UNDERGRADUATE RESEARCH

THE IMPACT OF MULTIMODAL TRANSPORTATION ON RETAIL SALES

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Abstract

This study seeks to estimate the impact of numerous factors on retail sales per capita in Colorado towns. Measures of walkability and bikeability are applied to isolate the influence of non-car transportation on retail sales. Additional factors considered include home values, whether a town is in an urban or rural area, and its proximity to a ski resort. Ordinary least squares is applied to a set of non-linear specifications which account for various sets of explanatory variables. In each specification, a positive relationship between walkability and retail sales is found. The same is true for home values. Of the explanatory variables considered, being in an urban area or near a ski resort have the largest positive impact on retail sales. These results complement other studies that find benefits for improvements in transportation on a community, informing the broader debate regarding car dependency, environmental sustainability, safety, and quality of life as they relate to issues of local economic development. They also put these benefits in relation to more important structural factors, such as location, that stakeholders have little influence over.

Keywords: Walkability, Bikeability, Retail Sales, Home Values

JEL Classification: R11, R40, R58

Introduction

Communities are constantly seeking ways to support their economic development and residents' quality of life. A stable commercial sector is the cornerstone of every economy. Thriving businesses are necessary for robust labor demand, facilitating households' economic livelihood. But any community is more than its economy. Residents' quality of life is a function of many things, including access to amenities, physical and mental health, and housing. In many instances, these broader influences on quality of life are intertwined. For example, a community that is easily accessible on foot facilitates improved health among its residents as they have the option to not rely on automobile transportation.

Multimodal transportation refers to modes of transportation that do not utilize single occupancy vehicles. In this paper, multimodal accessibility includes measures of a community's bikeability and walkability. Multimodal accessibility allows households to save money on vehicle and fuel costs, enjoy the environment around them, and connect more deeply with the local community. Through these mechanisms, a more equitable transportation network is facilitated. These considerations are an important factor for local governments, serving as one tool to help increase their existing population's quality of life and potentially draw migrants to their town. If the full impacts of multimodal accessibility are to be understood, however, the impact it has on the business environment must also be analyzed. In this study, we do just that. The context of analysis is Colorado towns with populations over 1,000. A specific state was chosen, because as Credit and Mack (2019) find, the impact of bikeability and walkability on various outcomes of interest is context dependent. By considering a single state, we remove variation driven by inter-state differences in economic policies and conditions, while our explanatory variables allow us to control for important city-level characteristics.

Along with multimodal accessibility, the effect of home values on retail sales per capita is analyzed. Home values respond to households' demand for access to local labor markets as well as local amenities. All else constant, higher home values signal higher demand for all a community affords its residents. But higher home prices create an unfortunate trade-off within a local economy. To the extent that housing is a necessity, increases in home prices or rent may crowd out household spending in other sectors, depressing the local economy. In the United States, home prices have increased 50% since January of 2020 (S&P Dow Jones Indices LLC, 2025) and rental prices have increased 27% (U.S. Bureau of Labor Statistics, 2025). Given the theoretical trade-offs higher home prices impose on households, it is not clear the impact of home values on retail sales.

Beyond these considerations, there are structural factors that contribute to a town's business activity. In the context of Colorado, two such factors that are accounted for are whether a town is an urban or rural area and its proximity to a ski resort. Like many other states, Colorado's economy is marked by a larger metropolitan area, Denver, and many small rural communities. What makes Colorado's rural towns unique is the difference in the structure of their economy. Many are agricultural towns, while others are world-class ski destinations. To account for this variability, we control for a town's proximity to a ski resort.

In preliminary analysis, we began to consider that the relationship between our explanatory variables and retail sales may not be linear. In part, this consideration was motivated by the importance of local economic conditions. For example, a linear model may not pick up the impact of a change in walkability on retails sales if this impact is conditional on the area's initial walkability. Additionally, the impact may be subject to diminishing returns. In our analysis, we find statistical and economic significance between walkability, home values, urban location, proximity to a ski resort, and retail sales. Bikeability is not found to impact retail sales. These findings validate the study's original hypothesis and supported conventional economic wisdom giving merit to the notion that improvements in multimodal accessibility will positively impact the business community. Home values are found to have a positive relationship with a town's total retail sales. Though, these factors are not nearly as important as being in an urban economy or being located near a ski resort.

The study proceeds as follows. The literature review outlines important studies on the impact of bikeability and walkability on quality of life and a host of economic outcomes. The data overview presents the data applied in the analysis, as well as how the data set was created. This section is followed by methodology and results. The conclusion summarizes the study's primary findings while pointing towards future research opportunities.

Literature Review

The impact of walkability and bikeability on a local community has been researched from several different perspectives. The cornerstone of this literature are studies on the health and environmental benefits that occur from a decreased reliance on cars. It comes as no surprise that as individuals walk or bike more, they become healthier. This is also true for communities. Areas with higher walkability or bikeability tend to have healthier populations. These health benefits accrue from a combination of increased physical activity and decreased exposure to pollutants generated from transportation (Marshall, Brauer, & Frank, 2009). In a thorough review of the literature, Westenhöfer et al. (2023) find a consensus that higher walkability translates into better health. While studies like Marshall, Brauer, and Frank (2009) and Westenhöfer et al. (2023) find a high degree of correlation between bikeability or walkability on health, the direction of causality is harder to establish. Are healthier individuals drawn to areas with higher levels of walkability and bikeability because they enjoy these activities, or does the area itself, by encouraging biking and walking, facilitate people becoming healthier? While an important methodological question to answer, and likely a combination of both, the causal direction between modes of transportation and health does not pertain to our study's focus on the impact of transportation on retail sales.

For economists, a natural question to ask is how these health impacts might impact more traditional economic considerations. The second strand of this literature is the impact walkability and bikeability have on property values. A positive impact has been found on both commercial and residential property (Li & Joh, 2017; Perluss, 2022). It is worth identifying the causal mechanisms at work, as some are relevant to this study. For residential property, common measures of walkability and bikeability, such as those applied in this study, include access to urban amenities, such as restaurants and libraries. A home's value is not simply a function of its physical characteristics, such as square footage and number of bathrooms, but also its geographical location. Hedonic analysis, through estimating implicit prices, allows researchers to estimate the impact of a wide array of attributes, such as proximity to amenities (e.g., Sohn, 2012; Yin et al. 2020), on a home's value. Conversely, proximity to disamenities, such as pollution, lowers a home's value. An important second benefit that walkability and bikeability may generate for residents are lower transportation costs. Costs are much lower for these forms of non-car transportation.

For commercial properties, the basic theory of the firm suggests that businesses will bid up prices in areas in which it is profitable to do so. Their demand is a function of access to customers, as well as labor and input markets. The wide swing in demand for urban commercial properties since 2020 are a testament to how dynamic commercial property values can be (Grant, 2025). Again, the positive relationship between multimodal transportation and commercial property values is well-established in the literature (e.g., Li & Joh, 2017; Perluss, 2022).

The third relevant strand of this literature establishes the impact of walkability and bikeability on local employment and business' sales. Litman (2024) cites research from the New York City Department of Transportation (2013) on the impact of multimodal transportation on consumer spending in New York City. Rowe (2013), and Sztabinski (2009) explore the same question, in Seattle and Toronto, respectively. In each of these studies, while the magnitudes are different, the underlying findings suggest that improvement in multimodal transportation yield positive impacts for local businesses. In interpreting this literature, it is important to be aware of a finding from Credit and Mack (2019), which shows that the relationship between bikeability, walkability, and business performance depends on context. In each of the studies reviewed by Litman, a positive relationship between multimodal transportation and sales is found, though the magnitude of this relationship varies across these cities. Because of this level of nuance, it is important to take context into account when researching the impact of bikeability and walkability on retail sales.

Data Overview

The data analyzed in this study are compiled from several sources including the State of Colorado, Zillow, and Walk Score. The U.S. Census Bureau's designation of urban and rural areas was used to categorize cities. Data from the State of Colorado and Zillow are for 2022. Due to a lack of historical data, Walk and Bike Score data accessed from Walk Score are from 2024. Discontinuity in the time frame considered is a recognized weakness of the study. As an undergraduate research project, the means to acquire a full time series of Walk and Bike Scores was not available. The sample is restricted to towns in Colorado with populations greater than 1,000. Analyzing towns with populations greater than 1,000 allowed for a sample of 149. Springfield is excluded from the sample because Zillow does not have an estimate of home values for 2022. Applying a threshold of 1,000 people allows for the sample to capture Colorado's diverse economy. Small rural towns, resort destinations, and the Denver metropolitan area are all included in the analysis. Lowering the threshold to a population less than 1,000 would have restricted the sample size due to data availability issues. Table 1 Descriptive Statistics presents the mean, median, min, max, and standard deviation for key variables considered in the study.

Table 1. Descriptive Statistics

	Retail Sales per Capita	Zillow Home Value	Walkability	Bikeability	Urban
Mean	$71,104	$637,894	49.80	49.24	0.22
Median	$50,992	$532,457	52.00	46.00	0.00
Min	$8,059	$103,226	8.00	7.00	0
Max	$326,109	$3,630,359	90.00	97.00	1
Standard Deviation	57,257	$469,578	18.86	16.67	0.42

Note: Retail Sales per Capita and Zillow Home Value are based upon 2022. Walkability and Bikeability are based upon 2024. Urban is a dummy variable equal to 1 for towns that are considered "urban" by the U.S. Census Bureau and 0 otherwise.

Retail sales data are provided by the Colorado Department of Revenue (2024). Businesses must report retail sales on their Colorado State Sales Tax Returns. To obtain per capita measurements, Colorado Department of Local Affairs (2024) measures of population, as of July 2022 are applied. Per capita measures allow us to control for retail sales relative to a town's population. Given that the data set includes towns with slightly more than a thousand people to the City of Denver, with the largest population in the sample, this is an important adjustment. Within our sample, Winter Park has the maximum value of retail sales per capita at $326,109, while Lochbuie has the minimum value of $8,059. For towns in the top quintile of the distribution, their retail sales per capita are over $100,000. These cities and towns represent the full swath of Colorado's economy including resort destinations such as Winter Park, Aspen, and Vail, rural economic hubs such as Grand Junction and Limon, and the affluent suburbs of Denver, including Littleton and Wheat Ridge. The bottom quintile of the distribution is entirely compromised of rural towns from across the state.

Zillow (2024) provides the home value index. Data were pulled from Zillow using their home value index calculator. Zillow provides home value data on a per town basis over time. The estimated value of a typical home accounts for the price level of current housing, market appreciation, and appreciation from home improvements. Average home values in each town as of June 2022 are applied. While gathering these data were time intensive, they allow us to consider towns in which government provided estimates of home values are not readily available. These data allow us to create a robust view of Colorado's housing market in 2022. As in the case of retail sales per capita, the cities in the top and bottom quintile reflect Colorado's unique economy. The top three towns are Aspen, Cherry Hills Village, and Telluride, respectively. Aspen and Telluride are resort destinations, and Cherry Hills Village is an affluent suburb of Denver. The three towns with the lowest home values are Rocky Ford, Julesburg, and Las Animas, all of which are small towns located in Colorado's agriculturally-based Eastern Plains.

To determine the ease, or difficulty, of navigating a town without a car, we used the website Walk Score (2024). Unfortunately, Walk Score does not have estimates of the quality of public transportation for most towns in Colorado, so measures of public transportation are not included in the analysis. The site allows users to search for a city and returns a Walk and Bike Score on a scale from 0-100. Higher values correspond to more accessibility. Walk Scores are calculated based on the time to walk from specific addresses to the nearest amenities. A town's walk score is then calculated as a combination of the walk scores from each block in the town, with each data point being weighted by population. Walk Scores include access to commercial properties, such as grocery stores, natural amenities such as public parks, and public goods such as libraries. Bike Scores are calculated based on the amount of bike infrastructure (bike lanes and trails), destinations, connectivity of roads, hilliness and the quantity of bike commuters. While convenient and accessible, Walk and Bike Scores provided by Walk Score are based on proprietary weights given to each variable within their equation. A notable merit of these data are their internal consistency, and ease at which researchers may apply them to questions of interest. Their downside is that the weighting structure is not published, limiting the researcher's ability to evaluate sub-components of either index. The scores are meant to be interpreted as broad snapshots of the walkability and bikeability of certain locations.

An interesting picture emerges when analyzing which towns do better or worse in terms of bikeability and walkability. As expected, some of the resort towns score highly on the walkability index. These include Aspen and Steamboat Springs. But towns such as Gunnison and Cortez do well, too. Both are close to National Parks, Black Canyon of the Gunnison and Mesa Verde, respectively. While only a conjecture, it seems likely that many of the communities with high Walk Scores are intentionally creating a commercial districts that are accessible on foot. That being said, high levels of walkability do not ensure commercial success. For example, Carbondale has the third highest Walk Score, while being 68th of 149 in retail sales per capita. Bikeability is less marked by anecdotal patterns. The towns and cities that have the highest and lowest scores are mix of suburban and rural towns.

Urban is a dummy variable applied to differentiate between towns in urban and rural areas. The U.S. Census Bureau definition is applied. By controlling for this difference, we can account for some of the important differences between these types of economies. Urban economies are defined by their large populations, thick markets, and geographic accessibility. In contrast, rural areas are defined by fewer people, thin markets, and geographic isolation. Because it is possible that a town in a metropolitan area would have a relatively low population density this measure was chosen over population density.

The last variable applied in the study is not included in Table 1 Descriptive Statistics. A unique aspect of Colorado's economy is the presence of rural towns that are "resort towns." Towns such as Aspen, Vail, and Telluride are geographically isolated, but their world-class ski resorts make them unlike other rural communities. These resort towns tend to have high retail sales per capita and small populations. Much of their economic activity is generated by visitors, and not residents. To control for the impact of being a resort town, three dummy variables were created. These dummies are applied individually in the analysis and represent a town's proximity to a ski resort. The distances applied are 30, 20, and 10 miles. Thirty miles was chosen as to capture towns that have proximity to ski resorts, while not necessarily being quintessential resort towns like Telluride and Vail. In the context of Colorado, this distance precludes Denver suburbs from being considered resort towns. In towns like Telluride and Vail, the ski resort abuts the town. A distance of 10 miles allows us to represent such towns. Twenty miles was chosen to allow us to determine how sensitive results are to the exact threshold applied. Within the sample, 13% of towns are within 30 miles of a resort, 8% within 20 miles, and 5% within 10 miles.

Methodology and Results

The relationship between bikeability, walkability, and retail sales is nuanced. We expected to see a positive relationship between walkability, bikeability, and retail sales. Though, as mentioned in the introduction, there are ways in which these relationships may in fact be negative. For example, shopping by foot or bike dramatically limits the amount of goods that can be purchased. Cars greatly enhance our ability to move goods from businesses to homes. Another factor is Colorado's harsh winter climate. Non-car-based transportation may only be appealing in summer months limiting its impact on retail sales. Similarly, to the extent that home values represent demand-side considerations, we expected to see a positive relationship between home values and retail sales. Home values act as a control for factors that are correlated with retail sales, such as income or employment, but are not included in the model. Though this hypothesized relationship may not be accurate. It is possible that as home values increase, spending in other areas decrease as households devote more of their budget to housing. We also expected urban communities and resort communities, all else constant, to have higher retail sales than their rural and non-resort town counterparts. For stakeholders interested in local economic development, these trade-offs are compelling and are what initially motivated the study.

To evaluate these hypotheses, ordinary least squares (OLS) was applied to several different model specifications. The possibility of a nonlinear relationship between retail sales and the explanatory variables was prompted by Credit and Mack's (2019) finding related to the importance of context. It is possible that any relationships uncovered in a linear specification are subject to diminishing returns or threshold effects. It stands to reason that improvements in Walk Score may lead to smaller and smaller increases in retail sales. The same is possible for home values. In preliminary analysis, we explored whether a linear or nonlinear specification would be more appropriate. Scatterplots of retail sales versus walkability and retail sales versus bikeability suggested that many of the relationships of interest may be impacted by variables with a high variance. Both scatterplots are included in the Appendix. Taking the natural logs of key variables is one way to decrease this variability. In our estimations, heteroskedasticity robust standard errors are applied. A Breusch-Pagan test for heteroskedasticity of our baseline model confirmed that a nonlinear specification did a better job of accounting for heteroskedasticity than its linear counterpart. For these reasons, a nonlinear specification was deemed appropriate. For the sake of being concise, we present findings from a log-log specification.

The baseline model represents retail sales per capita as a log-log function of the key explanatory variables:

$$ln\_RS\_PC_i = \beta_0 + \beta_1 ln\_WalkScore_i + \beta_2 ln\_BikeScore_i + \beta_3 ln\_HomeValue_i + u_i$$

where *ln* refers to the natural log, *i* refers to a town, *RS_PC* are retail sales per capita, *WalkScore* is the town's Walk Score, *BikeScore* its Bike Score, *HomeValue* is Zillow's home value, and *u* is an error term. Results from the baseline specification are presented in Column 1 of Table 2. Standard errors are heteroskedasticity robust standard errors.

While a simple model, the R^2, adjusted R^2, and overall *F*-statistic are encouraging. Our base model captures a little more than one third ($\overline{R^2} = 0.35$) of the variation in retails sales. Certainly, there are many unaccounted-for factors in the model, but accounting for a third of the variation is a noted strength of this simple framework. The overall *F*-statistic indicates that this set of explanatory variables are collectively statistically significant.

Table 2. Nonlinear Results

Dependent Variable: ln_Retail Sales per Capita

Variable	(1)	(2)	(3)	(4)	(5)
Intercept	0.34 (1.01)	0.27 (1.01)	2.00* (1.15)	2.14* (1.18)	2.06* (1.19)
ln_WalkScore	0.53*** (0.11)	0.57*** (0.11)	0.50*** (0.12)	0.49*** (0.11)	0.52*** (0.11)
ln_BikeScore	0.12 (0.13)	0.09 (0.14)	0.08 (0.14)	0.12 (0.14)	0.07 (0.13)
ln_HomeValue	0.61*** (0.07)	0.61*** (0.07)	0.50*** (0.08)	0.48*** (0.09)	0.50*** (0.09)
Urban	-	0.16 (0.10)	0.19* (0.01)	0.21** (0.01)	0.20** (0.01)
Resort_30	-	-	0.44*** (0.17)	-	-
Resort_20	-	-	-	0.62*** (0.23)	-
Resort_10	-	-	-	-	0.70*** (0.25)
F-Statistic	37.69***	28.98***	25.92***	24.71***	23.57***
R^2	0.37	0.37	0.41	0.42	0.41
$\overline{R^2}$	0.35	0.36	0.39	0.40	0.39
n	149	149	149	149	149

Note: ln refers to the natural log of the respective variable. Standard errors are given in parentheses under the coefficients. The number of observations is denoted *n*. Significance at the 1% level, ****. Significance at the 5% level, **, and significance at the 10% level, *.

The interpretation of coefficients as elasticities lends itself to applying the model's predictions to specific towns in the data set. Walk Score and Home Value's coefficients estimate the impact of a one percent change in either variable on Retail Sales. A one percent change is relative to a town's value for either explanatory variable. For example, consider the results from Column 1 of Table 2 as they apply to Durango, a relatively small town in southwest Colorado. The city's Walk Score is 37. A project which increased the city's Walk Score by 1 point, to 38, would be a 2.7% increase in walkability. The model predicts this would translate into a 1.4% increase in retail sales per capita. In 2022, Durango's retail sales per capita were $97,558, the improvement in Walk Score would raise retail sales per capita to $100,192. In general, the nature of a percentage change in a town's Walk Score depend on the town in which it occurs.

Home value is found to have a positive, and statistically significant relationship with retail sales. Again, consider Durango as an example. If the town's Zillow Home Value Index increased by 1%, from $688,623 to $695,509, retail sales would be expected to increase by 0.6%. Given that home prices in many towns in Colorado have increased dramatically since 2020, these changes can have large effects. For example, from December 2023 to December 2024, home values in Durango increased by 2.6% which would lead to a predicted 1.6% increase on retail sales.

Column 2 of Table 2 presents the results when the urban dummy variable is included. Urban equals one for towns in urban areas and zero otherwise. It is not predicted to be statistically significant. The inclusion of Urban does not alter the baseline model's implications. Statistically significant parameters remain so, and the estimated coefficients are relatively stable. Walk Score's estimated coefficient increases by 0.04 and Home Value's does not change. The adjusted *R*-squared increases by 0.01 suggesting that the model's explanatory variable increases marginally. As Stock and Watson (2019) note, stable coefficients are one sign that omitted variable bias may not be present.

To test whether transportation in general impacts retail sales, an *F*-test of the joint significance of Walk and Bike Score's coefficients. This test was conducted for the model presented in Column 2 of Table 2. The calculated *F*-statistic = 16.54, *p*-value = 0.00. The null that the coefficients are equal to zero is rejected suggesting that transportation choices, in the form of biking or walking have a meaningful relationship with retail sales. While only Walk Score's coefficient is statistically significant, it would be erroneous to conclude that transportation choices are irrelevant to retail sales.

To determine the impact of being a "resort town" on retail sales, three dummy variables were created. These dummy variables capture a town's distance from a ski resort. As discussed in Data Overview, many resort towns are rural, but their economies are unlike non-resort rural towns in Colorado. As global travel destinations, their reliance on tourism is unique. The results from these estimations are presented in Columns 3 – 5 of Table 2. Resort_30 equals one if a town is within 30 miles of a ski resort, and zero otherwise. Resort_20 and Resort_10 have the same interpretation, with the mileage threshold being 20 and 10 miles, respectively. The inclusion of these variables does not alter the model's R^2, adjusted R^2, and overall *F*-statistic in a notable manner.

Two themes emerge from the inclusion of the resort dummy variables. First, the urban dummy variable becomes statistically significant, while not being in Column 2. This could be due to a few factors. It is possible that the baseline specification suffers from omitted variable bias. We do not believe this is the case, as estimates of the slope coefficients are relatively stable across the various specifications. Multicollinearity is another possible cause, but again, we do not believe there is evidence to suggest the model suffers from this problem. The largest correlation, in absolute value, between Urban and any other explanatory variable is -0.23, the correlation between Urban and ln_WalkScore. Urban's largest correlation with a resort variable is -0.16, with Resort_20. A small correlation is typically not indicative of multicollinearity. As such, we conclude that the urban versus rural designation is an important driver of retail sales. Considering Urban's estimated coefficient in Column 3, an urban town is predicted to have 19% higher retails sales per capita than its rural counterpart. Clearly an economically significant result.

The second theme that emerges is that the resort variable increases in absolute value with a town's proximity to a ski resort. The largest estimated coefficient is 0.70, for towns with a ski resort within 10 miles. In these towns, retail sales are expected to be 70% higher than in towns without a ski resort within 10 miles. The findings in Columns 3 – 5 suggest that structural factors play an important role in generating retail sales. At the margin, towns have little control over whether they are in an urban area or not. While some towns could possibly add a ski resort, the cost and logistics of doing so would not be trivial. Additionally, our dummy variable does not distinguish between the quality of ski resorts, simply proximity. It is unlikely that simply building a ski resort close to a town will automatically result in an increase in retail sales of 70%.

The resort's appeal to visitors, snowfall, quality of terrain, competition with other resorts, etc. would all be relevant considerations.

Our results provide an estimate of a particular benefit, in terms of increased retail sales that could be evaluated against the cost of infrastructure projects devoted to bikeability, walkability, or multimodal transportation. There are many ways in which a city may improve its multimodal transportation. Improvements that would likely require minimal expenditures include painting existing thoroughfares to include sharrows (a symbol on road surfaces indicating the presence of cyclists) or increased crosswalk times to allow bikers and pedestrians to arrive at their destination in less time. More expensive initiatives would include investing in pedestrian and bicycle specific infrastructure such as bike lanes. More significant efforts may entail redesigning a downtown area to be a pedestrian only mall. Such a change would have a very large impact on the town's Walk Score and could potentially increase retail sales dramatically.

Before offering a conclusion, it is important to remind the reader of some of the study's limitations. As the sample is Colorado towns with populations greater than 1,000, results and conclusions may not be applicable to towns in other states. Specific communities have their own needs, challenges, strengths, and weaknesses which they must work around, and this general relationship is only a starting place from where additional research would be needed for any specific goal or project. Additionally, we were not able to account for public transportation in our analysis, an important aspect of multimodal transportation. Finally, the reader is reminded of the discontinuity in the sample. Due to Walk Score's proprietary data, observations from both 2022 and 2024 are included in the sample. In the absence of large changes in Walk or Bike Scores, this weakness ought not to limit the study's validity. The results become more tentative if large scale projects have been undertaken over this time frame.

Conclusion

This study contributes to the literature establishing the relationship between bikeability, walkability, and economic outcomes. By analyzing towns in Colorado, results specific to these economies can be derived. A positive relationship was found between walkability, home values, urban location, being a resort town, and retail sales per capita. The largest impact on retail sales was found for resort towns. The estimated magnitude of being a resort town, compared to a non-resort town ranged from 44% to 70%, increasing with proximity to a resort. Urban towns benefit tremendously from their location, they have approximately 20% higher retails sales than their rural counterparts. Beyond these structural considerations, walkability and home values also have statistically significant relationships with retail sales per capita. A 1% increase in home value is expected to increase retails sales between 0.48% - 0.61%, depending on which specification is applied. Finally, a 1% increase in walkability is expected to increase retail sales between 0.49% - 0.57%. All specifications find a positive relationship between home values and retail sales per capita. This suggests that home value appreciation has not crowded out retail spending at the local level, an important finding considering the large increases in home prices since the end of the COVID-19 recession.

The models' findings provide estimates of a benefit the business community may incur from local improvements in non-car transportation. They also highlight the importance of structural factors, such as being in an urban area or near a ski resort. As communities devote time, money, and energy to local economic development, multimodal transportation ought to be part of the host of initiatives they consider. Multimodal transportation has important benefits for health, environmental quality, and the economy. By lowering the costs of transportation, it can make our communities a bit more equitable for those that call these places home.

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Appendix

Figure 1A. Retail Sales Per Capita versus Walkability

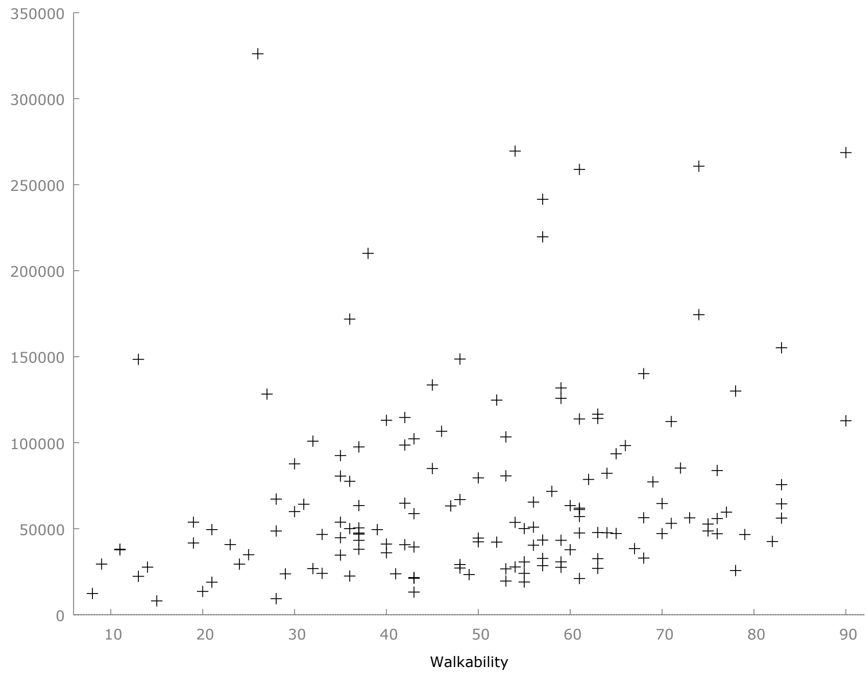

Figure 2A. Retail Sales versus Bikeability