
University of California Transportation Center
UCTC-FR-2014-02

**The impacts of big box retail on downtown: A case study of Target
in Davis, California**

Kristin Lovejoy and
Susan Handy
University of California, Davis
January 2014

The impacts of big box retail on downtown: A case study of Target in Davis, California

Kristin Lovejoy

Susan Handy

Institute of Transportation Studies

University of California, Davis

Davis, CA 95616

December 31, 2013

ACKNOWLEDGEMENTS

This project was supported by grants from the Sustainable Transportation Center at UC Davis and the University of California Transportation Center. Both Centers are a part of the University Transportation Centers Program of the U.S. Department of Transportation and supported by the California Department of Transportation.

DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This University of California Transportation Center document is disseminated under the sponsorship of the U.S. Department of Transportation's University Transportation Centers Program and California Department of Transportation, in the interest of information exchange. The U.S. Government and State of California assume no liability for the contents or use thereof.

The impacts of big box retail on downtown: A case study of Target in Davis, California

Abstract

Problem, Research Strategy, and Findings

While big box stores are appealing for their low prices and convenience, they are also widely criticized for their potentially deleterious impacts on communities. Controversy over big box retail often arises at the local level, where a proposed store is viewed as a threat to local businesses. But because of a broader transformation of the retail landscape, the effect of an individual big box store on the economic well-being of a given community is unclear. To help shed light on this issue, we present a case study of the experience of one city (Davis, California) in amending its zoning code to allow its first big box store, a Target, on the periphery of town, about 2 miles from its vibrant downtown area. We use a before-and-after survey to examine the locations and types of stores where residents shopped for selected non-grocery items before the store opened and after, evaluating which businesses were most affected. The results show limited impact of the new big box store on the downtown core in this case, but substantial impact on other chain stores within and especially beyond city limits.

Takeaway for Practice

Although other downtowns in other cities may be less resilient than downtown Davis was to the opening of a big box store, the Davis case suggests that the threat of a big box store is sometimes overstated or misunderstood. A focus on restricting big box stores altogether could distract planners from formulating other policies that might leverage them for greater community benefit,

such as taking a more exacting stance on their precise locations, physical formats, and integration with other land uses. Planners should consider the potential role of big box stores in supporting community goals and then formulate policies that will help foment that outcome.

The impacts of big box retail on downtown: A case study of Target in Davis, California

Introduction

Big box stores first emerged in the 1980s, amid some longer-term trends that had already diminished the role of independent retailers and downtown shopping districts. The displacement of single-unit (mom-and-pop, local, independent) retailers with chain stores (multiple locations of a unified brand owned by a single individual or corporation) had been underway for over a century, starting with department stores in the 1880s and accelerating after the World Wars (Scroop, 2008; Jarmin, Klimek, & Miranda, 2009; see Table 1). Over the same time period, land use patterns also changed substantially and much retail activity shifted to suburban strip malls (e.g. Cohen, 1996; Jackson, 1996).

Table 1. Growth of chain stores in the retail sector nationwide, 1948-2007

	Percent of retail sales	
	Single-unit firms	Firms with 100+ locations
1948	70.4%	12.3%
1967	60.2%	18.6%
1997	39.0%	36.9%
2007	31.9%	46.9%

Source: 1948-1997 from Jarmin et al. (2009); 2007 from U.S. Census Bureau (2007).

Big box stores added to these trends by offering a new type of retail, characterized by breadth rather than depth of inventory -- either in a particular category (e.g. hardware, electronics, bed & bath) or general merchandise -- and ultra-low prices, enabled by streamlined inventory management and economies of scale at each level of production (Holmes, 2001; Basker, 2007; Basker, Klimek, & Hoang Van, 2012). Their vast inventory is suited to large-scale formats, typically greater than 50,000 square feet, architecturally resembling a big box. The

advent of big box stores is one indication of how scale and scope have become synergistic in the retail sector, resulting in both bigger chains (that is, more stores per firm) and for all chains to increase their scope (more products per store and bigger stores). Using data from the U.S. Economic Census from 1977-2007, Basker et al. (2012) show how the number of stores and number of product lines are complementary, where adding two stores enables the addition of about 100 items to each store in the chain. Even single-unit stores have become larger, on average, and tend to offer more products than in the past, perhaps in response to competitive pressure from chains (Jarmin et al., 2009). General-merchandise retailers (including big box chains like Wal-Mart and Target) have grown faster than other sectors, and so a relatively few number of general-merchandise firms account for a disproportionate share of total retail sales volume: As of 2007, general-merchandise firms represented 1.2% of all retail firms and 4.1% of all retail establishments, but those establishments (81% of them chains) accounted for 14.7% of all retail sales volume and 17.8% of retail employees (U.S. Census Bureau, 2007).

The features of big box retail that consumers most appreciate are their low prices, product assortment, convenience, and opportunity for one-stop shopping (Basker et al., 2012; Basker, 2007; Barber & Tietje, 2004; Chiou, 2005). However, these stores have also drawn criticism from a notably diverse set of interest groups, including labor unions, environmentalists, consumers, and other community representatives (Scroop, 2008; Halebsky, 2004). More so than other retail chains, big box chains have regvanized opposition to corporate retail that had been somewhat dormant since the 1930s (Scroop, 2008). The most common criticisms relate to labor practices; their threat to independent retailers; traffic, noise, and visual blight for immediate neighbors; and for generally contributing to suburban sprawl, automobile dependency, and a lost sense of community (see Halebsky, 2004 for an overview; Bianchi & Swinney, 2004; Mitchell,

2006; among others, for examples of literature articulating faults of big box retail). Big box stores have been much debated at the local level, where planning boards have the opportunity to allow or deny an individual store based on zoning codes or contingencies attached to building permits, with controversies erupting in up to 200 different communities nationwide between 1995 and 2000 alone (Halebsky, 2004). A central concern in these debates is the protection of local independent businesses, which are said to be better for the local economy and the local community, with more involvement in community events and civic life. In addition, if independent retailers operate small-format stores in downtown districts, they help contribute to the vibrant public sphere planners are eager to cultivate and protect in those areas.

Such concerns were at the heart of the debate in Davis, California in the mid-2000s over amending its zoning code to allow its first big box store. With the goal of adding new insights to the larger debate over the impacts of big box retail, we present an examination of this case, focusing on the impact of the store, a Target located at the periphery of the city, on the vibrant downtown of Davis. Data from a before-and-after survey on the locations and types of stores where residents shopped for selected non-grocery goods before and after the store opened provide a basis for evaluating which businesses were most affected. The results show the limited impact of the new big box store on the downtown core in this case, but substantial impact on other chain stores within and especially beyond city limits.

Background

A challenge in evaluating the effect of big box stores is in identifying which outcomes result from a store's presence versus from concomitant trends and other factors endogenous to where big box firms have chosen to open stores. Studies employing econometric methods to control for

these confounding factors show that big box stores can have substantial effects on area businesses, including an apparent overall negative impact on retail employment and earnings (Newumark, Zhang, & Ciccarella, 2008).

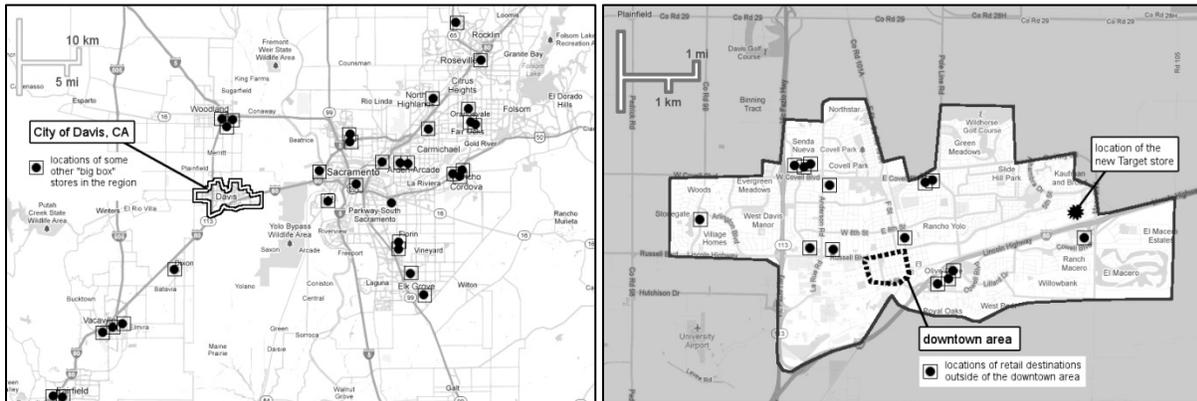
However, considering the impact on different types of stores, store locations, and time frames reveals more complexity. Showing the greatest impact are studies of the effect of big box stores on directly competing types of businesses, including the impact of Wal-Mart superstores (which offer groceries) on incumbent grocery stores (Singh, Hansen, & Blattberg, 2006; Artz & Stone, 2006) and of Wal-Mart on other discount retailers (Jia, 2008). These results are generally consistent with other studies showing that competition is greatest among stores of the same type and format (González-Benito, Muñoz-Gallego, & Kopalle, 2005; Fox, Montgomery, & Lodish, 2004; Paruchuri, Baum, & Potere, 2009). Haltiwanger, Jarmin, and Krizan (2010) found that specialty big box stores substantially impacted other stores only if they were very nearby and in the same detailed industry; meanwhile, general merchandise big box stores impacted other-sector chain stores negatively, chain restaurants positively, and other-sector single-unit stores not at all. Fox et al. (2004) also found a complementary effect among chain mass merchandisers of different types (more spending at one corresponds to more spending at another), and little direct substitution between grocery stores on the one hand and mass merchandisers and drug stores on the other. Paruchuri, Baum, and Potere (2009) found a worse effect on independent retailers in zip codes adjacent to a new Wal-Mart (with increased exit sustained over time) but a mixed effect on those in the same zip code, with suppressed entry at first followed by an increase in both entry and exits over time, suggesting an overall more dynamic competitive environment in the immediate vicinity after Wal-Mart opened.

In sum, prior research suggests that the effect of big box stores on local businesses depends on the type of business -- how close it is geographically and in scope with the new store. The greatest potential impact on other major chain stores, which local governments may be less eager to protect than local businesses. Furthermore, some types of retail stand to gain, including those with complementary (rather than competing) offerings and entrepreneurs who might benefit from a more dynamic competitive environment. The impact on the vitality of a downtown district, in turn, thus depends on the existing role and mix of retail in that area.

The historic downtown of Davis, a college town with a population of about 65,600 people (U.S. Census Bureau, 2010) located about 15 miles from Sacramento, California, comprises about 32 blocks (as assessed by the Downtown Business Association (Figure 1). It is traditional and charming in its physical form, with small blocks, some older architecture, mature street trees, small storefronts, and sidewalk cafes. It is vibrant with restaurants, retail, services, and community events, such as a twice-weekly farmers' market, a concert series, art walks, and other events. At the time that Target opened, the downtown core had several major chain stores, including a Gap (clothing store), a Borders (books and music store), and an Ace Hardware franchise. A large co-operative grocery store is situated within the DBBA's boundaries, but just beyond those used for this study. Of the 102 locations respondents reported visiting in our survey (described below), 79% are single-unit stores, 8% were stores that are part of a regional chain, and the remaining 13% were large, national chains (e.g. the Gap).

More major retail outlets and some national chain stores are found in other parts of the city. Many are situated in conventional strip shopping centers -- that is, clumps of larger-format storefronts serviced by large parking lots. Of the 80 different locations survey respondents visited when shopping (for the types of goods in the survey) in areas beyond downtown, almost

Figure 1. Map of regional (left) and in-town (right) retail locations beyond the downtown core



half (46%) of these were single-unit stores, just as many (46%) were major national chains, with the remaining 6% a part of a business with multiple locations within the region only. However, prior to 2009, the city had no very large stores or big box retailers by design of a city plan that deemed “warehouse style retailers...[as] inappropriate given the nature and scale of the Davis market” and restricted retail businesses outside of downtown to be sized to serve neighborhoods rather than the region, limiting them to 30,000 square feet (City of Davis, 2006). As a result, Davis residents also took advantage of a rich array of mainstream retail options beyond the city limits, including a Wal-Mart, Target, Ikea, and others, although because the city is surrounded by agricultural easements these stores are at least 10 miles away.

In June 2006, the City Council approved the 137,000-square-foot Target store, but also voted to hold a public referendum on the approval of the development agreement and the necessary amendments to the general plan and zoning code. The issue was hotly debated leading up to the 2006 election, closely resembling the prototypical controversy described by Halebsky (2004). Although proponents argued that many residents already shopped out of town or if in town, at major chain stores outside of downtown rather than downtown retailers, the DBBA was opposed. Opposition came particularly from several businesses concerned about the competitive

threat it would pose. The Mace Ranch Neighborhood Association that bordered the proposed development also opposed it. Despite the strong opposition, voters narrowly approved the project by a 674-vote margin in November 2006.

To evaluate the extent to which the Target opening impacted in-town spending and the vitality of the downtown core in particular, we examine changes in Davis residents' shopping patterns, focusing on two key questions: Did Target take business from downtown, as opponents argued it would? Did having an in-town Target keep more spending within the city of Davis, as proponents believed would happen?

Methods

The study focuses on shopping in three geographic areas: in the downtown core of Davis, in areas beyond downtown but within Davis, and in areas outside of Davis. Using a repeat cross-sectional design, we measured shopping frequency and spending in each location before and after the Target store opened to reveal overall changes in the distribution of spending in each location.

We administered two online surveys, one in September 2009, shortly before the Target store opened, and another one about a year later, in October 2010. In each year, we purchased from a private marketing firm the names and mailing addresses of 5,000 randomly selected Davis residents, who were mailed letters inviting them to complete an online survey. In total, 1,018 and 1,025 residents completed the survey in 2009 and 2010, respectively, for an overall response rate of about 23 percent in each year (after accounting for those returned by the postal service as undeliverable). The two separately drawn samples are demographically similar, but differ from the Davis population in several ways, notably with respect to age. Especially under-

represented are residents aged 18-24, many of whom are likely to be University of California (UC) Davis students living off campus in town. Because the commercial sampling frame might be prone to miss this group, whose residences are more transitory, we excluded them altogether, focusing on the population age 25 and older. To help correct for bias in the remaining sample, we also weighted the responses by five-year age groups, so that the portions in each group match those of the Davis population aged 25 and older according to the 2010 Census (See Lovejoy, Sciara, Salon, Handy, & Mokhtarian, 2013 for more information.)

In each year, the survey asked respondents about their most recent trip downtown Davis and its purpose, as well as whether they had shopped for a list of specific types of items (offered at Target but notably excluding groceries; see Table 2) at any stores in each of three different geographic areas at any time in the last year: downtown Davis, in Davis but outside downtown (and not at Target in year two), anywhere beyond Davis, or online. The second-year survey also asked about shopping at the Davis Target. The survey defined downtown as bounded by particular streets and showed a map of the area. “Shopping” was defined to include not just purchasing but also browsing and gathering information about an item. For each shopping location, we asked respondents how often they shop there and for the most recent occasion, how long ago it was, the stores visited, the items purchased or browsed for, whether they purchased items, and, if so, how much they spent. The survey also included questions to measure respondents’ attitudes about shopping options and their socio-demographic characteristics.

In this paper, we report results on the types of goods and amount spent at stores in each location on an average trip (as indicated by respondents’ spending on the most recent occasion) and as a monthly average (calculated as spending from the most recent trip multiplied by an

Table 2 Types of items included in the scope of shopping¹

Bedding and bath items	Sheets, pillows, bedspreads, towels, shower curtains, soap dishes, etc.
Books or electronic media	Books, DVDs, mp3s, video games
Cleaning supplies	Mop, sponges, detergent, cleaner, etc.
Clothing for adults	Clothes, shoes, accessories for women and/or men
Clothing for children	Clothes, shoes, accessories for children and babies
Electronics	Phones, cameras, audio equipment, video game consoles, and related items
Furniture	Tables, chairs, sofas, bookcases, lamps, etc.
Garden supplies	Plants, pots, potting soil, plant food, etc.
Hardware	Hand tools, hooks, knobs and pulls, etc.
Home décor	Curtains, rugs, picture frames, vases, etc.
Office, school, or art supplies	Paper, notebooks, pens, wrapping paper, scrapbooking supplies, etc.
Patio items	Patio furniture, barbecues, umbrellas, etc.
Small appliances	Microwaves, blenders, irons, vacuum cleaners, etc.
Sporting goods	Sports equipment, fitness equipment, camping equipment, bicycles, etc.
Storage and organization	Storage boxes or baskets, closet systems, shelving, etc.
Toiletries or cosmetics	Shampoo, soap, toothpaste, make-up, etc.
Toys or games	Character toys, stuffed animals, board games, puzzles, playhouses, etc.

¹Respondents were asked, “Have you shopped at a store in [location] for any of the following items within the last year? (Remember that we mean not just purchasing, but also browsing or gathering information about an item.)”

estimate of shopping frequency in that location based on respondents’ reports in the survey). We sum across all locations to estimate each respondent’s total monthly spending on the specified types of goods. We note that this method of summing across location categories could be somewhat prone to capture more spending in year two than year one, and therefore biased to show an overall increase spending. In addition, because we segmented the survey questions into discrete sections addressing recent shopping in each of four shopping locations, there was potential for double counting of trips that spanned more than one of the geographic areas (e.g., visiting stores both within and outside our “downtown” boundary area in the same trip). However, these issues should not be any different in Year 2 versus Year 1 within any one

location category, and so the comparisons within location categories across years should be valid.

Results

First we present comparisons across locations in Year 1, characterizing the retail context prior to Target's entry. Then we present results comparing findings for Year 1 versus Year 2, characterizing the impact of Target on local businesses within and beyond the downtown core. Finally, we examine perceptions of the characteristics of the different shopping locations.

Shopping patterns before Target opened: Comparisons across locations in Year 1

The Year 1 results show distinct differences in shopping patterns across locations, even before the Target opened. First, people were much less likely to shop downtown for items commonly bought at Target (as identified in our Year 2 survey) than they were to shop for these items at stores beyond downtown (especially) and out-of-town, and even online (Table 3). Second, when they shopped downtown, a somewhat greater share of respondents reported just browsing (versus purchasing): about 16% downtown versus 10% elsewhere, suggesting either a different type of shopping and/or shopping that is incidental to other activities conducted while downtown (Table 4). Third, reflecting the different mix of stores downtown versus elsewhere, only about 32% of shoppers visited a large chain store and 83% visited single-unit stores as a part of their most recent downtown shopping (Table 5). By contrast 85% visited large chains and 20% single-unit stores in their most recent shopping outside of downtown. Fourth, people reported shopping most frequently for (any of) the listed items at stores in town but outside of downtown (48 times/year) and about as often at stores downtown as out out-of-town (about 40 times/year each; see Table 6), despite the much greater distance they would need to travel to reach out-of-town stores; they

shopped least often online. In general, people also spent more money per occasion when shopping at stores out of town (\$162 on average) and online (\$122), versus about \$55 per trip in town (whether downtown or elsewhere; see Table 7).

Combining estimates for each respondent's shopping frequency and expenditure level in each location, we estimate the overall dollars spent per month (on shopping trips that included shopping for the types of items offered at Target) to be an average of about \$1000/month in all locations in Year 1, with just over half spent out-of-town (\$552/month), and the remaining half fairly evenly divided between shopping downtown, beyond downtown, and online (see Table 8 and Figure 2). This means about a third (36%) of all spending was in-town in Year 1, with more of it outside of downtown than within the downtown core.

Changes in shopping patterns after Target opened: Overall and in each location Year 2 versus Year 1

The overall shopping frequency (at all locations summed) did not change from Year 1 to Year 2 (Table 6). After Target opened, people shopped just as often, in general, at about 162 times a year (or 13.5/month or 2.9/week), on average, for the types of items included in the study.

However, they shifted the locations where they shopped. They started shopping at the in-town Target about twice a month (25.2 times per year, on average), and reduced their frequency shopping elsewhere by about the same amount. In particular, shopping outside of town decreased by just over one occasion per month (from 41.3 to 27.8 times per year, $p=0.000$); shopping in town at stores beyond downtown also decreased by more than one occasion per month (from 47.5 to 32.8 times per year, $p=0.000$); and shopping in downtown may have also decreased slightly, measured as a decrease of 3.8 trips per year (but with marginal statistical significance,

Table 3. Percent of shoppers who bought items of each type on last occasion, year 1 versus year 2, by location

Item categories (sorted by % shopping for each at Target in Year 2)	Year 2 at Target	Year 1 at other locations				Change Year 2 vs. Year 1 at other locations			
		Down- town	Outside downtown	Beyond Davis	On-line	Down- town	Outside downtown	Beyond Davis	Online
Toiletries or cosmetics	41%	4%	46%	33%	5%	+ 0.0%	-2.6%	-5.8% **	+ 0.1%
Cleaning supplies	28%	7%	28%	30%	1%	-1.1%	-5.7% **	-6.8% ***	+ 0.6% -
Clothing for adults	20%	9%	5%	36%	19%	-2.3% *	+ 1.7% -	+ 3.0%	+ 0.1%
Clothing for children	14%	4%	1%	15%	5%	-0.8%	+ 1.1% -	-3.6% **	+ 0.0%
Office, school, art supplies	13%	5%	25%	15%	2%	-1.9% *	+ 1.6%	-2.4% -	+ 0.2%
Bedding and bath items	12%	2%	2%	15%	3%	-0.1%	+ 0.5%	-0.2%	+ 0.6%
Toys or games	11%	5%	3%	8%	3%	-0.1%	+ 0.4%	-2.6% **	-0.7%
Garden supplies	7%	25%	4%	12%	1%	+ 0.4%	+ 1.0%	-0.7%	+ 0.4%
Books/electronic media	7%	22%	6%	11%	29%	+ 0.1%	+ 1.5%	+ 0.5%	+ 1.2%
Home décor	7%	3%	4%	12%	3%	+ 0.8%	+ 2.7% **	+ 0.7%	+ 0.3%
Storage and organization	7%	1%	3%	7%	1%	+ 0.4%	+ 0.2%	-2.2% *	-0.2%
Small appliances	6%	2%	1%	8%	2%	-0.7% -	-0.5%	-2.6% **	+ 0.5%
Electronics	5%	3%	6%	15%	13%	+ 1.4% -	-0.1%	-0.5%	+ 0.4%
Sporting goods	5%	8%	14%	9%	7%	-1.7%	-0.8%	-1.1%	-0.8%
Hardware	3%	36%	4%	15%	2%	-0.6%	-0.8%	-2.7% -	-0.1%
Furniture	3%	1%	2%	7%	2%	+ 0.2%	-1.1% -	-1.2%	-0.4%
Patio items	1%	2%	1%	2%	1%	-1.2% *	+ 0.3%	+ 0.7%	-0.1%
Weighted N	679.4	813.1	747.2	834.1	742.4	1,527.1	1,318.9	1,522.1	1,405.3

Significance for chi-squared test of difference of proportions indicated with *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, - $p < 0.2$. Data weighted by age.

Table 4. Percent of shoppers who purchased versus browsed only

Location	Percent that purchased		Comparison across locations (Year 1 only)			Comparison across years for each location		Total N (Year 1 and Year 2)
	Year 1	Year 2	p-value for comparison with:			Change	p-value (Year 1 vs. Year 2)	
			Not downtown	Out of town	Online			
Downtown	84.0%	84.2%	0.005	0.000	0.000	+ 0.3%	0.885	1,572.2
Outside downtown	88.8%	91.0%		0.053	0.000	+ 2.3%	0.146	1,409.7
Target	n/a	91.3%	n/a	n/a	n/a	n/a	n/a	696.6
Out of town	91.6%	92.3%			0.000	+ 0.7%	0.564	1,576.8
Online	72.0%	74.1%				+ 2.1%	0.371	1,434.8

p-values are for chi-squared tests of independence across groups. Data are weighted by age. Group counts are rounded to nearest integer for the purposes of the statistical test.

Table 5. Percent of shoppers who reported visiting each type of store as a part of their last trip in each location

	Year 1			Year 2			p-value (Year 1 vs. 2)		
	Large chain	Regional chain	Single-unit	Large chain	Regional chain	Single-unit	Large chain	Regional chain	Single-unit
Downtown	31.7%	6.2%	83.8%	32.1%	5.2%	83.3%	0.860	0.419	0.787
Outside downtown	85.1%	15.8%	19.7%	84.4%	14.5%	23.5%	0.774	0.523	0.089

p-values are for chi-squared tests of independence across groups. Data are weighted by age. Group counts are rounded to nearest integer for the purposes of the statistical test.

Table 6. Estimated number of shopping occasions per year, in each location and overall, Year 1 versus Year 2

Location	Year 1		Year 2		Year 1 versus Year 2		Total N (Year 1 and Year 2)
	Mean	(s.d.)	Mean	(s.d.)	Mean difference	p-value	
Downtown	38.3	(48.1)	34.5	(45.1)	- 3.8	0.101	1,622.6
Outside downtown	47.5	(57.1)	32.8	(49.3)	- 14.7	0.000	1,618.2
Target	n/a	n/a	25.2	(34.9)	n/a	n/a	708.5
Beyond Davis	41.3	(49.2)	27.8	(38.9)	- 13.5	0.000	1,655.5
Online	34.5	(51.9)	37.2	(57.7)	+ 2.7	0.315	1,652.9
As summations:							
All Davis locations	86.0	(81.9)	93.2	(80.8)	+ 7.2	0.092	1,484.1
All physical locations	127.2	(99.9)	122.3	(94.9)	- 4.9	0.333	1,468.2
All locations	162.1	(119.2)	162.0	(119.5)	- 0.1	0.990	1,447.8

p-values are for a t-test of equivalence of means across years. Data are weighted by age.

Table 7. Average total amount spent on last occasion in each location, Year 1 versus Year 2 (excluding outliers)¹

	Year 1		Year 2		Year 1 versus Year 2		Total N
	Mean	(s.d.)	Mean	(s.d.)	Mean difference	p-value	
Downtown	\$57.00	(77.15)	\$50.37	(68.65)	- \$6.63	0.099	1,317.8
Outside downtown	\$53.34	(62.2)	\$53.69	(64.73)	+ \$0.35	0.923	1,260.0
Target			\$59.87	(64.32)			635.7
Beyond Davis	\$162.03	(177.81)	\$145.31	(135.85)	- \$16.72	0.049	1,376.2
Online	\$122.19	(159.76)	\$108.25	(127.34)	- \$13.94	0.126	999.8

p-values are for a t-test of equivalence of means across years. Data weighted by age.

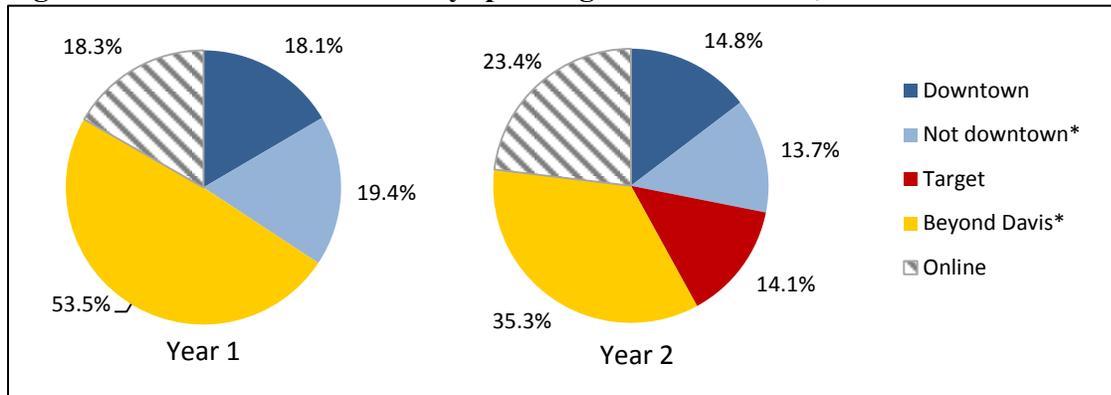
¹Among purchasers, excluding >\$1,000 total or \$500 per item.

Table 8. Estimated monthly spending, in each location and overall, Year 1 versus Year 2

Location	Year 1		Year 2		Year 1 versus Year 2		Overall N
	Mean	(s.d.)	Mean	(s.d.)	Mean difference	p-value	
Downtown	\$173.10	(559.87)	\$135.03	(420.56)	-\$38.08	0.120	1,611.8
Outside downtown	\$185.98	(376.54)	\$124.57	(281.13)	-\$61.41	0.000	1,599.4
Target	n/a	n/a	\$128.28	(288.93)	n/a	n/a	689.0
Beyond Davis	\$513.11	(1107.86)	\$321.92	(726.06)	-\$191.19	0.000	1,571.3
Online	\$175.07	(537.87)	\$213.21	(811.3)	\$38.15	0.274	1,606.1
All Davis locations	\$349.40	(644.79)	\$386.64	(577.47)	\$37.25	0.256	1,449.6
All physical locations	\$844.65	(1304.38)	\$712.80	(1010.56)	-\$131.85	0.035	1,366.8
All locations	\$958.31	(1333.09)	\$912.05	(1371.12)	-\$46.26	0.540	1,311.5

p-values are for a t-test of equivalence of means across years. Data weighted by age.

Figure 2. Percent of total monthly spending in each location, Year 1 versus Year 2



* indicates statistically significant change ($p < 0.05$). Changes are not statistically significant for monthly spending downtown or online. See Table 8. Data are weighted by age.

p=0.101). The incidence of shopping online did not change significantly (remaining at about 3 times per month). This means there was an overall shift toward more in-town shopping, including at the new in-town Target, and less out-of-town shopping, but the net change was modest: an average increase of 0.6 shopping occasions per month at all in-town locations combined (marginally significant at p=0.092).

After the in-town Target opened, on the occasions that people did shop in each location, they bought goods in different proportions by type and spent different amounts of money at the old locations. The biggest changes were at out-of-town stores, where the incidence of shopping declined for cleaning supplies, toiletries/cosmetics, children's clothing, toys/games, small appliances, and storage/organization supplies (Table 4), and the overall average amount of money spent per shopping occasion declined by \$17 (p=0.049; Table 7).

In town, the incidence of shopping in the stores beyond downtown declined only for cleaning supplies, but not for any other categories (see Table 4), and the overall average amount of money spent per occasion did not change significantly (p=0.923, see Table 7). Within downtown, there was almost no change in the types of items people shopped for (Table 4), but a small, marginally significant decrease in the average amount of money spent per occasion (a \$7-reduction on average, p=0.099; Table 7).

Combining data on per-occasion spending and shopping frequency, we estimate that overall monthly spending at all locations (combined) was about the same in Year 2 (including spending at the new in-town Target) as in Year 1 (without the Target), or about \$912/month and \$958/month, respectively (with p=0.540; see Table 8). In Year 2, monthly spending at the in-town Target was an estimated \$128/month, on average, or 14% of total monthly spending overall, and significantly displaced spending at stores in other locations. The impact appears to

have been greatest for out-of-town stores, where estimated spending decreased from \$513/month to \$322/month, on average, a \$191 or 37-percent drop ($p=0.000$; Table 8). The overall portion spent out-of-town decreased from 54% to 35% of total spending at all locations. Spending at in-town stores beyond downtown also decreased, from an estimated \$186/month to \$125/month, on average, a \$61 or 33-percent drop ($p=0.000$, Table 8). Estimated spending at downtown stores decreased from \$173/month to \$135/month, but the change is not quite statistically significant (with $p=0.120$, Table 8). There was also no significant change in estimated spending online.

While spending in town (all in-town locations combined) appears to have increased in Year 2 by about 11% on average (or \$37/month per person), this change is not statistically significant ($p=0.256$). In other words, the opening of the Target store had no (statistically significant) impact on overall spending in town (at least for the types of items included in this study), or on the corresponding sales tax revenue generated by these purchases. Data from the city of Davis show that overall sales tax revenue did increase in 2010 (the year after Target opened), but it decreased back to pre-Target levels the following year (2011) (City of Davis, 2007-2011). Furthermore, both sets of changes were small relative to sales-tax fluctuations in preceding years and would need to be examined in the context of broader economic trends to assess their magnitude. Nevertheless, these data support the plausibility of our finding that Target may have had no net impact on spending in town.

Figure 2 depicts the overall change in the portion of monthly spending in each location category between Year 1 and Year 2 based on the survey results. Spending at the new Target store in Year 2 appears to mostly displace spending at stores outside of town, which shrinks from 53.5% of respondents' overall spending in Year 1 to 35.3% in Year 2. However, it also displaces some spending at other stores in town, which collectively captured 37.5% of overall spending in

Year 1 but declined to 28.5% in Year 2, with a bigger impact on stores outside of downtown than those in downtown.

Perceptions of Characteristics of Shopping Locations

We also explored the degree to which Target serves as a replacement for shopping downtown by examining perceptions of the characteristics of the different shopping locations. Davis residents see downtown stores as offering higher priced but higher quality products, with a more limited product selection (Table 9). Stores offer more interaction with customers, but returning items is more difficult and the hours of operation are more limited. Shopping downtown is seen as both more environmentally friendly and better for the Davis economy; it is easier to get to by walking or biking than Target, but less easy to drive or park there. The only characteristics on which downtown did not differ from Target was on the quality and availability of the bike parking, rated as high in both locations (reflecting city requirements). These differences in the perceptions of the characteristics of the different shopping locations suggest that shopping at Target is not a substitute for downtown with respect to the nature of the experience. Not surprisingly, as shown elsewhere in the survey, many trips to downtown are for purposes other than shopping: on the most recent trip to downtown, 54% of respondents reported eating or drinking and 46% reported visiting a service provider (e.g. bank, insurance agent), while 44% reported shopping. Interestingly, the experience of shopping at Target also mostly differs from the experience of shopping at stores outside of downtown and beyond Davis. These results suggest that Target expanded rather than replicated the existing shopping options for Davis residents.

Table 9. Perceptions of Characteristics of Shopping Locations (-2 to 2 scale as indicated)

	-2	+2	Target	Down- town	Outside downtown	Beyond Davis
Price	Inexpensive	expensive	-0.76	0.93 *	0.24 *	-0.59 *
Product quality	low	high	0.09	0.86 *	0.52 *	0.60 *
Product selection	limited	broad	0.84	-0.56 *	0.13 *	1.41 *
Hours of operation	limited	extensive	1.17	-0.13 *	0.50 *	1.19
Customer interaction	poor	excellent	0.06	0.81 *	0.52 *	0.29 *
Returning an item	difficult	easy	1.16	0.67 *	0.71 *	0.75 *
Environmental friendliness	low	high	0.23	0.92 *	0.47 *	-0.15 *
Impact on the Davis economy	negative	positive	0.65	1.20 *	0.95 *	-1.25 *
Driving there	difficult	easy	1.22	0.75 *	1.25	0.55 *
Parking there	difficult	easy	1.62	-0.26 *	1.22 *	1.04 *
Walking there	difficult	easy	-1.25	0.01 *	-0.37 *	-1.86 *
Biking there	difficult	easy	-0.42	0.79 *	0.40 *	-1.75 *
Quality/availability of bike parking	low	high	0.82	0.75	0.60	n/a

*Significance for t-test of difference of means between Target and other locations indicated with *p<0.01.

Discussion and Conclusions

The controversy in 2006 surrounding the proposed new Target store in Davis was fueled in large part over the fear of its impact on downtown. Our results show that the impacts were limited. Pre-Target, Davis residents went downtown less often for the types of items sold at Target than they went to stores outside downtown or beyond Davis. Indeed, downtown locations accounted for only about one-fifth of residents' overall monthly spending on these types of items. One year after Target opened, there was no statistically meaningful loss in total spending at stores downtown according to our results, despite significant losses at stores outside downtown and beyond Davis. These results suggest that these types of items did not contribute in an important way to the vibrancy of downtown Davis before the Target opening or afterwards, a result consistent with other studies (Robertson, 1999).

Those on the “pro” side of the controversy argued that residents would shop at Target in Davis rather than driving to Target stores in surrounding communities, thereby keeping these tax revenues in Davis and reducing driving. Our results suggest that this did happen, at least in part, as both the frequency of trips to and spending at stores beyond Davis declined. But non-downtown stores within Davis also saw a decrease, suggesting that Target did in part redistribute spending within the community even if it had a limited impact on downtown spending. Single-unit stores, which are often locally owned, seem to have been less affected than large chain stores. Thus, while it appears that Target may have helped Davis retain some spending (and thus tax revenues) that otherwise would have gone to surrounding communities, it may have negatively affected businesses and culture outside of downtown.

One consideration in interpreting our results is whether the survey sample – which excludes those under age 25, many of whom are more transitory university students but still a

potentially important market segment – might lead us to over- or under-estimate the spending shift. It seems plausible that this younger market segment might be more sensitive to price as well as less mobile (that is, more likely to shop in town), and therefore more likely to shift in-town spending to spending at Target. Comparing the sample of those participating in this online survey with those answering an intercept survey at the Target store entrance (as reported in Sciara, Lovejoy, & Handy, 2013) shows that those entering the store were, on average, younger and more frequent shoppers than the participants in our survey. Further, they were more likely to say that if the Target weren't an option, they would have shopped either not at all or in-town, versus out of town, compared to the participants on our online survey. While it is unknown what portion of this spending would have been downtown versus at the lower-priced chain stores beyond downtown, omitting this market segment may underestimate the impact on all in-town stores.

Another consideration in evaluating the impact of Target is timing. One year later may be too soon to evaluate longer-run behavior change. Shopping patterns may continue to evolve as consumers adjust to the new set of options. In addition, the zoning amendment to allow Target has led to a continuing unresolved debate over other retail space in the Target development (e.g. Sakesh, 2013). As in other communities, the decision to allow the first big box store may be the first crack in the floodgate for additional exceptions to anti-chain policies, which could in turn amplify the overall impact on local, independent stores.

Although this study focused on overall changes, even small changes (perhaps not statistically perceptible in this study) could be meaningful for individual businesses, probably more so for small, independent businesses than for the larger chain stores. In Davis, an independent toy store and two bookstores that were located downtown closed shortly after Target

opened. While these closures may have been precipitated by larger economic trends, particularly the recession, Target could have played a role in making a tough market even tougher. The literature we cited— which found no *net* loss of small firms in the wake of big box entry (e.g. Sobel & Dean, 2008; Hicks, 2009) though possibly increased churn (Paruchuri et al., 2009) — leans on Schumpeter’s (1934) notion of “creative destruction,” which posits that killing off old ways makes room for (and is inherent in) growth, and therefore takes a neutral stance on the old versus new. But such churn may not feel neutral for those involved. Even if a new locally owned enterprise emerges to take the place of the departed toy store (perhaps one more compatible with current market conditions and the presence of a nearby big box store), the community may feel a loss. Especially at the local level, turnover matters and has a cost, with net employment (or numbers of businesses) masking some amount of upheaval that occurs during a transition (Ficano, 2012). The dissolution of long-standing businesses may incur some loss of continuity and community heritage. What the new mix of businesses offers the community may be different from the old.

Furthermore, even if downtown Davis proves resilient to Target’s presence over time, this may not necessarily be the case for other towns where big box stores encroach. A number of factors contribute to the particular circumstance in Davis, from demographics to geography, but also city policy and an active community (including the DDBA and other actors) that have taken decisive steps to preserve, activate, and reinvent town culture and the downtown area. It may be important that the vitality of downtown Davis is rooted in activities other than staple-goods retail (such as its farmers market, parks, art walk, concert series, independent eating and drinking places, and service-oriented businesses; see Hankins, 2002). Downtown Davis has many of the

features identified by Robertson (1999) as key strategies for a small-city downtown to remain viable.

That said, a main thrust of our results is that in some instances, such as in Davis, the threat of a big box store may be overstated or misunderstood, which could lead to several unfortunate outcomes. First, restricting big box stores could deny consumers the beneficial opportunity to shop at nearby big box stores and unnecessarily protect incumbent businesses (Hausman & Leibtag, 2007; Basker, 2005; Karamychev & van Reeve, 2009; Lovejoy et al., 2013). A number of authors point to scenarios in which independent businesses can coexist and thrive in the presence of big box retailers (as discussed in Arthur Andersen, 1997; Barber & Tietje, 2004; Fox et al., 2004; Jones & Doucet, 2000; Li, 2010; Litz & Stewart, 1998, 2000a, 2000b; Jarmin et al., 2009). The general consensus from this literature is that independents can best compete by specializing in particular product areas and providing higher-quality customer service, rather than trying to compete on low prices and product breadth. For instance, New (2013) describes how a locally owned hardware store adapted to thrive and survive after a Home Depot (big box store) opened nearby by tailoring services to a particular market segment (women), focusing on a particular specialty (home repair), and investing heavily in customer service. Sobel and Dean (2008) use the hypothetical example of a hardware store going out of business in the wake of a Wal-Mart opening that then creates the opportunity for an art gallery to open in its place. Clearly chain stores and mom-and-pop stores may be better able to coexist in some sectors than in others, with Jarmin et al.'s (2009) results suggesting that it may be more difficult with general merchandise, apparel, and accessories, but easier for eating and drinking places, for instance.

Second, a focus on restricting big box stores altogether could distract planners from formulating other policies that might leverage them for greater community benefit, such as taking a more exacting stance on their precise locations, physical formats, and integration with other land uses. For instance, big box stores can serve as anchors that help generate additional business for some in their immediate proximity (as discussed in Paruchuri et al., 2009; Hicks, 2009; Jones & Doucet, 2000). In the Davis case, the in-town Target resulted in a shift from out-of-town to in-town shopping trips, but the store's location on the edge of town limits potential overflow benefits for complementary business types or activities. Encouraging big box retail to adjoin traditional shopping districts as a means of facilitating linkages with other in-town activities might be a tool for promoting the vitality of city centers (Ozuduru, Varol, & Ercoskun, 2012; Thomas & Bromley, 2003). It may also help make them more accessible on foot, rather than perpetuating automobile dependence. By contrast, results from this study indicated that 93% of shoppers drove to Target on their most recent trip (Lovejoy et al., 2013). A more recent trend for chain stores, and even some "big box" stores like Target, to occupy smaller-format stores in downtown areas, especially in major cities (e.g. Clifford, 2012; Hankins, 2002), is a reason for planners to consider their potentially integrated role. In general, Teller & Reutterer (2008) note the overall trend for fewer unplanned or evolved agglomerations of retail (e.g. traditional shopping streets or town/city centers) and a rising number of planned agglomerations (e.g. malls, shopping centers), with increasing competition among the latter. If planners want to cultivate a regionally competitive shopping district, they may need to more deliberately engineer a cohesive and attractive agglomeration, which according to Teller & Reutterer's (2008) findings, means one with a broad and deep mix of goods and stores, relevant anchor stores, and an attractive environment and atmosphere.

If a primary concern of local governments is to preserve and/or cultivate a vibrant central district, then more research may be needed on the potential role of major retail in strategies for accomplishing this goal. For instance, there are no studies explicitly evaluating the relationship between the vitality of a central district and the presence of a big box store in its vicinity, or of the impact of local action to restrict big box stores on downtown vitality. Rather than asking, “what is the impact of a big box store?” planners should ask, “among the factors that impact the vitality of a town, do big box stores matter?” For instance, Goetz and Rupasingha (2006) examine the relationship between Wal-Mart’s presence and measures of social capital at a county level (e.g. things like number of social organizations per capita and church attendance), but found few significant effects. Ultimately, policymakers and researchers should look beyond the past or ongoing effects of existing big box retail and consider its potential future role, integrated with other community goals, and then formulate policies that will help foment that outcome.

References

- Arthur Andersen, LLP. (1997). *Small Store Survival: Success Strategies for Retailers*. New York: Wiley.
- Artz, G. M., & Stone, K. E. (2006). Analyzing the impact of Wal-Mart supercenters on local food store sales. *American Journal of Agricultural Economics*, 88(5, Proceedings Issue), 1296-1303.
- Barber, C. S., & Tietje, B. C. (2004). A distribution services approach for developing effective competitive strategies against “big box” retailers. *Journal of Retailing and Consumer Services*, 11(2), 95–107.

- Basker, E. (2005). Selling a cheaper mousetrap: Wal-Mart's effect on retail prices. *Journal of Urban Economics*, 58(2), 203–229.
- Basker, E. (2007). The causes and consequences of Wal-Mart's growth. *Journal of Economic Perspectives*, 21(3), 177-198.
- Basker, E., Klimek, S., & Hoang Van, P. (2012). Supersize it: The growth of retail chains and the rise of the “Big-box” store. *Journal of Economics & Management Strategy*, 21(3), 541-582.
- Bianchi, D., & Swinney, D. (2004). Wal-Mart: A destructive force for Chicago communities and companies. Special Report to The New Chicago School of Community Economic Development. Chicago: Center for Labor and Community Research.
- Chiou, L. (2005). Empirical analysis of retail competition: Spatial differentiation at Wal-Mart, Amazon.com, and their competitors. Occidental College, Department of Economics, Working Paper No. 3.
- City of Davis. Ordinance No. 2259 (2006). Davis, California.
- City of Davis. (2007-2011). Comprehensive Annual Financial Reports, 2007-2011 (<http://administrative-services.cityofdavis.org/budget-and-financial-planning/comprehensive-annual-financial-reports-cafr>).
- Clifford, S. (2012, July 26). Retailers' idea: Think smaller in urban push. *The New York Times*, p. A1. <http://www.nytimes.com/2012/07/26/business/retailers-expand-into-cities-by-opening-smaller-stores.html>.
- Cohen, L. (1996). From town center to shopping center: The reconfiguration of community marketplaces in postwar America. *The American Historical Review*, 101(4), 1050-1081.

- Ficano, C. C. (2012). Business churn and the retail giant: Establishment birth and death from Wal-Mart's entry. *Social Science Quarterly*, 94(1), 263-291.
- Fox, E. J., Montgomery, A. L., & Lodish, L. M. (2004). Consumer shopping and spending across retail formats. *Journal of Business*, 77(2): S25-S60.
- Goetz, S. J., & Rupasingha, A. (2006). Wal-Mart and social capital. *American Journal of Agricultural Economics*, 88(5, Proceedings Issue), 1304-1310.
- Goetz, S. J., & Shrestha, S. S. (2009). Explaining self-employment success and failure: Wal-Mart versus Starbucks, or Schumpeter versus Putnam. *Social Science Quarterly*, 91(1), 22-38.
- González-Benito, Ó., Muñoz-Gallego, P. A., & Kopalle, P. K. (2005). Asymmetric competition in retail store formats: Evaluating inter- and intra-format spatial effects. *Journal of Retailing*, 81(1), 59–73.
- Halebsky, S. (2004). Superstores and the Politics of Retail Development. *City & Community*, 3(2), 115-134.
- Haltiwanger, J., Jarmin, R. & Krizan, C.J. (2010). Mom-and-Pop meet Big-Box: Complements or substitutes? *Journal of Urban Economics*, 67(1), 116–134.
- Hankins, K. (2002). The restructuring of retail capital and the street. *Tijdschrift voor Economische en Sociale Geografie*, 93(1), 34-46.
- Hausman, J., & Leibtag, E. (2007). Consumer benefits from increased competition in shopping outlets: Measuring the effect of Wal-Mart. *Journal of Applied Econometrics*, 22(7), 1157-1177.
- Hicks, Michael J. (2009). Wal-Mart and Small Business: Boom or Bane? *Review of Regional Studies*, 39(1),73–83.

- Holmes, T. J. (2001). Bar codes lead to frequent deliveries and superstores. *RAND Journal of Economics*, 34(4), 708–25.
- Jackson, K.T. (1996). All the world's a mall: Reflections on the social and economic consequences of the American shopping center. *The American Historical Review* 101(4), 1111-1121.
- Jarmin, R.S., Klimek, S.D., & Miranda, J. (2009). The role of retail chains: National, regional and industry results. *Producer Dynamics: New Evidence from Micro Data*. T. Dunne, J. B. Jensen, & M. J. Roberts (Eds.). Chicago: University of Chicago Press.
- Jia, P. (2008). What Happens When Wal-Mart Comes to Town: An Empirical Analysis of the Discount Retailing Industry. *Econometrica*, 76(6), 1263–1316.
- Jones, K., & Doucet, M. (2000). Big-box retailing and the urban retail structure: The case of the Toronto area. *Journal of Retailing and Consumer Services*, 7(4), 233-247.
- Karamychev, V., & van Reeven, P. (2009). Retail sprawl and multi-store firms: An analysis of location choice by retail chains. *Regional Science and Urban Economics*, 39(3), 277–286.
- Li, J. (2010). Choosing the right battles: How independent bookshops in Sydney, Australia compete with chains and online retailers. *Australian Geographer*, 41(2), 247-262.
- Litz, R.A., & Stewart, A.C. (1998). Franchising for sustainable advantage? Comparing the performance of independent retailers and trade-name franchises. *Journal of Business Venturing*, 13(2), 131–150.
- Litz, R.A., & Stewart, A.C. (2000a). The late show: the effects of afterhours accessibility on the performance of small retailers. *Journal of Small Business Management*, 38(1), 1–26.

- Litz, R.A., & Stewart, A.C. (2000b). Where everybody knows your name: Extraorganizational clan-building as small firm strategy for home field advantage. *Journal of Small Business Strategy*, 11(1), 1–13.
- Lovejoy, K., Sciara, G., Salon, D., Handy, S., & Mokhtarian, P. (2013). Measuring the impacts of local land-use policies on vehicle miles of travel: The case of the first big-box store in Davis, California. *The Journal of Transport and Land Use*, 6(1), 25-39.
- Mitchell, S. (2008). *Big-Box Swindle: The True Cost of Mega-Retailers and the Fight for America's Independent Businesses*. Boston : Beacon Press.
- Neumark, D., Zhang, J., & Ciccarella, S. (2008). The effects of Wal-Mart on local labor markets. *Journal of Urban Economics*, 63(2), 405–430.
- New, C. (2013, January 23). Intown Ace Hardware, local mom-and-pop store, outmaneuvers Home Depot to survive. *Huffington Post*.
http://www.huffingtonpost.com/2013/01/23/intown-ace-hardware_n_2456458.html.
- Ozuduru, B.H., Varol, C., & Ercoskun, O. Y. (2012). Do shopping centers abate the resilience of shopping streets? The co-existence of both shopping venues in Ankara, Turkey. *Cities* (in press).
- Paruchuri, S., Baum, J.A.C., & Potere, D. (2009). The Wal-Mart effect: Wave of destruction of creative destruction? *Economic Geography*, 85(2), 209-236.
- Robertson, K. A. (1999). Can small-city downtowns remain viable? *Journal of the American Planning Association*, 65(3), 270-283.
- Sakesh, T. (2013, September 13). Planning Commission not ready to change Target site pad restrictions. *Davis Enterprise*, p. A1. <http://www.davisenterprise.com/local-news/city/planning-commission-not-ready-to-change-target-site-pad-restrictions/>.

- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Sciara, G., Lovejoy, K. E., & Handy, S. L. (2013). Intercept or internet: Survey modes for measuring vehicle miles of travel. Paper submitted to the 2014 Transportation Research Board Annual Meeting, Washington, DC.
- Scroop, D. (2008). The anti-chain store movement and the politics of consumption. *American Quarterly*, 60(4), 925-949.
- Singh, V. P., Hansen, K. T.; & Blattberg, R. C. (2006). Market entry and consumer behavior: An investigation of a Wal-Mart supercenter. *Marketing Science*, 25(5), 457-76.
- Sobel, R.S., & Dean, A.M. (2008). Has Wal-Mart buried mom and pop?: The impact of Wal-Mart on self-employment and small establishments in the United States. *Economic Inquiry*, 46(4), 676-695.
- Teller, C., & Reutterer, T. (2008). The evolving concept of retail attractiveness: What makes retail agglomerations attractive when customers shop at them? *Journal of Retailing and Consumer Services*, 15(3), 127-143.
- Thomas, C. J., & Bromley, R. D. F. (2003). Retail revitalization and small town centres: The contribution of shopping linkages. *Applied Geography*, 23(1), 47-71.
- U.S. Census Bureau. (2007). 2007 Economic Census. Retail Trade: Subject Series - Establishment and Firm Size, Summary Statistics for Single Unit and Multiunit Firms for the United States, 2007.
- U.S. Census Bureau. (2010). 2010 Census of Population.
<http://quickfacts.census.gov/qfd/states/06/0618100.html>.