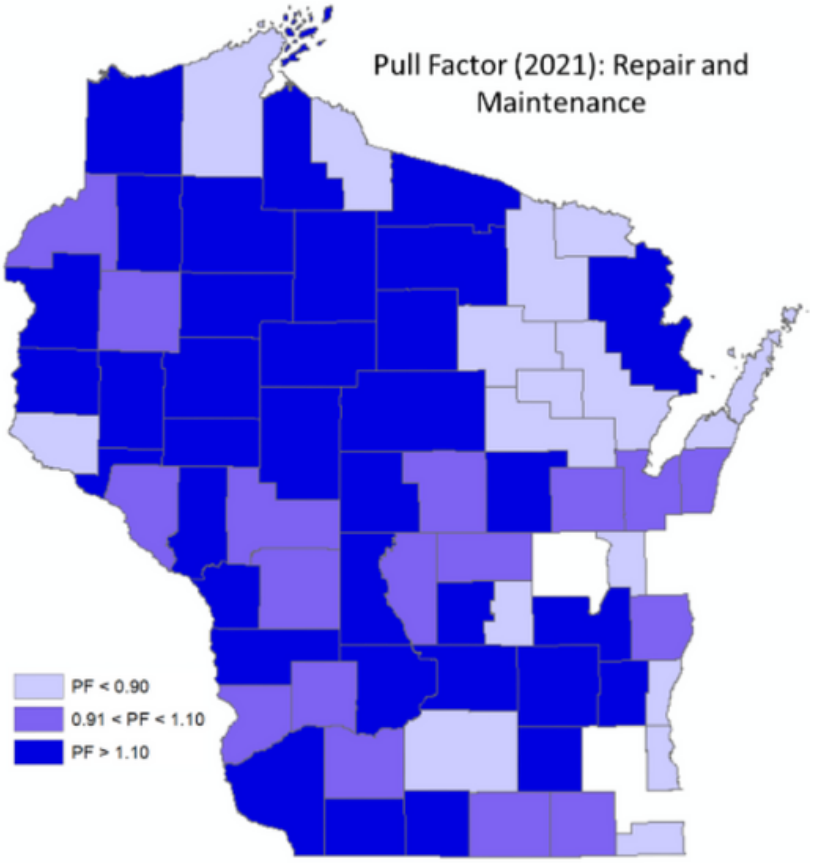
Pull Factor (2021): Repair and Maintenance
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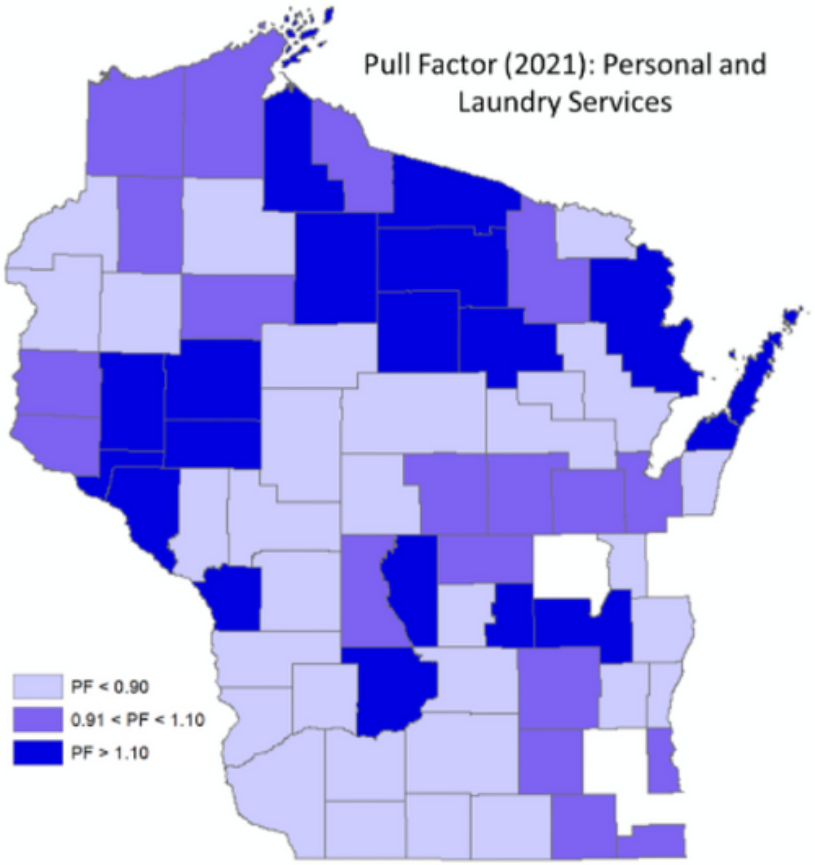
Pull Factor (2021): Personal and Laundry Services
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APPENDIX C: MARKET THRESHOLD ANALYSIS

Demand threshold is the minimum market required to support a particular good or service and still yield a normal profit for the merchant (Deller & Harris 1993; Shonkwiler & Harris 1996; Shaffer, Deller, and Marcouiller 2004). The concept of demand threshold is based on the internal economies of the firm and the characteristics of consumer demand and is defined where the average cost is just equal to or tangent to average revenue. Because of this, demand thresholds are not absolute but vary with the type of good or service. Demand thresholds are usually measured in terms of population, rather than quantity sold, by assuming consumers are homogenous in their buying power (income) and tastes.

To better understand this idea first consider the firm side, or supply side, of the market. For illustrative purposes consider two different types of businesses, say a women's clothing store and a household appliance store. The cost structures that these two different types of businesses face are distinct, which means that the underlying demand structure required to support each type of store is distinct. If we continue to assume that consumers are homogenous in their buying power (income) and tastes, what distinguishes the differences in the market threshold is population. The business with a higher cost structure will require more people to cover operating costs.

If we look at the demand side and allow for differences in tastes and preferences we can gain additional insights into the differences in required populations. For example, for household appliance stores the frequency of purchases is much lower than for women's clothing. Because of lower purchasing frequency, the population required to support an appliance store will be higher than a women's clothing store. Further, consumers wish to minimize the distance traveled to purchase any good or service. Therefore, frequently purchased items should be available nearby; less frequently purchased items need not be located nearby. Consumers' desire to minimize total travel means that they go to higher-order centers (i.e., cities) only for the goods and services not available in lower-order centers (i.e., towns and villages).

When we consider both the supply of the good, or service, which is reflected in the cost structure of the business combined with the frequency of purchases, we have an economic theoretical foundation for different market population thresholds. For Wisconsin, a women's clothing store requires a population of just over 13,000 people whereas an appliance store requires a population of about 33,300 people.

A men's clothing store by contrast requires a market population of 80,400 people. While the cost structures for women's and men's respective clothing stores, the differences in tastes and preferences and frequency of shopping explain these different market population thresholds. These estimates would suggest that we might see a women's clothing store in a smaller community, an appliance store in a medium size community, and a men's clothing store in a larger city.

For retail businesses, the sector that has the lowest population threshold is gasoline stations with convenience stores which require only 2,484 people whereas a luggage and leather goods store requires a population of 723,875 people. As such, we would expect to see gasoline stations with convenience stores in nearly every Wisconsin community except for the very smallest and luggage and leather goods stores in only the largest communities. For services, full-service restaurants require a population of only 1,150 people (a limited-service restaurant requires only a handful more people at 1,531 and an alcoholic beverage drinking place (bar or tavern) requires 2,210 people), but a computer and office machine repair and maintenance firm requires 75,208 people. Clearly, more specialized businesses that are less frequently utilized require a larger population base than a business that is less specialized and frequented more often. Also, note that simple to differences in women's and men's clothing stores a beauty salon has a population threshold of 3,400 but a barber shop has a threshold of 46,328.

When one considers the Pull Factors and corresponding Surplus/Leakage analysis in light of the insights gained from the population threshold analysis, finer insights can be gained into the market potentials for different retail and service businesses. For example, given the population size of Florence County (4,593) the small Pull Factors and large Leakages become understandable given the population threshold estimates.

APPENDIX REFERENCES

Deller, Steven & Tom Harris. 1993. Estimation of minimum market thresholds using stochastic frontier estimators. *Regional Science Perspectives*, 23(1), 3–17.

Shaffer, Ron, Steven Deller & David Marcouiller. 2004. C*ommunity Economic Development: Linking Theory and Practice*. Cambridge: Blackwell.

Shonkwiler, J. Scott & Tom Harris. 1996. Rural retail business thresholds and interdependencies. *Journal of Regional Science,* 36(4), 617–630.

APPENDIX D

Table A: Wisconsin 2019 Retail Market Population Thresholds

Retal Sector	Threshold	Retal Sector	Threshold
Gasoline Stations with Convenience Stores	2,484	Other Clothing Stores	30,005
Supermarkets and Other Grocery (except Convenience) Stores	6,001	Pet and Pet Supplies Stores	31,473
Automotive Parts and Accessories Stores	7,752	Motorcycle, ATV, and All Other Motor Vehicle Dealers	31,994
Electronic Shopping and Mail-Order Houses	8,191	Household Appliance Stores	33,282
Pharmacies and Drug Stores	9,091	Warehouse Clubs and Supercenters	35,311
All Other General Merchandise Stores	9,604	Cosmetics, Beauty Supplies, and Perfume Stores	35,969
Other Building Material Dealers	10,804	Boat Dealers	37,850
New Car Dealers	10,906	Tobacco Stores	39,938
Sporting Goods Stores	12,065	All Other Health and Personal Care Stores	40,782
Women's Clothing Stores	13,013	Home Centers	42,896
Other Direct Selling Establishments	13,132	Paint and Wallpaper Stores	42,896
Hardware Stores	13,313	Convenience Stores	45,242
Used Car Dealers	13,343	Book Stores	49,496
Used Merchandise Stores	13,723	Department Stores	52,645
Furniture Stores	14,299	Outdoor Power Equipment Stores	53,620
Beer, Wine, and Liquor Stores	14,370	Meat Markets	53,620
Family Clothing Stores	15,567	Clothing Accessories Stores	64,344
Gift, Novelty, and Souvenir Stores	16,086	Sewing, Needlework, and Piece Goods Stores	65,067
All Other Miscellaneous Store Retailers (except Tobacco Stores)	16,405	Recreational Vehicle Dealers	69,771
Shoe Stores	16,499	Children's and Infants' Clothing Stores	69,771
Electronics Stores	17,390	Vending Machine Operators	71,494
Jewelry Stores	18,502	Men's Clothing Stores	80,431
Nursery, Garden Center, and Farm Supply Stores	19,564	Musical Instrument and Supplies Stores	81,563
Floor Covering Stores	21,135	Art Dealers	89,092
Tire Dealers	23,072	Office Supplies and Stationery Stores	90,484
Florists	24,230	Confectionery and Nut Stores	109,264
All Other Home Furnishings Stores	24,643	Baked Goods Stores	123,213
Other Gasoline Stations	26,086	Fruit and Vegetable Markets	193,033
Food (Health) Supplement Stores	26,204	Window Treatment Stores	231,640
All Other Specialty Food Stores	27,841	Manufactured (Mobile) Home Dealers	251,783
Optical Goods Stores	28,955	Luggage and Leather Goods Stores	723,875
Hobby, Toy, and Game Stores	29,247	Fish and Seafood Markets	827,286
Fuel Dealers	29,697	News Dealers and Newsstands	827,286

Table B: Wisconsin 2019 Service Market Population Thresholds

Service Sector	Threshold	Service Sector	Threshold
Full-Service Restaurants	1,150	Offices of Real Estate Appraisers	21,689
Limited-Service Restaurants	1,531	Freight Transportation Arrangement	22,019
Drinking Places (Alcoholic Beverages)	2,120	Other Scientific and Technical Consulting Services	22,621
Insurance Agencies and Brokerages	2,159	School and Employee Bus Transportation	22,710
Offices of Physicians (except Mental Health Specialists)	2,379	Graphic Design Services	23,930
Landscaping Services	2,745	Continuing Care Retirement Communities	24,435
Offices of Dentists	2,923	Vocational Rehabilitation Services	24,748
General Automotive Repair	3,108	Architectural Services	25,738
Offices of Lawyers	3,118	Independent Artists, Writers, and Performers	26,086
Commercial Banking	3,177	Bowling Centers	26,935
Beauty Salons	3,400	Caterers	27,061
Offices of Real Estate Agents and Brokers	3,510	Car Washes	27,061
Child Day Care Services	3,656	Outpatient Mental Health and Substance Abuse Centers	27,576
Janitorial Services	4,924	Solid Waste Collection	28,527
Residential Intellectual and Developmental Disability Facilities	4,975	Data Processing Hosting, and Related Services	28,811
Hotels (except Casino Hotels) and Motels	5,184	Title Abstract and Settlement Offices	28,811
Offices of Chiropractors	5,407	All Other Professional, Scientific, and Technical Services	30,005
Assisted Living Facilities for the Elderly	5,633	Photography Studios, Portrait	30,640
Temporary Help Services	5,855	Other Activities Related to Credit Intermediation	31,819
Lessors of Residential Buildings and Dwellings	5,989	Advertising Agencies	31,994
Snack and Nonalcoholic Beverage Bars	6,357	Newspaper Publishers	33,669
Services for the Elderly and Persons with Disabilities	6,449	Drycleaning and Laundry Services (except Coin-Operated	34,065
Portfolio Management	6,618	Real Estate Credit	34,886
Engineering Services	6,664	Nonresidential Property Managers	34,886
Wired Telecommunications Carriers	7,028	Other Services Related to Advertising	35,097
Administrative Management and General Management Consulting St	7,340	RV (Recreational Vehicle) Parks and Campgrounds	35,311
Custom Computer Programming Services	7,560	Couriers and Express Delivery Services	36,885
Fitness and Recreational Sports Centers	7,560	Software Publishers	37,122
Automotive Body, Paint, and Interior Repair and Maintenance	7,794	HMO Medical Centers	37,604
Offices of Certified Public Accountants	7,858	Septic Tank and Related Services	37,850
Computer Systems Design Services	8,297	Automotive Oil Change and Lubrication Shops	38,099
Veterinary Services	8,417	Savings Institutions	39,128
Residential Property Managers	9,077	Exterminating and Pest Control Services	39,128
Other Individual and Family Services	9,401	Travel Agencies	40,782
Other Accounting Services	9,540	General Medical and Surgical Hospitals	40,782
Food Service Contractors	9,984	Residential Mental Health and Substance Abuse Facilities	40,782
Credit Unions	10,213	Third Party Administration of Insurance and Pension Funds	41,071
All Other Amusement and Recreation Industries	11,267	Testing Laboratories	41,662
Commercial and Industrial Machinery and Equipment (except Autom	11,311	Carpet and Upholstery Cleaning Services	42,270
Tax Preparation Services	12,090	Direct Life Insurance Carriers	42,581
Securities Brokerage	12,217	Museums	42,581
Marketing Consulting Services	12,348	Process Physical Distribution, and Logistics Consulting Services	43,541
Pet Care (except Veterinary) Services	12,700	Lessors of Miniwarehouses and Self-Storage Units	44,546
Office Administrative Services	13,282	Motor Vehicle Towing	45,598
Funeral Homes and Funeral Services	13,788	Ambulance Services	45,598
Offices of Mental Health Practitioners (except Physicians)	14,299	Barber Shops	46,328
Investment Advice	14,441	Special Needs Transportation	46,702
Home Health Care Services	14,587	Surveying and Mapping (except Geophysical) Services	47,081
Nursing Care Facilities (Skilled Nursing Facilities)	15,160	Other Commercial and Industrial Machinery and Equipment Rental an	47,467
Golf Courses and Country Clubs	15,525	Environmental Consulting Services	47,467
Lessors of Nonresidential Buildings (except Miniwarehouses)	15,651	Motion Picture and Video Production	47,860
All Other Outpatient Care Centers	16,499	Research and Development in the Physical, Engineering and Life Scie	48,664
Nail Salons	16,834	Coin-Operated Laundries and Drycleaners	48,664
General Warehousing and Storage	17,873	Offices of Physicians, Mental Health Specialists	49,922
Child and Youth Services	17,873	Interior Design Services	51,248
Offices of Optometrists	18,211	Building Inspection Services	52,171
Sports and Recreation Instruction	20,463	Kidney Dialysis Centers	52,171
Fine Arts Schools	20,609	Human Resources Consulting Services	52,645
Consumer Lending	21,369	Freestanding Ambulatory Surgical and Emergency Centers	53,620
Direct Property and Casualty Insurance Carriers	21,528	Other Community Housing Services	53,620

Table B 9 (cont): Wisconsin 2019 Service Market Population Thresholds

Service Sector	Threshold	Service Sector	Threshold
Truck, Utility Trailer, and RV (Recreational Vehicle) Rental and Leasin	54,121	Collection Agencies	125,891
Community Food Services	54,121	Blood and Organ Banks	125,891
Radio Stations	55,152	Bed-and-Breakfast Inns	125,891
Temporary Shelters	55,152	Offices of Physical, Occupational and Speech Therapists, and Audiolo	128,689
Periodical Publishers	55,683	Home and Garden Equipment Repair and Maintenance	128,689
Medical Laboratories	55,683	Other Airport Operations	131,614
Promoters of Performing Arts, Sports, and Similar Events without Fac	56,223	Diet and Weight Reducing Centers	131,614
Exam Preparation and Tutoring	56,775	Investigation Services	137,881
Other Computer Related Services	57,337	Other Support Activities for Road Transportation	148,487
Executive Search Services	57,910	Research and Development in Biotechnology (except Nanobiotechno	148,487
Passenger Car Rental	59,701	Direct Title Insurance Carriers	152,395
Other Activities Related to Real Estate	60,958	Drafting Services	156,514
Recreational and Vacation Camps (except Campgrounds)	60,958	Other Warehousing and Storage	160,861
Public Relations Agencies	61,606	Home Health Equipment Rental	160,861
Professional and Management Development Training	61,606	Other Management Consulting Services	160,861
Financial Transactions Processing, Reserve, and Clearinghouse Activit	63,637	Translation and Interpretation Services	160,861
Facilities Support Services	63,637	Construction, Mining, and Forestry Machinery and Equipment Rental	165,457
Cafeterias, Grill Buffets, and Buffets	65,067	Trust, Fiduciary, and Custody Activities	170,324
Automotive Glass Replacement Shops	65,067	Outdoor Advertising	175,485
Taxi Service	67,337	Research and Development in Nanotechnology	180,969
Mobile Food Services	68,940	Tour Operators	180,969
Motion Picture Theaters (except Drive-Ins)	69,771	Convention and Visitors Bureaus	180,969
Security Guards and Patrol Services	69,771	General Rental Centers	186,806
Automobile Driving Schools	69,771	All Other Legal Services	199,690
Promoters of Performing Arts, Sports, and Similar Events with Faciliti	70,622	Industrial Design Services	199,690
Marinas	71,494	Diet and Weight Reducing Centers	199,690
Computer and Office Machine Repair and Maintenance	75,208	Direct Mail Advertising	206,821
Telecommunications Resellers	77,213	Historical Sites	206,821
Employment Placement Agencies	78,257	Book Publishers	222,731
Family Planning Centers	78,257	Zoos and Botanical Gardens	231,640
Internet Publishing and Broadcasting and Web Search Portals	79,329	Radio Networks	241,292
Computer Facilities Management Services	79,329	Television Broadcasting	241,292
Diagnostic Imaging Centers	79,329	Scenic and Sightseeing Transportation, Water	251,783
Security Systems Services (except Locksmiths)	80,431	Cosmetology and Barber Schools	251,783
Local Messengers and Local Delivery	82,729	Charter Bus Industry	275,762
Video Tape and Disc Rental	83,928	Consumer Electronics and Appliances Rental	275,762
Payroll Services	85,162	Consumer Electronics Repair and Maintenance	275,762
Refrigerated Warehousing and Storage	86,433	Emergency and Other Relief Services	289,550
Offices of Podiatrists	86,433	Armored Car Services	321,722
Theater Companies and Dinner Theaters	86,433	Skiing Facilities	321,722
Amusement Arcades	86,433	Teleproduction and Other Postproduction Services	361,938
Professional Employer Organizations	87,742	Nature Parks and Other Similar Institutions	361,938
Recreational Goods Rental	89,092	Communication Equipment Repair and Maintenance	361,938
Appliance Repair and Maintenance	91,921	Directory and Mailing List Publishers	386,067
Convention and Trade Show Organizers	94,934	All Other Transit and Ground Passenger Transportation	445,462
Commercial Photography	101,596	Farm Product Warehousing and Storage	445,462
Other Electronic and Precision Equipment Repair and Maintenance	103,411	Formal Wear and Costume Rental	445,462
Telemarketing Bureaus and Other Contact Centers	105,291	Research and Development in the Social Sciences and Humanities	445,462
Locksmiths	107,241	Repossession Services	445,462
Marketing Research and Public Opinion Polling	115,820	Other Gambling Industries	445,462
Other Support Activities for Air Transportation	118,184	Scenic and Sightseeing Transportation, Land	482,583
Private Mail Centers	118,184	Commodity Contracts Brokerage	482,583
Limousine Service	120,646	Psychiatric and Substance Abuse Hospitals	482,583
Investment Banking and Securities Dealing	120,646	Footwear and Leather Goods Repair	482,583
Sales Financing	123,213	Sound Recording Studios	526,455
Mortgage and Nonmortgage Loan Brokers	123,213	Media Representatives	579,100
Claims Adjusting	123,213	Libraries and Archives	643,444
Landscape Architectural Services	123,213	Office Machinery and Equipment Rental and Leasing	643,444
Reupholstery and Furniture Repair	123,213	Casino Hotels	723,875
Document Preparation Services	125,891	Music Publishers	827,286

ENDNOTES

[1] For a more detailed discussion of alternative methods to analyze local retail and service markets, see the UW-Madison, Division of Extension program entitled "Downtown and Business District Economic Development" by Bill Ryan at https://economicdevelopment.extension.wisc.edu/programs/downtown-market-analysis/

[2] The results for the Trade Area Captured and Potential Sales calculations are available from the author.

[3] http://www.uwex.edu/ces/cced/publicat/letstalk.html

[4] http://www.nal.usda.gov/ric/ricpubs/downtown.html