Original Article

Retail market estimation for strategic economic development

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ABSTRACT In the pursuit of economic development, cities can gain significant advantages by assessing their retail market in relation to the local demand. Having the right composition of retail firms maximises economic strength and growth by minimising retail leakage. Four methods of estimating the size and scope of a city's retail market in relation to resident consumer demand are discussed and modelled in this paper using the city of Azusa, California as a case study. The first three estimation methods use government data and the fourth method uses surveys of institutionalised populations not reflected in government data because of their non-resident status. The resulting retail estimations are an effective tool for city planners and developers to recruit appropriate retailers to a city.

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INTRODUCTION

City leaders employ numerous policies in an effort to develop their local economy. These policies have an array of targeted benefits, including attracting and retaining employers; increasing job numbers; raising incomes for residents; and, of course, expanding tax revenues. Economic development policies also have a number of costs, including direct financial costs, forgone tax revenues and the opportunity costs associated with directing resources to non-productive uses. Empirical research indicates that the costs of economic development policy outweigh the benefits in many cases (cf. Feiock, 1991; Dewar, 1998; and Strother, 2007).

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Commercial and industrial firms are considered 'basic' or foundational parts of a local economy, and are therefore the original beneficiaries of economic development policy (cf. Feiock, 1991; Dewar, 1998; and Strother, 2007). Retail firms receive less attention from local officials because the jobs created by retail firms pay lower wages, and retail firms make location decisions primarily based on the existence of a profitable market. Despite the standard microeconomic assumption of 'perfect information' in markets described by Luce and Raiffa (1957), retailers are often unaware of market demand. This paper describes four methods of retail market estimation. Developers can use the results of the four analyses to convince retailers that a market exists for their product. Providing evidence of a market is a much more compelling economic development technique than more traditional methods such as fiscal incentives.

Assessing a city's retail market for proper fit to the local demand is an important step in pursuing economic growth. When the retail supply does not match the retail demands of local consumers, residents take their shopping dollars to other cities the retail offerings of which are more closely aligned to their preferences and needs, as explained by Tiebout's public choice model (1956). When such a spatial mismatch occurs, the first city loses economic benefits including sales tax revenue, the multiplier effect of local retail purchases and jobs.

Quality of life also plays an important role in economic growth. As many cities offer corporate welfare, creating a level playing field for attracting new firms, cities may gain more advantage through attracting individuals with a higher quality of life rather than solely focusing on attracting firms with incentives. Following the logic of Florida's (2002) argument that members of the creative class drive economic growth, certain cities are attempting to attract educated, creative individuals by ensuring that their city has quality retailers and entertainment venues. Focusing solely on developing more urban amenities does not guarantee economic growth, but as Doctoroff (2006) points out, a higher quality of life can certainly be the tiebreaker between cities competing for high-tech workers and firms.

This paper describes four methods of estimating the size and scope of a city's retail market in relation to resident consumer demand, using the city of Azusa, California case study. Restaurants are included in the study, as they go hand in hand with other types of retail establishments. The first three estimation methods rely on government data to determine the market size and retail supply to meet that demand; the last method involves a survey of the city's institutionalised populations, which use the city's retail venues but are not included in government data because of their non-resident institutional status. The results of these analyses have important practical value for stimulating economic growth: city leaders and real estate developers can more effectively recruit appropriate retailers that will lessen leakage of retail dollars by meeting consumer preferences. These analyses also serve as market research for retail firms that are interested in finding profitable locations.

THE AZUSA CASE

The four retail market estimation techniques described in this paper are illustrated using the city of Azusa, California, one of 122 cities that

Table 1: Demographic and economic comparison, US Census Bureau (2008)

	Azusa	LA MSA	US
Total population	44 712	9 948 081	299 389 484
Median age	30.1	31.6	37.9
Percent of residents under 18	30.8%	26.9%	2.46%
Percent of residents 18 up to 65	63%	62.9%	62%
Percent of residents 65 and over	7%	10.2%	12.4%
Percent of residents, White race	33%	74.2%	80.1%
Percent of residents, Black race	4%	9.6%	12.8%
Percent of residents, Asian race	3%	13.1%	4.4%
Percent of residents, Hispanic or Latino race	60%	47.3%	14.8%
Total households	12 549	3 133 774	105 480 101
Average household size	3.41	2.98	2.59%
Median household income	\$39 191	\$43 518	\$44 334
Unemployment	5.3%	5.0%	4.5%
Percent firms in manufacturing	17.1%	11.6%	4.7%
Retail sales/capita	\$7325	\$9433	\$10 615

together comprise the Los Angeles-Long Beach Metropolitan Statistical Area (LA MSA). An MSA is a geographic designation of an economic market, and is a standard area used by the US Census Bureau as a baseline for statistical analysis. Table 1 compares Azusa to LA and the rest of the US using data from the US Census Bureau (2008).

Demographically, Azusa is characterised by a young population, large households and a high percentage of Hispanics.

Economically, Azusa appears to be comparatively disadvantaged, with lower incomes, higher unemployment and lower retail expenditures. However, the city has a very strong economic base, with 17.1 per cent of its firms in manufacturing. Many of these are light industrial or high-technology firms, with ties to Southern California's aerospace industry. The economy is also strengthened by the presence of Azusa Pacific University (APU), with its population of about 10 000 students, faculty and staff. Next door to APU is Citrus College (CC), a 2-year junior college with over 11 000 students, faculty and staff. Adding these two school communities to the 44 712 permanent Azusa residents, the number of consumers spending their time in and around Azusa increases by nearly 50 per cent.

Despite Azusa's current disadvantaged economic position, and four decades with no new commercial construction, the city is currently undergoing a major transformation. Four-tiered shopping centre areas are being redeveloped, including two that match Katz's 'New Urbanism', mixed-use projects that combine residential and retail uses in the same property (1993). The Rosedale project is the largest residential construction project in LA, and will add 1250 homes to the city, a 10 per cent increase in the city's housing stock. Two new light rail stations will connect Azusa to LA's fledgling rail network, and APU is expanding its property by about a third. These projects present opportunities to bring in appropriate retailers for the area that will adequately fit the consumer preferences of the local market. The techniques described in this paper are useful for estimating the size and scope of the retail market so that developers may recruit the right mix of retail firms into the local area.

METHOD 1: ESTIMATING RETAIL DEMAND USING REPORTED SALES FIGURES

The first method of retail market estimation uses a city's retail sales figures reported in the US Census Bureau's most recent Economic Census. Every 5 years, the Bureau sends surveys to American businesses in order to compile the Economic Census report on annual sales data. For those businesses that do not respond to the survey, a combination of other government sources is used to complete the information. Consulting the 2002 Economic Census reveals that Azusa establishments reached US \$337 056 000 in annual retail sales (see Table 2). The Economic Census additionally gives detail on sales amounts for several specific categories. Together these figures present an estimation of retail demand based on the reported historic sales figures of the city's retail businesses.

There are several key benefits to this simple method of retail estimation. First, the total sales figure shows the total retail dollars spent in the city. It is important to start a retail analysis with the knowledge of what has actually been spent in the city in order to compare it with estimations on what could possibly be spent in the city's retail establishments pursuant to economic development initiatives. This information will be especially important when coupled with the latter methods discussed in this paper to ascertain a full analysis of retail leakage and surplus. Second, if a city is considering adding a local sales tax, this figure can be beneficial in ascertaining the potential revenue (though adding a sales tax may induce some loss in sales revenue as consumers chose to leave the city for purchases because of the sales tax). This information can be also used to attract new businesses to the city, as the size of the market is an important part of the decision process for businesses choosing new sites. The primary benefit, however, involves using this real expenditure data to compare against the second method of retail estimation of expected expenditures for the population based on census data to estimate retail leakage or surplus, which can then be used to pursue the appropriate new retailers for strategic economic development.

Table 2: Azusa retail trade, 2002 economic census, US Census Bureau (2004)

NAICS Code	Description	# of establishments	Sales (\$1000)
44–45	Retail trade	87	337 056
441	Motor vehicle dealers	3	21 263
4413	Automotive parts & tire stores	16	33 269
442	Furniture & home furnishings stores	3	1282
443	Electronics & appliance stores	6	D
444	Building material & garden equipment	3	D
445	Food & beverage stores	24	50 000
446	Health & personal care stores	4	13 707
447	Gasoline stations	10	24 628
448	Clothing & clothing accessories stores	6	9120
451	Sporting goods, hobby, book, & music stores	3	D
452	General merchandise stores	4	D
453	Miscellaneous store retailers	4	D
454	Nonstore retailers	1	D

D=Withheld to avoid disclosing data of individual companies; data are included in higher-level total.

METHOD 2: ESTIMATING RETAIL DEMAND USING CONSUMER EXPENDITURES

Now that we know the actual retail spending in the city, our next step is to determine the untapped retail potential of city residents. This information can be extrapolated from the US Department of Labor's consumer expenditure census data.

The US Department of Labor annually surveys 14 000 people to collect census information on the buying habits of consumers, presenting the results in the report 'Consumer Expenditures'. This report gives average expenditures by categories based on income brackets, and can be used to estimate local retail demand. The use of this method provides a figure similar to the first method that represents the expected total retail expenditures of the city, additionally providing details on precise categories of retail spending that can be beneficial in recruiting specific types of retailers.

The process of this retail estimation method starts with the median household income of the city. Knowing that the median household income in Azusa is \$39 191, we used the report's average household expenditures of the \$30 000–39 999 income bracket to find the estimated expected household expenditures in Azusa. The average annual expenditures were then multiplied by the total number of households in Azusa, which is 12 549. Table 3 shows these figures and the aggregate retail expenditure potential.

Comparing the overall projected annual retail expenditures based on survey data of the income bracket (\$262 million) with the overall retail sales estimation based on store receipts (\$337 million) suggests an estimated overall retail surplus of \$75 million for the city of Azusa. The retail surplus represents non-resident spending in Azusa, including residents of other cities coming to Azusa to spend their money as well as

Table 3: Potential retail expenditures for residents of Azusa

<i>Expenditure category</i>	<i>Household income %</i>	<i>Household expenditure</i>	<i>Citywide aggregate expenditure potential</i>
Food at home	8.8	\$3449	\$42 914 823
Food away from home	5.6	\$2195	\$27 384 951
Alcoholic beverages	0.9	\$353	\$4 350 617
Housekeeping supplies	1.4	\$549	\$6 955 355
Furnishings	3.3	\$1293	\$16 078 979
Apparel and services	4.4	\$1724	\$21 161 739
Vehicle purchases	9.5	\$7917	\$98 177 514
Gas and oil	3.8	\$1488	\$18 430 283
Other vehicle expenses	6.2	\$2438	\$30 200 885
Entertainment	5.1	\$1999	\$24 526 779
Personal care	1.3	\$509	\$6 364 009
Reading	0.3	\$118	\$1 478 365
Tobacco	0.9	\$353	\$4 547 732
Miscellaneous	1.6	\$627	\$7 673 418
Non-retail expenditures	46.2	\$18 106	\$225 585 669
Total expenditure potential	100	\$39 191	\$487 199 950
Total retail expenditure potential	53.8	\$21 085	\$261 614 281

Table 4: Economic census and consumer expenditure data

<i>Economic consensus business category</i>	<i>Store reported sales (\$1000)</i>	<i>Consumer expenditure potential based on income (\$1000)</i>	<i>Retail surplus (\$1000)</i>	<i>Retail leakage (\$1000)</i>
<i>Retail trade</i>	\$337056	\$261614	\$75442	—
Motor vehicle dealers	\$21263	\$45956	—	(\$24693)
Automotive parts & tire stores	\$33269	\$30200	\$3069	—
Furniture & home furnishings stores	\$1282	\$16079	—	(\$14797)
Electronics & appliance stores	D	N/A	—	—
Building material & garden equipment	D	N/A	—	—
Food & beverage stores	\$50000	\$47265*	\$2735	—
Health & personal care stores	\$13707	\$6364	\$7343	—
Gasoline stations	\$24628	\$18430	\$6198	—
Clothing & clothing accessories stores	\$9120	\$21162	—	(\$12042)
Sporting goods, hobby, book, & music	D	N/A	—	—
General merch. and misc. retailers	D	N/A	—	—

D=Withheld to avoid disclosing data of individual companies; data are included in higher-level total.

*Amounts from the 'Food at home' and 'Alcoholic beverages' categories of the Consumer Expenditures report were combined for the sake of comparison.

temporary Azusa residents (such as college students), who are not represented in the census data because of their temporary status. The \$75 million surplus would seem to be a very positive statement about the retail health of the city. However, comparing individual sectors of the Economic Census reported sales with the Consumer Expenditures potential sales reveals significant leakage among several types of retail establishments (see Table 4), including \$24.7 million in vehicle purchases, \$14.8 million in furnishings and \$12 million in clothing. (Note: In order to facilitate comparing the figures between the two surveys, some categories were necessarily combined.)

Both the retail leakage and surplus discovered in this methodology can be used for strategic economic development initiatives. Cities should try to attract new retailers to address the categories of leakage in order to retain retail dollars that are currently leaking to other cities. On the other hand, cities that have areas of surplus may also consider drawing even more retailers within the surplus category in order to increasingly draw consumers from other cities to the retail clusters.

This method of retail estimation has several limitations. In some cases there is a mismatch of categories based on the fact that one report assesses sales by stores and the other assesses purchases by consumers. For example, a consumer purchasing a camera could do so at a drugstore, a big-box store or general merchandise store, or an electronics store. Additionally, as purchasing habits are shifting toward big-box retailers, the higher-digit North American Industry Classification System (NAICS) codes are becoming less and less useful.

METHOD 3: ESTIMATING RETAIL DEMAND WITH A MARKET SERVING INDEX

A Market Serving Index (MSI) is a way of comparing the composition of firms in a defined geographic area with an overall market area (Giles and Blakely, 2001). The MSI technique usually compares a small city like Azusa to the overall market area, such as the Los Angeles metropolitan area. The area of interest can also be a smaller area such as a zip code, census block or neighbourhood. The goal of this type of analysis is to compare the proportions of certain types of retailers in the study area to those same proportions in the overall market. The assumption is made that retail activity should be proportionally the same in the study area with the overall market area. If the study area has a lower proportion of a certain type of retailer, retail leakage may exist, as residents do their shopping in other parts of the overall market area, such as in neighbouring cities. The objective of city leaders is to recapture this retail leakage.

The first step in creating an MSI is to determine the number of retail firms in each retail category in the study area (Azusa) and in the overall market area (Los Angeles). The annual County Business Patterns (CBP) report compiled by the US Census may be used in this analysis. CBP lists the number of firms in each NAICS category by county and zip code. In the case of Azusa, the entire city consists of one zip code, but in other cases, such as neighbourhoods or cities with multiple zip codes, the data may not match as well. The 2nd and 3rd columns in Table 5 show these firm counts. The 4th column is the actual MSI number, which is calculated with the following formula:

$$MSI = 100 * (c/C)/(r/R) \quad (1)$$

where c = number of retail firms in a category in the city, C = total number of firms in the city, r = number of retail firms in a category in the region and R = total number of firms in the region.

The MSI allows us to look at a certain firm type (that is, shoe stores) and see how well represented it is in Azusa based on how well represented it is in the surrounding area. By comparing the proportion of each firm type in the city with the proportion of the same firm type in the surrounding area, the Index is calculated. Scores of zero indicate that the firm does not exist in the city, or at least did not exist when the Department of Labour counted firms. Scores below 100 represent a potentially underserved retail category; scores above 100 represent a potentially over-served retail category.

As Table 5 displays with an MSI of 0, there are seven types of firms that are completely absent from Azusa: nurseries, men's clothing stores, hobby/toy/game stores, book stores, office supply/stationery/gift stores, department stores and pet/pet supply stores. Whenever a resident has a need for an item found at one of these stores, he or she will have to go elsewhere.

The most underserved retail categories are women's clothing stores (with an Index number of 24.6), jewellery stores (33.0), other building

Table 5: Market serving index for businesses in Azusa, US Census Bureau (2008)

NAIC	Category ^a	Number of firms		
		Azusa	LA MSA	MSI
7222410	Drinking places – alcoholic beverages	3	959	72.7
722110	Full-service restaurants	21	6151	79.3
722213	Snacks & non-alcoholic beverage bars	6	1502	92.8
722211	Limited-service restaurants	35	6223	130.7
	Total restaurants	68	15801	—
441110	New car dealers	0	514	0.0
44422	Nursery & garden centers	0	192	0.0
44811	Men's clothing stores	0	372	0.0
45112	Hobby, toy & game stores	0	307	0.0
4512	Book, periodical & music stores	0	688	0.0
4532	Office supplies, stationery & gift stores	0	1223	0.0
45391	Pet and pet supplies stores	0	253	0.0
441110	Women's clothing stores	1	1301	24.6
448310	Jewelry stores	1	969	33.0
448210	Shoe stores	2	950	67.3
442110	Furniture stores	2	904	70.7
443120	Computer & software stores	1	426	75.1
446110	Pharmacies & drug stores	3	1236	77.6
448140	Family clothing stores	2	734	87.1
451220	Prerecorded tape, CDs, & record stores	1	306	104.5
445120	Convenience stores	2	598	106.9
445120	Supermarkets & other grocery	8	2011	127.2
451110	Sporting goods stores	2	493	129.7
45311	Florists	2	464	137.8
443112	Radio, TV, & other electronics store	4	873	146.5
441120	Used car dealers	2	401	159.5
443111	Household appliance stores	1	188	170.1
447190	Other gasoline stations	6	972	197.4
445310	Beer, wine, & liquor stores	7	1123	199.3
447110	Gas stations with convenience stores	6	846	226.7
444130	Hardware stores	2	242	264.2
453991	Tobacco stores	1	114	280.5
441310	Automotive parts & accessories stores	10	1099	290.9
441320	Tyre dealers	5	489	326.9
441221	Motorcycle dealers	1	87	367.5
445210	Meat markets	3	260	368.9
452910	Warehouse clubs & supercenters	1	40	799.3
444210	Outdoor power equipment stores	1	36	888.1
	Total Retail	91	29094	—

^aSome smaller categories omitted.

material dealers (39.5) and other home furnishings stores (57.6). These Index scores imply that retail demand in these categories is unmet. Shoppers are going elsewhere. These figures also reveal which type of new businesses might expect success if they locate in the neighbourhood, which is very relevant for attracting new businesses to Azusa.

Next, consider overrepresented categories, revealed by high MSIs. These businesses may be attracting retail dollars from outside the local market, or they may be catering to a unique aspect of the city's demographics. For instance, as Azusa is largely Hispanic, the city sustains a high number of *pupuserias*, which increases the number of meat markets. The most overrepresented categories include outdoor power equipment stores (888.1), warehouse clubs/supercenters (799.3),

meat markets (368.9), motorcycle dealers (367.5) and tyre dealers (326.9). There is a sufficient number of these firms within the city.

After the MSI is constructed, the next step is to estimate the potential retail expenditures of city residents, which is shown in the 3rd column of Table 6. This is done by multiplying the household consumer expenditure data by the number of households in the city, as described above in the second technique. However, as Brammer and Tomasik (1995) point out, these expenditure estimates are not an exact match to the CBP data, which are arranged by NAICS codes. We know how much Azusa residents will spend in large expenditure categories; it is uncertain how much residents will spend on the many subcategories. For example, the data allow us to predict that \$21 million will be spent on apparel, but it is unknown how that total will be distributed among subcategories such as men's clothing, women's clothing, children's clothing and so on. If the analyst is familiar with the locality, however, these expenditure estimates should be reliable.

The final step of the MSI analysis is to predict the amount of retail expenditure within the study area. As the MSI number reflects the proportion of firms, we can multiply this number by the estimated overall expenditures by category (the 5th column of Table 6) to determine the retained and lost proportions of retail expenditure. The 6th and 7th columns of Table 6 show the dollar amounts of estimated leakage and surplus.

Whenever residents leave Azusa to shop, the city experiences retail leakage. To fully understand the current state of retail leakage taking place in Azusa, it is vital that we look at the possible expenditures in comparison to the MSIs for each type of retail firm. By matching the retail purchasing power of the city (found in Table 3) with the MSI (found in Table 5) we can calculate the leakage of Azusa retail dollars spent outside the city, and the surplus of outside dollars spent within the city. The numbers represented in Table 3 are only estimates, and are not concrete data. The limitation here is that the potential expenditure categories in Table 3 are broader than the retail categories in Table 5.

Tables 5 and 6 also give estimates on retail surplus: retail dollars attracted from outside Azusa. We do not see surplus and leakage as offsetting each other, but emphasise that any retail money leaving Azusa may be worth attempting to recapture by recruiting additional retail firms to the city. However, based on the data, it is clear that Azusa is potentially losing millions of dollars each year to other cities. The city is experiencing the most leakage in the areas of new car dealers, men's clothing stores, office supplies/stationery and gift stores, and family clothing stores. Using the MSI technique, total leakage is approximated to be near \$63 million dollars each year. A major limitation of the MSI technique is that the unit of analysis is the number of firms, rather than the actual dollar values of retail expenditures. Given this limitation, a Mom-and-Pop toy shop counts the same as a big-box toy store.

METHOD 4: ESTIMATING RETAIL DEMAND WITH SURVEYS OF INSTITUTIONALISED POPULATIONS

The previous retail estimations considered the spending habits of permanent Azusa residents, but there are currently thousands of students

Table 6: Leakage estimates for Azusa restaurants (\$1000)

<i>Category</i>	<i>Potential expenditures in Azusa</i>	<i>MSI</i>	<i>Expected expenditures in Azusa</i>	<i>Retail surplus</i>	<i>Retail leakage</i>
Drinking places-alcoholic bevs.	\$3 000	72.7	\$2180	—	(\$819)
Full-service restaurants	\$10 000	79.3	\$7933	—	(\$2066)
Snack & non-alc. bev. bars	\$4000	92.8	\$3712	—	(\$287)
Limited-service restaurants	\$10 000	130.7	\$13 069	\$3 069	—
Total restaurants	\$27 000		\$26 895	\$3 069	(\$3 173)
New car dealers	\$26 000	0.0	\$0	—	(\$26 000)
Nursery & garden centers	\$3000	0.0	\$0	—	(\$3000)
Men's clothing stores	\$2000	0.0	\$0	—	(\$2000)
Hobby, toy & game stores	\$3000	0.0	\$0	—	(\$3000)
Book, periodical & music stores	\$5000	0.0	\$0	—	(\$5000)
Office, stationery & gift stores	\$2000	0.0	\$0	—	(\$2000)
Pet and pet supplies stores	\$500	0.0	\$0	—	(\$500)
Women's clothing stores	\$5000	24.6	\$1228	—	(\$3771)
Jewelry stores	\$2000	33.0	\$659	—	(\$1340)
Shoe stores	\$2000	67.3	\$1346	—	(\$653)
Furniture stores	\$5000	70.7	\$3536	—	(\$1463)
Computer & software stores	\$3000	75.1	\$2251	—	(\$748)
Pharmacies & drug stores	\$4000	77.6	\$3104	—	(\$895)
Family clothing stores	\$2000	87.1	\$1742	—	(\$257)
Tape, CDs, & records	\$5000	104.5	\$5224	\$224	—
Convenience stores	\$7000	106.9	\$7484	\$484	—
Supermarkets & other grocery	\$35 100	127.2	\$44 642	\$9542	—
Sporting goods stores	\$5000	129.7	\$6485	\$1485	—
Florists	\$500	137.8	\$689	\$189	—
Radio, TV, & electronics store	\$5000	146.5	\$7324	\$2324	—
Used car dealers	\$16 000	159.5	\$25 513	\$9 513	—
Household appliance stores	\$140	170.1	\$238	\$98	—
Other gasoline stations	\$9000	197.4	\$17 761	\$8761	—
Beer, wine, & liquor stores	\$4000	199.3	\$7971	\$3971	—
Gas stations with conv. stores	\$9000	226.7	\$20 407	\$11 407	—
Hardware stores	\$200	264.2	\$528	\$328	—
Tobacco stores	\$40	280.5	\$112	\$72	—
Automotive parts & accessories	\$5 000	290.9	\$14 545	\$9545	—
Tyre dealers	\$3000	326.9	\$9807	\$6807	—
Motorcycle dealers	\$4000	367.5	\$14 697	\$10 699	—
Meat markets	\$2000	368.9	\$7378	\$5378	—
Warehouse clubs & supercenters	\$15 000	799.3	\$119 892	\$104 892	—
Outdoor power equipment	\$1000	888.1	\$8880	\$7880	—
Total retail	\$232 240		\$347 254	\$208 474	(\$60 725)

and staff at two local colleges, APU and CC, who spend a considerable amount of time in or near Azusa but are not included in the estimations above because they are not permanent residents. Other cities have similar uncounted consumer groups including students, military personnel and tourists. These groups may have significant impacts on retail sales in the city. Though not included in the Census data, we can still estimate the retail demand of these groups using survey research.

In Azusa, city leaders and real estate developers have long claimed that the college communities have a high retail demand. Without hard evidence of the true retail demand, however, potential new retailers have been hesitant to open a new site based only on speculation. In the case of

Azusa, we conducted surveys of both colleges to provide hard evidence of the retail demand, which was then used by city leaders and developers to recruit new firms to the city.

Studies show that the purchasing power of colleges and universities has been vastly underestimated. An economic impact study of Mesa State College indicated that in the 2005/2006 fiscal year, Mesa State contributed approximately \$106 million directly into the local economy (Futhey and Bridge, 2007). In 2002, Shopping Center World estimated that the 15.6 million college students in America spend \$200 billion annually (Sokol, 2002); in 2008 a study conducted for Alloy Media and Marketing estimated the spending power of college students to be \$237 billion (Alloy, 2008). A study of the economic impact of spending by Arizona State University students, faculty and staff approached an estimated \$633 million (Hogan, 1992). Similarly, the University of Arkansas estimated that its students and employees accounted for nearly \$200 million in the local economy (Shurlds, 1993). The 13.6 million college students aged 18–30 across the nation can be described as an ‘empowered group of consumers’ (Alloy, 2008, p. 399), and their spending habits are certainly worth researching.

Although prior studies have addressed factors such as the amount that is spent in local communities by the population of institutions, or their spending trends, this study goes one step further in specifically determining estimated future expenditures and purchasing power based on retail preferences. This, in turn, allows developers to attract the appropriate retailers to the area.

The process of developing the survey began by obtaining a list of the potential retailers from the Azusa Chamber of Commerce with input from economic development officials and real estate developers. The final list included these firms in the following categories: quick-serve restaurants, full-service restaurants, coffee and juice shops, grocery stores, sporting goods and shoes, clothing stores and various retail stores. The survey was built and implemented with surveymonkey.com, and a link to the survey was sent out in an e-mail to students, faculty and staff. The e-mail indicated the purpose of the survey and highlighted incentives for taking the survey, which included numerous prizes. Upper administration at both the mentioned schools gave strong vocal support for the research. There were 1352 survey responses at APU and 1112 at CC.

Survey respondents were asked to first indicate how much they had spent at listed retailers in the past 30 days, and then were asked to indicate how much they would be spending in a typical 30-day period if the listed retailers were near their campus.

Table 7 shows the survey results for one retail category: grocery stores. To determine the retail demand for one of the schools, we multiplied the number of responses in each category by the category midpoint, as shown in Equation 2. Summing these values gave us a specific dollar amount that respondents reported spending at each retailer. We then extrapolated this total to the population, as shown in Equation 2. The totals for both schools were added together, as shown in the final column of Table 7. These results are also illustrated graphically in Figure 1.

Table 7: Retail expenditures at grocery stores, past 30 days

		Number of survey responses					Estimated expenses		Total
		\$0–5	\$6–10	\$11–25	\$26–50	\$51+	Sample	Population	(APU + Citrus)
Trader Joes	APU	299	92	276	282	440	\$49 869	\$374 014	\$579 261
	Citrus	614	99	105	79	163	\$18 830	\$205 247	
Vons	APU	584	111	183	159	293	\$33 075	\$248 063	\$475 219
	Citrus	554	116	118	89	181	\$20 840	\$227 156	
Stater brother's	APU	509	187	221	174	236	\$30 550	\$229 121	\$452 915
	Citrus	551	115	137	88	173	\$20 532	\$223 793	
Albertsons	APU	656	136	185	131	230	\$27 630	\$207 225	\$434 948
	Citrus	522	139	136	98	171	\$20 892	\$227 723	
Ralph's	APU	733	121	163	108	181	\$22 681	\$170 104	\$315 510
	Citrus	672	102	90	67	98	\$13 340	\$145 406	
Whole foods	APU	774	79	172	124	177	\$22 876	\$171 570	\$242 415
	Citrus	877	46	42	20	44	\$6 500	\$70 845	

Azusa Pacific University (N=10 203, n=1352), and Citrus College (N=12 079, n=1112).

Retail demand for one school was calculated as follows:

$$E = [(1.5a + 7.5b + 18c + 38d + 75e) * (N/n)] \quad (2)$$

where a = number of survey respondents selecting \$0–5, b = number of survey respondents selecting \$6–10, c = number of survey respondents selecting \$11–25, d = number of survey respondents selecting \$26–50, e = number of survey respondents selecting \$51+, N = number in population and n = number in sample.

The data in Table 7 reveals⁵ the current grocery retail expenditures of the 22 282 people at the two schools. We followed the same type of analysis with the results of the question, ‘How much would you spend at ... if nearby?’ and a similar table was created. These dollar amounts are shown in Figure 1. For example, \$242 415 is currently spent each month at Whole Foods, but \$328 061 would be spent if Whole Foods were near the colleges. The difference of \$85 646 represents additional revenue this firm could earn by locating in Azusa. This is probably not enough for Whole Foods, especially because the new store may pull customers from nearby Whole Foods stores. But another retailer with no locations in the area could view the entire \$328 061 as potential revenue if they located in the city. This analysis was completed for all retailers on the list.

CONCLUSION

City leaders have traditionally pursued economic development by focusing on attracting new firms to the locality through the use of fiscal incentives. These efforts have had mixed results. In an era of resource scarcity for city governments, strategic low-cost economic development techniques become more and more valuable. A strong retail base

Figure 1: Past 30 days retail expenditures.

strengthens a local economy and can improve the quality of life for residents, so city leaders should attempt to influence retailers to locate in their city. As retail firms make location decisions based on market demand, fiscal incentives are thought to be ineffective in attracting new retailers (although the retailers certainly will not turn down such incentives). To recruit new retailers therefore, city leaders must be able to report significant demand. The four techniques shown in this paper can be part of an effective retail attraction strategy.

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