

WHEN WALMART LEAVES SMALL TOWNS:  
VULNERABILITY, FOOD INSECURITY, AND COMMUNITY RESILIENCE

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In Partial Fulfillment

of the Requirements

for the Degree Doctor of Philosophy

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by

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

WHEN WALMART LEAVES SMALL TOWNS:  
VULNERABILITY, FOOD INSECURITY, AND COMMUNITY RESILIENCE

presented by Yanu Endar Prasetyo,

a candidate for the degree of doctor of philosophy,

and hereby certify that, in their opinion, it is worthy of acceptance.

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## DEDICATION

I dedicate my dissertation to my parents and family,  
especially to my wife, Tita, my son, Arafa, and my daughter, Afira.

## ACKNOWLEDGEMENTS

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## ABSTRACT

Walmart store closures, especially in rural areas, seem to be continuing since the company is moving forward in serving its urban customers and investing heavily in its digital features and markets. If this scenario happens, then many townspeople in a rural area will lose their only Walmart store, which has been part of the town for decades. There are many studies on the impact of Walmart's entry and presence in towns. However, investigating the effects of Walmart when they leave small towns is still rare. For this reason, this study is focused on addressing the impact of Walmart store closures in small towns in Missouri. The purpose of this study is to identify factors affecting the residents' perception of and response toward the impact of Walmart's store closure in Rural Areas.

Our conceptual framework is designed to assess household vulnerability and incorporate food insecurity factors to capture how vulnerability and resilience in rural communities change because of the closure of a Walmart store. This approach may help us better understand the linkages between community vulnerability and community resilience. Using a mixed-method design, we explored the residents' perceptions, opinions, and experiences regarding the closing of Walmart. Data from both the qualitative phase (observation, semi-structured interview, group discussion, and document analysis) and quantitative phase (community-based drop-off and pick-up surveys) of this study then mixed in the final analysis to provide a more detailed and complete description of the effect of Walmart store closures in rural Missouri.

We found that people were overwhelmingly disappointed and angry when Walmart closed in their area in 2017. Most residents said they felt disappointed (46%) and angry (41%) about Walmart's decision. There was a change in households' attitudes and shopping habits after Walmart left these towns, including a significant decline (54.9%) in shopping frequency among residents who often shop at Walmart. Not having Walmart in town also gave a sense of losing pride in being part of the town. When Caruthersville and Piedmont still had Walmart in town, it became the center of community for the surrounding towns and the entire county.

The number of households that fall into vulnerability categories (very low-vulnerable, low-vulnerable, vulnerable, and very vulnerable) is calculated and obtained from Categorical Principal Component Analysis (CATPCA). The data showed that most households fell into a vulnerable (39.8%) and low-vulnerable situation (34.6%) after Walmart left and were able to cope with this stressor. Households in the neighboring towns (Patterson, Williamsville, and Greenville) that were 10-15 miles from Piedmont also had a high percentage of vulnerable groups (47.6%) and very vulnerable households (6.5%). Based on this study, the Walmart store's closure in Piedmont had a bigger impact on both the households within the host town and their neighboring towns.

Our findings also confirmed that many residents in these areas rely on government assistance programs, especially SNAP (Supplemental Nutritional Assistance Program), the most extensive federal nutrition program in the U.S. About 43.7 percent of households in Caruthersville, 25.5 percent of households in Piedmont, and 24.4 percent of households in the neighboring town are SNAP recipients. These findings further prove that SNAP recipients and community food bank/pantry users were more sensitive to

Walmart's store closure. While SNAP benefits provided valuable support to many households, the retail mobility—increased proximity to small retailers and decreased proximity to many large ones (Walmart) —would negatively affect townspeople. This study suggests that Policymakers and public health experts need to work closely to ensure healthier and more equitable food systems since small retailers may provide limited access to fresh and healthy foods. Future research can also evaluate the impact of existing small retailers - that authorized for SNAP benefits - on the entire health and well-being of the rural community.

## I. INTRODUCTION

When news about the closure of 154 Walmart stores came in 2016<sup>i</sup>, one supercenter in Winnsboro, South Carolina (store number 2606) was included in the list<sup>ii</sup>. Residents in this small town were shocked and disappointed. It was the second time Walmart had hurt and disrupted the economy of this small town. Back in 1998, when Walmart arrived in Winnsboro, many small mom-and-pop stores were closed because they could not compete with Walmart. At that time, the small town had three grocery stores and two department stores. By the time Walmart left Winnsboro in 2016, only one grocery store remained<sup>iii</sup>.

Like Winnsboro, the entry of Walmart into McDowell County, West Virginia, had a profound impact<sup>iv</sup>. McDowell County is located in the Appalachian region. People still remember the feeling of excitement and expectation as workers stocked the supercenter for the very first time, turning it in just twenty days from an empty building into a community shopping center. People come from all over the area, even from neighboring counties and far beyond. Unfortunately, the expectation that Walmart would stay in McDowell County forever proved illusory<sup>v</sup>. The big box store has now gone.

Stories like those in Winnsboro and McDowell County become familiar stories throughout small towns and rural areas in the Midwest, along with the retail apocalypse trends that have no signs of stopping in recent years. In Mississippi, Walmart closed six stores in Belmont, Mantachie, Sardis, Walnut, Derma, and Nettleton in 2016<sup>vi</sup>. The Sardis Walmart Neighborhood Market held its grand opening a year before. The size of the store was between 12,000 and 15,000 square feet. In the year after it opened, Sardis saw sales

tax increase by 25 percent. A similar thing happened in Corning, Arkansas<sup>vii</sup>. Residents were shocked by the news of Walmart closing in Corning. Those residents gathered at the Walmart in Corning at 7:00 p.m. on June 23 to host an event in an attempt to save the store from closing. Several local churches organized to try to keep Walmart open in the Clay County town. The closure impacted around 60 employees. Here is the complete statement from Walmart:

The decision to close our Corning store is not an easy one, but, as a company, we are committed to continuing our growth and investment in Arkansas. We opened this store in 1978 and we are as proud today as we've ever been with how the store leadership and associates have served and contributed to the local community over the years. We are grateful to the customers who have given us the privilege of serving them in Corning. We look forward to continuing to serve them at other area locations and online at walmart.com.

In Texas, Walmart announced the closing of its Raymondville store, laying off about 110 employees<sup>viii</sup>. The store has been one of Raymondville's biggest sources of sales tax revenue since it opened in 2005. The loss will force city budget cuts. The city collected \$1.4 million in total sales tax revenue in the year before the store closed. Officials projected the city would lose about \$140,000 in annual sales tax revenue when Walmart exits the town. Walmart is closing the Raymondville store because it is the least profitable in the Rio Grande Valley, and the company said more than 95 percent of the U.S. stores are located within 10 miles of other Walmart stores<sup>ix</sup>. Walmart said it would give employees 60 days' pay if they could not transfer to other stores and severance to those eligible. In the U.S., the most targeted locations for closure are small-format stores called Walmart Express, launched as a test program in 2011. The layoffs helped drive Willacy County's unemployment rate to 12.8 percent, the Valley's second-highest jobless rate behind Starr County's 13.7 percent.

After 36 years, Walmart is also closing the Edna store (store number 474) in Texas. Walmart was one of Edna’s largest employers, a big taxpayer, and a 24-hour social hub in a community of about 5,700 people surrounded by rice fields, ranches, and grassland. As the *New York Times* reported in 2019<sup>x</sup>, Walmart has relocated about half of the 90 employees who worked in Edna to other area stores. However, not all of the employees have stayed with the company. Nationally, Walmart has achieved some of its best sales growth in years, transforming its Supercenters into digital retailing meccas, with self-checkouts and shelf-scanning robots working the aisles. Shoppers can order items on their phones and have the order delivered to their car in the parking lot. But the Edna store, a much smaller format built in 1982, did not offer those services. And with several Supercenters within roughly 25 miles, Walmart no longer needed Edna.

Table 1. Walmart store closures in rural and micropolitan areas<sup>xi</sup>

Location (town/city)	County	State	Type	Date	Population 2000	Population 2010	Change
Caruthersville	Pemiscot	MO	Discount store	2017	6,760	6,168	-592
Piedmont	Wayne	MO	Discount store	2017	1,986	1,977	-9
Raymondville	Willacy	TX	Neighborhood store	2016	9,760	11,284	1,524
Edna	Jackson	TX	Discount store	2018	5,899	5,499	-400
Mantachie	Itawamba	MS	Neighborhood store	2016	1,107	1,144	37
Cedarville	Crawford	AR	Neighborhood store	2016	1,133	1,394	261
Corning	Clay	AR	Discount store	2018	3,606	3,377	-229
East Norriton	Montgomery	PA	Discount store	2019	13,211	13,590	379

As reported by the media and in the Walmart annual report, Walmart has already closed at least 22 stores across 14 U.S. states and Canada in 2019<sup>xii</sup>. Caruthersville’s and Piedmont’s stores in Southeast Missouri are two of those who were not fortunate enough to survive this new policy. On Friday, October 21, 2016, Walmart notified its employees in Caruthersville that the store would be closing in January 2017.

After careful review of several factors, we have decided not to renew the lease at our Caruthersville and Piedmont stores. We care deeply about our associates impacted by this decision, and our priority is to take care of them. Our goal is to find them as many opportunities to continue to serve our customers as possible (*Pemiscot Press*, Wednesday, October 26, 2016).

This announcement was shocking news for the employees and the communities of both small towns. Walmart has been a long-standing employer in the area since 1977 in Caruthersville<sup>1</sup> and 1987 in Piedmont. Not only does the store employ many people, but it is also a significant tax base for the local community. The company plan is focused on winning with stores, deepening its digital relationships with customers, and enhancing critical capabilities through technology and data for the next generation supply chain. Walmart said they conducted a thorough review of stores worldwide, taking into account many factors, including financial performance, to make the decision.

These trend of Walmart store closures in rural areas seem to be continuing over the next couple of years since the company is moving forward in serving its urban customers and investing heavily in its digital features and markets<sup>xiii</sup>. Another reason for closures is the age of many store buildings, especially in the Midwest area. These older buildings were mainly built with a Discount Store format (smaller than a Supercenter), located in rural or small towns, and were built between 1970-1990 (see Figure 1).

Walmart needs to decide whether they convert the Discount Stores to Supercenters or create a new Supercenter nearby and close the older Discount Store. If Walmart decides to close the Discount Stores, then townspeople will lose their only Walmart store which

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<sup>1</sup> Before Walmart entered the area, there were several businesses in Caruthersville in the 1960s. Barbara Lane Meales, from *Pemiscot Press*, did research on this and made a list of those businesses: Hayden Rexall Drug (located at 1200 Ward), Margie's Variety & Baby Wear (1202 Ward), The Pemiscot County Welfare Office (1204 Ward), The Ark Mo Power Company (1205 Ward), Al's Sandwich Shop (1206 Ward), Rachel's Gift Shop (1207 Ward), Robert Wilks Grocery (1210 Ward), Dixie Cream Donut Shop (1212 Ward), and Overstreet Laundry & Cleaners (1223 Ward).

has been part of the town for decades. As a source of low-price food and products, a lack of big retailers like Walmart seems to be the next crisis for rural communities across the Midwest.

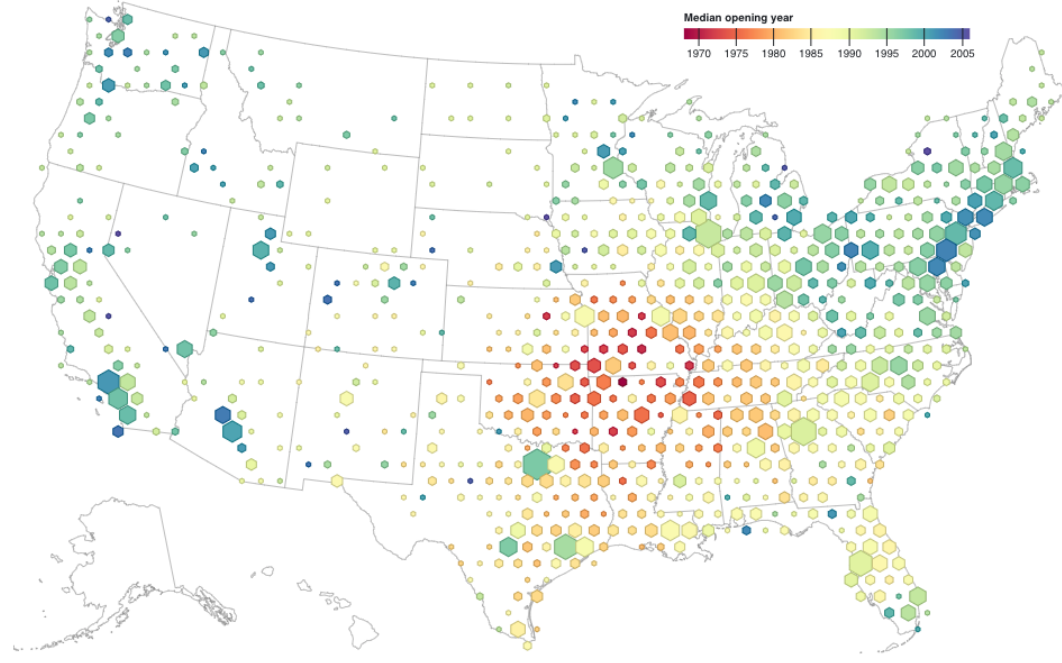


Figure 1. Walmart stores in the U.S. (2020) according to the store's median age<sup>xiv</sup>.

Walmart is well-known for having positive impacts (i.e., lower prices, increasing business efficiency, providing jobs, creating new industry areas) for a city and its residents (Cleary & Lopez, 2014a). But at the same time, Walmart is also well-known for negative impacts such as an increase in obesity rates (Courtemanche & Carden, 2011), poverty rates (Goetz & Swaminathan, 2006), and driving out local entrepreneurs or small establishments at the community level (M. J. Hicks, 2009). With the promise of and capacity to give lower prices for everyday items, Walmart seems successful in attracting people from different social classes and income levels to meet their daily needs. That is

why the remarkable expansion of Walmart has drawn the interest of academia in many disciplines, from economists, sociologists, geographers, and politicians to historians, engineers, and opinion leaders for decades (Newman & Kane, 2014). This research explores and investigates the empirical impact of Walmart store closures at the micro-community level to fulfill this gap within the literature about the effect of Walmart.

There are many studies on the impact of Walmart's entry and presence in towns. However, understanding the effects of Walmart's presence on local areas is still accompanied by the difficulty of obtaining complete blanket conclusions (Jia, 2008). On the other side, the study of Walmart's impact when they leave town is still rare. Many reports of the problems that arise after Walmart closes were covered by the media but still lack attention from academia. During the systematic review process (see chapter II), we did not find any research publication focusing on Walmart store closure's impact. A search for research publications on Scopus using the keywords "Walmart," "closure," and "exit," yielded no results. This points to a lack of study of the reverse impact of Walmart, both for a community and the country.

While many towns in the rural U.S. struggle with the persistent problems of poverty, lack of infrastructure, and declining population, now they are facing another crisis in losing larger retailers like Walmart. The permanent closure of Walmart means losing a source of jobs and revenue. It is important that this socioeconomic downturn in rural areas is captured scientifically to find any recommendations or solutions for rural people if possible. This study is focused on addressing the impact of Walmart store closures in small town Missouri as an example of explorative research, especially from a rural sociology perspective. The purpose of this study is to identify factors affecting the

residents' perception of and response toward the impact of Walmart's store closure in Rural Areas. For this reason, we developed one main research question and three sub-questions:

Main research question:

What happens when Walmart leaves a town and how do the residents perceive the closure of the Walmart store?

Sub-questions:

1. Which subset of the population is vulnerable to the impact of Walmart store closures?
2. Does Walmart's store closure have a relationship to a household's food insecurity status?
3. What are the effects of household demographics and socioeconomic characteristics on the perceived impacts of Walmart store closures on community resilience?

## II. LITERATURE REVIEW

Since its first stores opened in Bentonville, Arkansas, in 1962, Walmart has become the largest and most prominent retail company in the U.S. and the world. By 2017, Walmart had 3,522 Supercenters and more than 1,000 stores or Clubs located across the United States. Approximately 140 million customers shop at Walmart per week (Walmart annual report, 2017). This means more than 43 percent of U.S. people visit Walmart regularly. Based on data from Kantar Retail and Consulting (2016), the demographic profile of U.S. Walmart customers (on average) is: white, female, 51-years-old, with an annual income of \$56,482.

In 1987, Walmart opened a larger store which combined a grocery store, a merchandise market, and other services such as restaurants and video rental stores. The first Walmart Supercenters opened in 1988 and combined the discount outlets and grocery stores. Hundreds of Supercenters were opened during the 1990s under the direction of David D. Glass who took over as CEO and president in 1988. The Walmart Neighborhood Markets were rolled out mainly to compete with traditional grocery stores and convenience stores. Walmart Neighborhood Markets are smaller than Supercenters but have pharmacies, liquor stores, a deli, a bakery, and a photo shop. In 1993 Walmart introduced the Great Value line which is the largest food brand in the U.S. in sales and volume.

Walmart's grocery category is the largest of the company's six merchandise units. The grocery business includes meat, produce, household chemicals, and pet supplies. Walmart thrived during the latest recession because its prices for food, pharmacy,

household goods, and renovation goods made it more appealing to its core customer base, households with an income under \$70,000. Walmart also pursued its plan to expand in urban areas despite opposition from labor unions. In just 30 years, Americans transitioned from visiting produce and farm stands, independent retailers, or even the supermarket for their grocery needs, to shopping for food at Walmart. In fact, grocery sales now account for over half of Walmart's total annual sales, totaling \$200 billion each year (see figure 2).

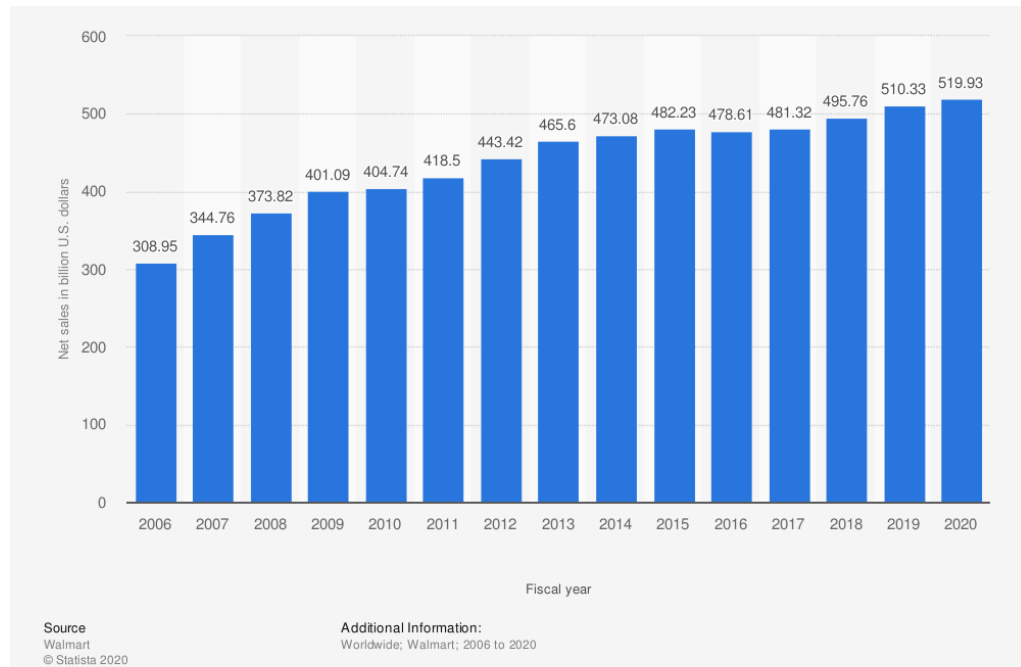


Figure 2. Walmart's net sales worldwide (2006 to 2020) in billion USD.

While Walmart does not have a strong presence in major cities on the West Coast and in the Northeast, data showed 90 percent of Americans live within a fifteen-minute drive of a Walmart store. Walmart is not only an easy choice (one-stop center) and often an accessible location, but also a cultural event and experience for the American family

(Carden & Courtemanche, 2009). People meet and interact in this space during their shopping. With the promise and capacity to give lower prices for everyday things, Walmart seems successful in attracting people from different social classes and income levels to meet their daily needs (Hwang & Park, 2016). Walmart has become an integral part of American culture. Some economists believe the Walmart expansion has created significant advantages for consumers by providing more choices, lower prices for goods, and stimulating local economic growth (Cleary & Lopez, 2014b). However, other studies show Walmart influences an increase in crime rates (Wolfe & Pyrooz, 2014), obesity rates (Courtemanche & Carden, 2011), poverty rates (Goetz & Swaminathan, 2006), and drives out local entrepreneurs or small establishments at the community level (M. J. Hicks, 2009).

However, Walmart is not only the world's single largest retailer and private employer, it is a crystallization and an agent of a broader paradigm shift toward "securitization" (Haiven, 2013). The concept of securitization ties together, on the one hand, the increasingly speculative and financial character of global capitalism and its influence on daily life and, on the other hand, the trend toward surveillance, security, and militarization. Walmart's power and scope are dramatically intensified. Walmart dominates the global economy and profoundly saturates everyday life. The other side of securitization is the increasing concern over securing space in societies where notions of the public sphere and civic participation have collapsed into isolated consumer individualism and a culture of fear.

On the supply and production side, Walmart's ability to pressure and squeeze its suppliers, for example, is quite popular. Walmart dominates almost 30 percent of the U.S.

household staples' market, from toothpaste to paper products. Walmart's suppliers or vendors have no choice but to follow the rule of the game. As one of the "category killers," Walmart has a tremendous advantage by forcing producers to engage in various activities that benefit Walmart, such as paying suppliers only after the product is sold at retail, requiring vendors to use new inventory management technologies, etc. This is what Thomas & Wilkinson (2010) call the "distribution trap." Walmart's massive pressure for price reductions causes the domestic operation cost to increase. This pushes suppliers to chase the cheapest labor around the world. This distribution trap is almost impossible to get out of.

Walmart is very advanced in the management of goods shipment. Walmart owns their own fleet of trucks to move goods quickly and cheaply from distribution center to store. Walmart has a powerful control over its suppliers by using a retail-link system that was implemented in 1991 (Mayhew, 2008). This system allows suppliers to get daily updates on their selling quantity via the internet. Suppliers and associates can also download purchase orders and check other aspects of their contract with Walmart. The retail-link system updates data eight times per day, so suppliers can respond quickly. In short, the monopsony of Walmart is a result of their ability to demand lower costs, tagged products, implementation of radio-frequency identification, and to place orders in specific shipments in its distribution center. A massive company like Walmart provides the most familiar form of the late twentieth century's new capitalist culture. With its fearsome market power, technological sophistication, low wages, and low-price business model, Walmart sets an economy driven by distribution and retailing rather than manufacturing (Hamilton, 2008).

As consumers are expected to pay low prices for necessities, workers' wages stagnate, and agribusiness assault has sprouted in rural areas. Since 1988, when Walmart entered the grocery business by opening its first supercenter, it has been a significant catalyst in the bankruptcy of 27 market chains. Financial services and wholesalers are affected directly by Walmart. More than half of Walmart's annual imports from China are already sourced directly through its global procurement function. Manufacturers have been forced to negotiate deals based on net cost alone. While Walmart creates more than 100,000 new jobs every year, it forces competitors to cut just as many. Because of that, more than 200 Walmart sites have been blocked by local communities across the U.S. at the community level (Marquard, 2007).

Because of its power and size, the “Walmart empire” is not only revolutionizing the landscape of industrial organization and logistics but changing shopping behavior and American diets (Bonanno, 2010). As a primary source of low-price and fresh food for people in small-town and rural areas, the closure of Walmart is potentially harmful to the community. Individual and households are exposed to multiple risks and consequences such as loss of jobs and access to fresh-healthy food, an increase in price for food and household items, higher expenditure for a longer drive to get groceries, and the knock-on effects for local businesses.

The Walmart annual report data from 2001 to 2020 showed that the number of Supercenters increased dramatically from 888 stores in 2001 to 3,571 stores in 2020 (402.1%). These Supercenters are mainly located in urban and metropolitan areas. In contrast, the number of Discount Stores declined dramatically from 1,736 stores in 2001 to only 376 stores in 2020 (-461.7%). There were 1,360 Discount Stores closed

permanently or converted to other types of stores in a twenty-year period. Many Walmart Discount Stores are located in rural areas surrounded by small towns. While the number of Clubs is relatively stable, Neighborhood markets and other small format stores increased from 19 in 2001 to 809 in 2020.

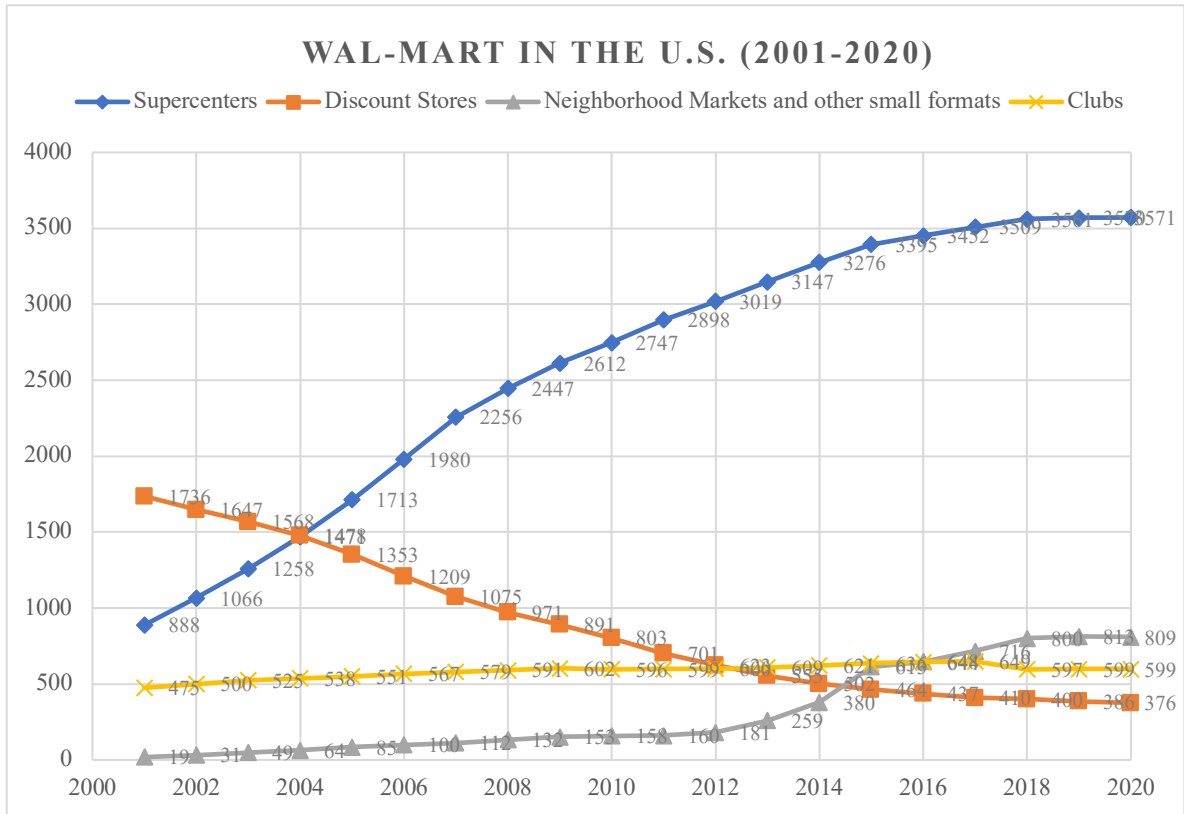


Figure 3. Walmart stores in the U.S. 2001-2020. (Source: Walmart annual report)

## 1. THE WALMART EFFECT: A SYSTEMATIC REVIEW

In this research, knowledge of the Walmart effect has been addressed and examined by way of a review of peer-reviewed journal publications in scientific databases (Scopus, Web of Science, and CAB Direct). This systematic review and meta-analysis examined studies related to the quantitative measurement of and qualitative

studies of the Walmart effect. A systematic review was applied here to identify the main factors that have been studied in previous research of the Walmart effect. The aim of this systematic review is to analyze what variables and outcomes have been measured concerning the Walmart effect.

Three databases were used in the selection of studies. In the first, Scopus, we used multiple sets of keywords to obtain the most relevant articles related to the impact of Walmart. After trying out some keyword and phrases in Scopus, we selected our queries as follows: *“Wal-Mart OR Walmart OR Big Box Stores” AND “effect\* OR impact\* OR benefit\* OR positive\* OR negative\* OR detriment\* OR global\* OR local\**. We limited the results to peer-reviewed journal articles and English language only. Scopus returned 146 results. From these results, 120 articles (82.19%) were related to the study of Walmart and 26 articles (17.81%) were not related. Secondly, we examined Web of Science (WoS). We used similar keywords to query the WoS database. WoS returned 385 articles. The third database used was CAB Direct. Using similar keyword combinations, we received 70 articles related to the queries.

Selection of the articles was based on several steps related to the impact of Walmart. From the first-round selection (literature search in Scopus, WoS, and CAB Direct) we received 601 articles in total. From these results, we made a second-round selection by eliminating duplicate article results from those databases. As a result, we found 15 articles that were duplicates from CAB Direct and 50 articles from WoS. We found 64 articles in total that we were unable to access from the databases. Moreover, we reviewed each title and abstract and excluded those that did not have any relationship to the topic. We used criteria for inclusion in the second round as follows: (1) Does the

article have “Walmart” in the title? (2) Does the article have “Walmart” in the abstract? (3) Does the article have “Walmart” in the author’s keywords? Finally, we selected 254 (42%) of articles that were related to the topic of Walmart and did not use 218 (36%) irrelevant articles.

In the third-round selection, we separated articles that measured the quantitative and qualitative effect of Walmart. We used some criteria to exclude unrelated publications. From the 254 articles, we found 127 (50%) articles used qualitative studies and 9 (4%) articles used quantitative but were not related to social science or economic disciplines. In this phase, we found only 118 publications related to the quantitative study of the Walmart effect. We used these results as our sample study for the fourth and final round. In this final selection process, we used some criteria to exclude unrelated articles, mainly: (1) those that did not use Walmart as an independent variable (predictors) and (2) did not state a specific outcome/effect from the measurement. To the result, we added 9 other empirical case studies from the databases. Our final result was 54 articles of quantitative studies and 35 qualitative studies to be used in this meta-analysis study.

Within each article, we extracted three types of information. First, general information about the article (author, title, source, period, and location). The second area of extraction was discipline, and the third area of exploration was about the topic or field related to the Walmart effect. We will see the variation of Walmart as an independent variable that is used by the authors in their analysis or measurement. From this exploration, we created a summary of the data from the individual case studies and then synthesized the data to form an overview of the information (see table IV.1).

From the 54 total articles reviewed in this study, most of them (87%) study the Walmart effect in the U.S. The dominance of U.S.-based research might be influenced by the fact that the U.S. is the “birthplace” and “home base” of Walmart itself. The first Walmart store was opened in Bentonville, Arkansas in 1962 by Sam Walton and his family. From that one store in 1962, Walmart had 942 stores across the South-East and Midwest region of the U.S. in 1982. In 2017, Walmart had 11,695 stores in 28 countries. However, the quantitative studies of the Walmart effect outside the U.S. are limited. We have seven articles that study the Walmart effect in other countries such as China (Matusitz & Leanza, 2009), the UK (Ferne et al., 2006; Gielens et al., 2008), Central and Eastern Europe (Igan & Suzuki, 2012), Germany (Ferne et al., 2006), and Nicaragua (Elder & Dauvergne, 2015). The limited study in other countries outside the U.S. might be a place of opportunity for future research or studies of the Walmart effect.

Most of the articles (71.11%) we found were written on the subject of economics. The majority of the publications in this group use an economic modeling approach to measure the impact of Walmart. They were more likely to use secondary data from macroeconomic perspectives and used regression analysis or econometric models to answer research questions. The reason there are many articles about the economy is that Walmart is well known as the largest retail company in the U.S. and in the world. Because of its characteristic as a business entity, many economists try to study the Walmart phenomenon from their disciplines and perspectives.

However, some studies are more inter-disciplinary and focus on non-economic variables in their research, such as the social economy (Carden & Courtemanche, 2009; Goetz & Rupasingha, 2006; Keil & Spector, 2005), health and obesity (Borrescio-Higa,

2015a; Courtemanche & Carden, 2011), and so on. These social and economic articles discussed the Walmart effect related to social capital and income unemployment differential. There is a study related to the impact of Walmart on countywide poverty (Goetz & Swaminathan, 2006), urban economy (Merriman et al., 2012), and crime rates (Wolfe & Pyrooz, 2014).

Table 2. Summary of the meta-analysis of the Walmart effect.

	<b>Quantitative Studies</b>	<b>Qualitative Studies</b>
Queries	("Wal-Mart" OR "Walmart" OR "big box stores") AND TOPIC: (effect* OR impact* OR benefit* OR positive* OR negative* OR detriment* OR global* OR local*)	
Corpus/Database	Scopus, Web of Science, CAB Direct	
Exclusion and inclusion criteria	<ul style="list-style-type: none"> <li>• Only included quantitative studies of Walmart effect</li> <li>• Only included articles which used Walmart as independent variable</li> <li>• Added other empirical case studies (9 articles)</li> </ul>	<ul style="list-style-type: none"> <li>• Not on topic (Walmart)</li> <li>• Not social sciences</li> <li>• Not qualitative</li> <li>• Law disciplines</li> <li>• Not discussing the Walmart effect/Not relevant discussion</li> <li>• Duplicates of other case studies</li> <li>• Not socioeconomic-related background (authors)</li> </ul>
Number of articles (final)	54 articles	35 articles
Publications classified by territory/country	U.S. (87%), India (3.7%), others (9%)	U.S. (45.71%), China (11.43%), Global-Transnational (11.43%), Germany (5.7%), Honduras (5.7%), Mexico (5.7%), others (14.3%)
Publications classified by discipline of study	Economy (57.4%), Social Economy (11.1%), Sociology (7.4%), Economic Geography (3.7%), health (3.7%), political science (3.7%), agriculture economic and rural sociology (3.7%), others (9%)	Economics (20%), Sociology (20%), Anthropology (8.57%), Communication (8.57%), others (42.85%)
Publications classified by sources/journals (top 5)	<ol style="list-style-type: none"> <li>1. Journal of Urban Economics (11.1%)</li> <li>2. Economic Development Quarterly (7.4%)</li> <li>3. Agribusiness (5.5%)</li> <li>4. Journal of Marketing Research (5.5%)</li> <li>5. Social Science Quarterly (5.5%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Environment and Planning A (5.71%)</li> <li>2. Journal of Economic Geography (5.71%)</li> <li>3. Agriculture and Human Values (2.86%)</li> <li>4. China Journal (2.86%)</li> <li>5. Community Development Journal (2.86%)</li> </ol>

	Quantitative Studies	Qualitative Studies
Publications classified by level/area of studies	<ol style="list-style-type: none"> <li>1. States (31.5%)</li> <li>2. County (25.9%)</li> <li>3. Others (12.9%)</li> <li>4. Countries (11.1%)</li> <li>5. City (7.4%)</li> <li>6. Metro (7.4%)</li> <li>7. Non-Metro (7.4%)</li> <li>8. Small Town (3.7%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Country (57.1%)</li> <li>2. State (17.1%)</li> <li>3. Others (8.6%)</li> <li>4. City (5.7%)</li> <li>5. Metro (2.9%)</li> <li>6. Non-Metro (2.9%)</li> <li>7. County (0%)</li> <li>8. Small Town (0%)</li> </ol>
Gaps in literature	Overemphasized on the economy, U.S.-centric, limited study on rural/non-metro areas.	Overemphasized on the economic effect. Limited study on social or cultural impacts. Limited study in rural and non-metro areas. Limited studies on the Walmart effect on food security.

*Journal of Urban Economics* was most likely to publish on the topic of the Walmart effect (13.3%). This finding gave us different results from the common assumption that Walmart operates in mostly in rural areas. This publication focusing on urban economics is interesting because many researchers measure the impact of Walmart in an urban context. Consistent with the journals, the level of study or the research scope of the Walmart effect in a rural setting (non-metro area) was very small, only two publications (3.7%) in our list. *Agribusiness*, *Economic Development Quarterly*, *Journal of Marketing Research*, *Social Science Quarterly*, and *Review of Regional Studies* have published some studies on the impact of Walmart. The diversity of these publications proves the Walmart effect is attractive to many different disciplines, not just economic journals. However, regarding disciplines, we can see the gaps of Walmart effect studies in non-economic disciplines, such as social, cultural, political, and others. This is an opportunity for a multi-disciplinary study about the impact of Walmart in the future.

Most of the publications in this study used secondary data for their quantitative analysis of the Walmart effect. Because of that, many articles performed their investigation on the state level (37%) and county level (31%). Walmart provided data and

information about the number of stores at the state and country level in their annual report. Analyzing the impact of Walmart at the state level is interesting for some researchers because it can help us see the big picture of this phenomenon and generalize the results. With thousands of stores across the U.S., it is possible to generate models and investigate the effect of Walmart, particularly in the economic field. We have two studies which analyzed the impact of Walmart's entry at the country level, in central and eastern Europa (Igan & Suzuki, 2012) and the UK (Gielens et al., 2008).

In the study of the Walmart effect, researchers used different types of independent variables to predict the impacts. We included publications that used Walmart itself as an independent variable. Although the articles used similar independent variables, there was still some variation. Some articles used Walmart entry (24.1%), but other articles were more specific on the year and location of the Walmart entry (16.7%), or the number of the Walmart stores (12.9%), and only used specific type of stores, such as Supercenters, as an independent variable (11.1%). Some studies also included other big box stores, such as Target, and analyzed the effect before and after Walmart entry (3.7%). In this publication area, we can see the gaps of Walmart effect studies in the non-metro (rural) areas and in the global effect of Walmart. Both are opportunities for further research about the impacts of Walmart.

The study found Walmart Supercenters' presence resulted in a price decrease, particularly in grocery for national brand goods at conventional supermarkets competing for a radius of 5 miles from the Supercenter (Volpe III & Lavoie, 2008). The lower price means more savings for customers and a low-income family can afford grocery products as well. Walmart decreases not only the grocery price but also the price of generic drugs.

The empirical data shows a significant reduction in the average price of medicines at Walmart pharmacies (Borrescio-Higa, 2015a) (Borrescio-Higa, 2015b). The impact of Walmart is not limited to the reduction of the price of groceries and drugs, but in the other areas as well. For instance, in a social context, it did not show Walmart reduces the social capital within the community. In contrast, Walmart increases social capital by providing a new community center and by reducing the amount of time and money that has to be devoted to primary consumption (Carden et al., 2009a).

Some studies found big-box entry had a substantial impact on employment growth. General merchandise big-box stores have a negative effect on smaller chain stores in the immediate and surrounding areas (Haltiwanger et al., 2010). A study in Chicago shows the probability of a store's closure was significantly higher for establishments close to Walmart stores (Merriman et al., 2012). The likelihood of closure fell off about 6% per mile in all directions. New Walmart store openings resulted in the loss of about 300 full-time equivalent jobs in nearby neighborhoods. Walmart and other big-box stores influence a decrease in the number of small stores but at the same time they impact the increase of land prices in the surrounding areas by almost 39% (Slade, 2018).

There is evidence that Walmart Supercenters increase both body mass index (BMI) and obesity, specifically for women, low-income married individuals, and those living in the least populous counties (Courtemanche & Carden, 2011). This study noted that Walmart seemed to influence not only obesity rates while decreasing social capital stocks, but also increased Medicaid expenditures by roughly \$898 per worker across the

United States. This means that Walmart employees tend to cause states to increase spending on Medicaid resources at about the same rate as other low-paid workers.

Walmart entry increases retail employment by 100 jobs in the year of entry, but at the same time, retail employment in neighboring counties declines by approximately 30 jobs, and wholesale employment in the entered county declines by a similar number (Basker, 2005). However, the short- and long-term effect tended to differ (Paruchuri et al., 2009). When Walmart enters an area, the entry rates of both competing and noncompeting businesses tended to fall, but then these patterns reversed over the longer term, with both entry and exit rates increasing above the levels before Walmart entry. Another study found Walmart's entry in Iowa had a significant impact on host town retail sales, with some groups experiencing significant increases while others saw declines in sales per capita (Artz & Stone, 2006; Stone & Artz, 2012). The presence of Walmart helped to expand and stabilize the local retail sector in rural Iowa as well.

One study found a contrast between the positive effect of Walmart entry on the tax rate in the adjacent municipality and the negative impact of Target entry on the tax rate in the neighboring city (Vandegrift, 2016). Compared to Target, the Walmart entry in the host municipality raised the equalized tax rate by about \$0.23 per \$100 of market value (about a 10% increase). In contrast, Target entry reduces the equalized tax rate in the adjacent municipality by \$0.14 per \$100 of market value or about 6.2 percent. Regarding social and cultural activities, the Walmart effect (per capita number of Walmart stores) on individual participation in many kinds of leisure activities is different depending on the type of the events. People's involvement in activities that involve goods which can be bought at Walmart was increased, but researchers did not see a decrease in

participation in the cultural activities unrelated to the stores, such as visiting an art gallery and or to a classical music concert (Carden & Courtemanche, 2009).

Another study found that Walmart does not influence the number of establishments in the retail sector (M. Hicks et al., n.d.). The analysis finds no sign of any variable which suggests that small establishments (mom and pop stores) are not affected by Walmart expansion. This finding may be contrary to the popular beliefs about Walmart. Walmart has had no statistically significant long-run impact on the overall size and profitability of the small business sector in the United States (Sobel & Dean, 2008). The researchers argue that the entry of Walmart might cause some individual businesses to fail, but these failures are entirely offset by the birth of other new small businesses.

Some researchers tried to explore the relationship between unappealing economic factors, for instance the relationship between Walmart and crime rates. Although this topic seems controversial, Walmart did not necessarily increase crime but did not decrease the crime rate either (Wolfe & Pyrooz, 2014). Another interesting relationship in the study of Walmart effect is its impact on individual values, such as whether Walmart's entry or presence makes people more conservative or liberal. Liberal groups argue that Walmart might use its power to promote conservative values. Oppositely, conservative people say Walmart has degraded traditional, family-based values by supporting LGBTQ commerce (Carden et al., 2009b). Using data from 1985 to 1998, a study shows that this relationship was not significant. Walmart did not paint the town "red" (more conservative), nor did it paint the town "blue" (more liberal). Walmart appears to be socially neutral and does not have a significant impact on an individual's values (Carden et al., 2009b).

Most of the previous studies overemphasized the economic effect and limited study on social or cultural impacts. Although Walmart claimed their market is in rural areas, most of the studies measured the impacts of Walmart in urban or metro areas. There are limited studies of the effects of Walmart in rural and non-metro areas. There are also limited studies on the Walmart effect on food security, a topic that seems important given that Walmart provides grocery and low-priced food for their consumers.

Moreover, there are limited studies which incorporate empirical case studies and surveys to gather local community perspectives toward Walmart, especially when Walmart closes leaves small towns. Most of the studies on the impact of Walmart tend to use secondary data and overemphasizes the economic effects. This research seeks to fill this gap in the literature, especially the lack of research on the impacts of Walmart store closures in rural small town areas. This study focuses on comparing five different towns in rural Missouri where Walmart stores were permanently closed.

## 2. WALMART STORE CLOSURE AND HOUSEHOLD FOOD INSECURITY

Many recent studies focused on low-income areas in which healthy foods are expensive, of poor quality, inaccessible, and this contributes to the rising rates of obesity and chronic disease (Shannon et al., 2018). The U.S. Department of Agriculture (USDA) defines food deserts as areas “where people have limited access to a variety of healthy and affordable food.” However, regarding the main factor of food deserts, the importance of Supercenters to the food buying habits of consumers and the structure of the grocery industry should not be underestimated (Wrigley et al., 2003).

Studies in public health and urban planning have applied both criteria—low-income status and low access to supermarkets—to identify food deserts (Jiao et al., 2012). For example, almost 70 percent of Walmart Supercenters are located outside urban areas, and most of Walmart’s major competitors have focused their market operations on urban markets. This suggests the potential for retail food restructuring may be more significant in nonmetropolitan than in metropolitan counties.

As a low-cost food source, a large grocery store like Walmart may have profound implications in many nonmetropolitan counties in the U.S. Most people in a rural area may depend on the availability of transportation. Low-income individuals and families, people with disabilities, and the very old and children may be disadvantaged if they do not live close to a grocery store or supermarket. For this reason, every policy change from food retailers such as Walmart would directly affect the nonmetropolitan economic structure and social changes.

Both in urban and rural areas, food deserts are usually associated with food insecurity. Food insecurity can be defined as a household-level economic and social condition of limited access to food. In 2019, 10.5 percent of households (13.7 million households) in the U.S. lived in food-insecure households, and 4.1 percent of U.S. households (5.3 million households) had very low food security (Coleman-Jensen, 2019). The measurement of food insecurity in the U.S. is based on a set of questions from the nationally representative Food Security Supplement, which since 2001 has been distributed each December as part of the Bureau of Labor Statistic’s Current Population Survey. The measure consists of 18 questions for households with children and a subset of 10 questions for households without children.

Food access, food deserts, and food insecurity are strongly related and complement each other in describing the food system and environment, especially the link to structural inequalities among geographic, economic, and demographic dimensions. Talking about food deserts would directly intersect with access to food retailers and affordability of food. Vice versa, measuring food access would portray food deserts and food insecurity in the area studied. Household food insecurity itself always depends on access to and availability of food. Here we can see that food deserts, food access, and food insecurity are concepts that cannot be separated. Using all three concepts together in this study can provide a comprehensive understanding of problems in the field.

Some questions remain about how food insecurity is distributed within a household and how the food distribution system influences food insecurity (Gundersen & Ziliak, 2015). As a developed country, The U.S. has an advanced food distribution system that has allowed for lower food prices. For this reason, research on how to further improve the food distribution system to address food insecurity is worth pursuing over several dimensions. For example, one could examine how the regulatory process affects food distribution from producers to food stores. Analyzing the food distribution system in underserved areas (food deserts) and describing the coping mechanisms of food-insecure households and the effect on family well-being is also worth pursuing (Leung et al., 2015).

### 3. COMMUNITY VULNERABILITY AND RESILIENCE

In the context of food deserts and poverty in a rural setting, the role of larger retail chains like Walmart has become significant in shaping people's habits and diet. Missouri is home to more than 100 food deserts, according to previous reporting by the *Missourian*

(April 14, 2021). While food insecurity affects urban and rural areas, residents in communities of color face additional barriers to establishing vibrant local food systems. Limited transportation options and few groceries stores result in few food options for many residents. When such constraints intersect with health status, age, and low income, it can be nearly impossible for residents to access affordable fresh food.

Food insecurity rates are usually higher in some specific circumstances, such as single-parent households, households with a disabled parent or child, and households at high risk of homelessness. Households with an adult smoker or an American Indian also tend to be food insecure (Kim-Mozeleski & Pandey, 2020). For rural older people, particularly those in remote areas, their exclusion from essential services, social relations, and civic activities is also higher than in urban areas with the same income level (Moffatt & Glasgow, 2009). Some communities in Bootheel, Missouri, even must cross state lines to access full-service grocery stores. That's perhaps a significant amount of money that could be put right back into the economy in Missouri.

According to the USDA, food deserts tend to offer sugary, fatty foods. The USDA also says that poor access to fruits, vegetables, and lean meats could lead to obesity and diabetes. However, this concept somewhat simplifies the reality of American diets. The actual explanations are multilayered and complicated. They're partly financial since healthy food costs more. Based on a meta-analysis study from Harvard School of Public Health (HSPH), eating a healthy versus unhealthy diet costs about \$1.50 more per day (2013). Another factor is geography. When poverty is persistent, introducing a supermarket to a food desert area does little to improve people's diets.

Being poor in the U.S. means having an income below a federal poverty threshold. Poverty thresholds were developed in the U.S. since the 1960s and are adjusted annually to account for inflation. Any family or individual must have the total sufficient income to purchase food, shelter, clothing, and other essential goods and services. The Office of Management and Budget (OMB) sets these basic needs. For example, in 2021, the poverty line for a three-person family with one child and two adults was \$21,960 and \$31,040 for a five-person family with two adults and three children. Pre-tax income and cash assistance are included in the income, but not for the welfare assistance, such as SNAP benefits and Medicaid. Suppose an area has a high poverty level. In that case, the solutions to people's poor diets are not only access to grocery stores or supermarkets, but the real answers lie in "upstream interventions" that address inequality: a higher minimum wage, stronger labor protections, more generous government benefits, and universal free school lunches (Rosenberg and Cohen, 2018).

While there's no single bullet solution to the impact of Walmart's exit, expert says that community gardening efforts can help communities become more connected and secure. Such self-reliant solutions often become invisible in discussions about the closure of larger retailers in rural areas. Community resilience can be defined as community's ability to deal with crises or disruption, i.e., social and economic downturn, natural disasters, or a broad range of other changes (Cohen et al., 2013). As a theoretical framework, community resilience is designed to explain how communities address adversity as a social process because not all communities respond differently toward crisis or disruption (Kulig, 2008). In other words, the severity of the loss is embedded within a web of individual, familial, and environmental risks, and protective factors

(Oltedal et al., 2004). However, understanding the nature of resilience is a challenging process that includes clarifying definitions since it's very difficult to separate resilience from its influences and consequences (Scott, 2013). This challenge is found throughout much of the literature utilizing the concept of resilience. We need to specify our resiliency model, and then we must define and measure it separately from the factors contributing to it and the consequences of its operation.

Mowbray developed a model of community resilience to describe neighborhood strengths that comprises both community protective factors (e.g., social capital resources) and community risk factors (e.g., economic disadvantage) with variables, such as access, that are proposed to moderate protective and risk factors and affect community resilience (Mowbray et al., 2007). The authors also contend that community outcomes, such as health status indicators, will be affected based on the presence of community resilience. The focus on the assets of such geographically bounded settings was appropriate. However, Mowbray's model is based on the historical context of addressing resilience by emphasizing risks and protective factors while not offering a fully comprehensive view of community resilience.

According to the metatheory of resilience and resiliency (Richardson, 2002), there are three waves of resiliency inquiry: (1) resilient qualities (resilience as a phenomenological identification of developmental assets and protective factors); (2) resiliency process (resilience as a disruptive and reintegrative process), and (3) innate resilience (postmodern and multidisciplinary view). The resilient qualities perspectives argue that personal strengths (self-esteem or self-efficacy) are significant factors of individuals' resiliency. The resiliency process suggested that resilient qualities are

attained through a law of disruption and reintegration. This has augmented to mean growth or adaptation through disruption rather than to recover or bounce back. This process applies to individuals, couples, families, schools, communities, and other groups (Richardson, 2002). The third wave of resilience inquiry argues that a force within everyone drives them to seek self-actualization, altruism, wisdom, and harmony with a spiritual source of strength (Richardson, 2002). This force is resilience (a self-righting mechanism), and it has a variety of names depending upon the discipline.

We need to build a resiliency model to determine the four sets of capacities: (1) economic development, (2) social capital, (3) information and communication, and (4) community competence. These influence the potential for community recovery post-disruption (Walmart entry or closure) by identifying a set of indicators that combine to capture pre-disruption capacities (Sherrieb et al., 2010). Embedded in the community resiliency theory are social, economic, and physical components such as infrastructure and the availability of various services. Another critical element of community resiliency is an individual's perceptions about his or her community which reflects social networks, social capital, and the past experiences of community members in various stressful situations (Cohen et al., 2013).

After Walmart leaves a small town, residents may experience feelings of uncertainty, anxiety, anger, and stress. We can see this in many online petitions that want to keep Walmart stores open. For this reason, we can describe the community's resiliency by capturing their subjective feeling and experiences and by explaining the external components mentioned above. Community resiliency is not always about a stressful period but is related to the individual's ability to function adequately in normal times.

Examining the ability to overcome an economic downturn (indicated by the closure of a Walmart store) would be related to all those factors across different levels: individually, community, or even a broader area. Using a rural risk and vulnerability framework, we will collect data along a continuum from a narrow focus of resiliency (individual characteristics) to a general focus on various environmental factors (Magis, 2010).

Community resilience includes several physical and social components (Cohen et al., 2013). To better understand the scale and relationships that interact in rural risk and vulnerability towards Walmart's entry and exit, we should identify each of the elements and concepts related to individual/family/community resilience. These three levels of resiliency are adopted from a socio-ecological model (Henderson et al., 2016). First, locus of control refers to an individual's perceptions of where the underlying responsibilities for life events reside. Individuals with an internal locus of control were less affected by crisis and felt more empowered. They took charge of their situations and were willing to put in the effort required to make positive changes.

Second, family resiliency is the ability of a family to respond positively to an adverse event and emerge strengthened, more resourceful, and more confident. Family is broadly defined as any combination of two or more persons brought together over time by ties of mutual consent, birth, or adoption who assume responsibilities for family functions together. Finally, social capital (community-centered) enables participants to respond and act together more effectively and increases the ability to use all resources during and after Walmart's exit. Social networks can help reduce difficulties in a potentially uncertain situation. Social support (collectivist orientation) can be separated

into two things: *received support* and *perceived support*, the belief that help would be available if needed.

### III. CONCEPTUAL FRAMEWORK

Our conceptual framework is designed to assess vulnerability and incorporate all factors and processes to capture how vulnerability and resilience in rural communities change because of the closure of a Walmart store. Place-based sociocultural, economic, and biophysical characteristics are important factors that constitute a structural backdrop for the causes and consequences of social and environmental changes, including personal experience, attitudes, and behaviors.

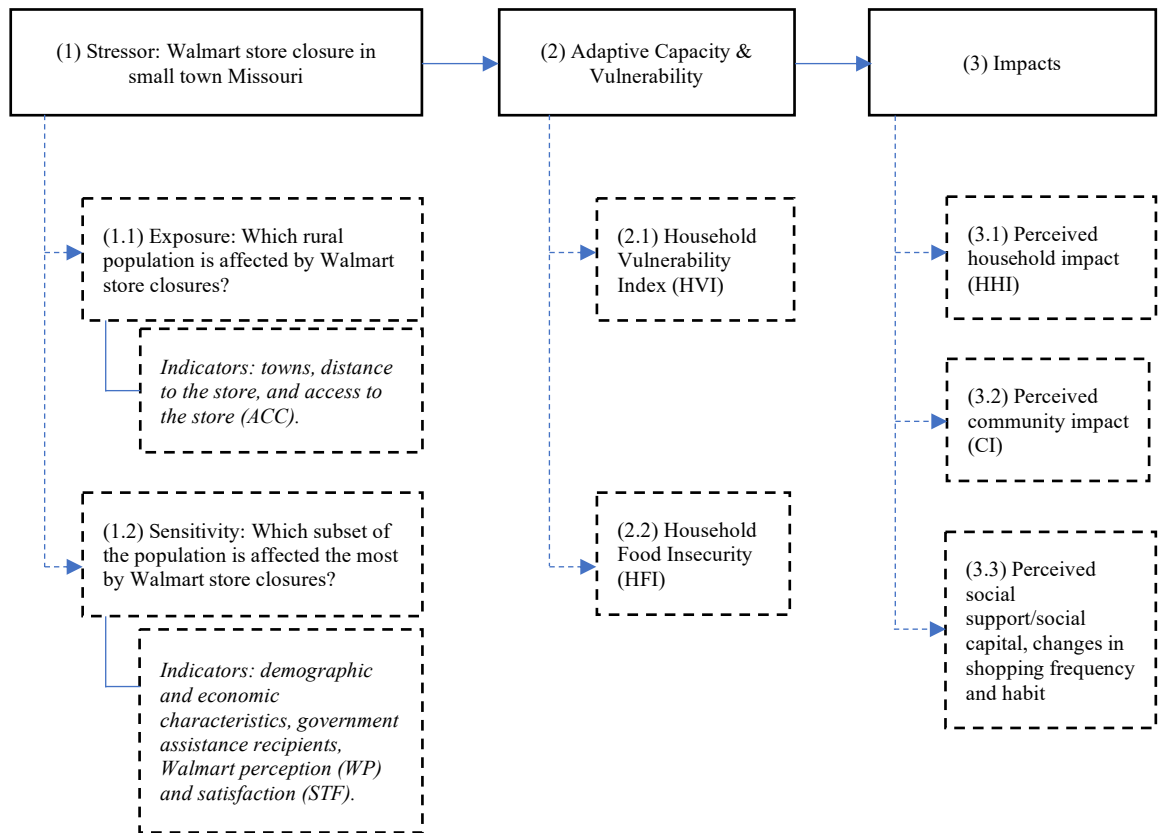


Figure 4. A conceptual framework of rural households' vulnerability. Adopted and modified from (Romero Lankao & Qin, 2011) and (Dwyer, 2004).

Understanding the vulnerabilities based on those elements and capacities that characterize local populations may help us better understand community vulnerability and improve socioeconomic resilience and adaptation due to the Walmart's exit in rural areas. In this study, a stressor can be defined as a stimulus that causes stress (Wang & Amato, 2000). There are various stressors that affect rural economic downturn, but the closure of a Walmart store is an obvious stressor that affects households and communities directly, especially in rural areas where access to convenience stores and low-price products is limited. Multiple or singular stressor exposure may be associated with poverty (Evans & English, 2002), including economic disruption from the entry, conversion, or exit of a Walmart store in particular areas.

The extent to which the subset of rural population or households are affected by the stressor (Walmart store closure) is an interesting topic to be studied. The rural community is always at risk of economic loss due to company policy change, especially from a major company like Walmart, who provides basic needs to the entire community. Sensitivity is the degree to which a subset of the rural population is susceptible to stressors based on demographic and economic characteristics (Saleh Safi et al., 2012). The meaning of vulnerability and sensitivity rely on the specific context in which they are used (Zacharias & Gregr, 2005). People could have very different risk sensitivity. In this study, sensitivity defined as the degree to which households respond to a Walmart store closure (positive or negative).

Vulnerability is a concept that refers to exposure to contingencies and stress and difficulty in coping with them (Chambers, 1989). This concept is related to risk, or the relative probability of a negative event or outcome within a given time period. Enquiry

into the cause of vulnerability is problem-driven, providing a history of vulnerability research that has arisen from three dominant research strands: food security and livelihoods, risk and natural hazards, and climate change (Adger, 2006). Vulnerability is place- and system-specific, contextualized, highly scaled, dynamic, and differential (Calgaro et al., 2014).

Vulnerability is largely determined by a lack of options due to unequal distribution of power and resources (Best, 2013). An individual's ability to anticipate, withstand, and recover from shocks over time is linked to access and entitlements to other factors, such as resources and capital. Underlying these unequal patterns are historically embedded power structures, cultural norms, and supporting ideologies and doctrines that influence chosen development pathways and bind the fabric of society. Human agency plays a critical role in influencing differential vulnerability patterns. Understanding why actors choose certain actions (including inaction) over others requires a deeper knowledge of people's habitus and the field (Mouzelis, 2008).

Vulnerability is not the same as poverty. Economic vulnerability can be measured in different ways. For instance, it can be measured as being above or below 150% of the poverty line. Those households whose income is below 150% of the poverty line for their household size are considered to be economically vulnerable. Those with household incomes above 150% of the poverty line are considered not economically vulnerable (Porterfield, 2001). Part of economic vulnerability is livelihood insecurity which is the antithesis of "sustainability" itself in the growing study of sustainable rural livelihoods. The causes of insecurity and shocks can be categorized in various ways, including: micro-level (ill-health, injury, old age, domestic violence, etc.), meso-level (extreme

weather, harvest failure, food price fluctuations, etc.), and macro-level (global recession, labor market risk, climate change, etc.) (Devereux, 2001). It has become commonplace to suggest that vulnerability operating at multiple scales raises questions about the overall sustainability of rurality itself (Marsden, 2009).

When “hazards” (in this case, the declining access to groceries and convenience stores) impact a group of individuals, they interact with the socioeconomic conditions of those people as well (Adger, 2006). This interaction of exposure either enhances or deepens people’s risk and vulnerability. However, risk perception is difficult to understand. Many factors have been proposed for the explanation of perceived risk. A common cause of perceived risk is the real risk (assessed risk). Risk as a feeling refers to our instinctive and intuitive reaction to danger. Risk as analysis brings logic, reason, and scientific deliberation to bear on risk assessment and decision making (Slovic & Peters, 2006). Moreover, there is also some over-estimation and under-estimation of risk (systematic deviation from the trends). In general, risks were perceived by the average person in a rather accurate manner (Menon et al., 2008). For this reason, the public’s risk perception was always multidimensional.

The risk target is critical in risk studies. However, many risks perception studies do not explicitly mention their target. These studies only ask respondents to rate “the risk” without further explanation. This means there is a probability of misunderstanding perceived personal risk, and it causes some uncertainty about the actual target in the study. In the present context, risk perception would be caused by attitude, not the other way around. In contrast, a conventional attitude theory assumes attitude is a function of beliefs and values. This model implies a different psychological functioning in risk

perception than in other models. Here, risk perception is a function of the properties of the hazards. Cultural theory, on the other hand, is very different. Here, risk perception is a reflection of the social context and individual experiences (Oltedal et al., 2004).

Household responses are primarily determined by their social vulnerability condition (combination of sensitivity and the capacity to reduce negative consequences), defined by socio-demographic factors (Qin et al., 2015). Adaptive capacity is a measure of the capacity of a system to respond to a given environmental hazard through mitigation, coping, survival, adjustment, or adaptation. Adaptive capacity reflects the resources available to the system and the accessibility to those resources either for protection from risks or for survival and coping when risks occur (Smit & Wandel, 2006). Individuals with higher income, higher education, and greater social status are usually more capable of protecting themselves or adapting to hazards than those with fewer resources. It is necessary to show the ways inequalities express themselves among different peoples and communities and what effects they have on vulnerability.

During times of crisis and socioeconomic change, kinship and community relations are vital to survival strategies in everyday life and adaptation to social change (Dershem & Gzirishvili, 1998). Informal social networks are a potential resource that can provide individuals and households with the exchange of food, financial assistance, and a pool of labor. Social connectedness and social status are social conditions that may reduce vulnerability. For rural people, the loss of jobs affects more than just their livelihood; they lose the infrastructure that has supported traditional patterns of family and community life for centuries. The ability of these communities (as a social system) to

absorb change of state variables, driving variables, and parameters and still persist are what we call community resilience (Janssen et al., 2006).

Community studies have long been a central feature of American social science. The early sociological trend was toward the ethnographic study of site-specific localities of relatively small population size (Luloff & Krannich, 2002). However, attention then turned to the quantitative and comparative study of urban places due to advances in technology and accessible secondary data. In-depth case studies became far less popular, and the richness provided by detailed community studies was lost. Perhaps, more importantly, reliance on secondary data sources contributed to the false belief that the small and rural community was nothing more than a microcosm of its urban counterpart. For this reason, community responses are important to measure in determining the impact of Walmart store closures in small towns. This study aims to examine the psychological and behavioral responses of the general community after Walmart store closures in rural Missouri. Community responses indicated perceptions of Walmart's presence and power as well as the impacts of Walmart store closures for households and the entire community.

## IV. METHODOLOGY

This study investigates the impact of Walmart store closures in rural America. By using mixed method design, we would like to explore the residents' perceptions, opinions, and experiences regarding the closing of low-priced food services (Walmart) as a stressor for rural households and communities. The first phase of this study is a qualitative exploration of the community's response, perception, and attitude for which qualitative data (document analysis, field notes, observations, content analysis, artifacts) will be collected. Findings generated from this first phase supported the development of a survey instrument for quantitative data collection from the population. The second phase of this study is a quantitative description of community perception and attitude regarding the impact of Walmart store closures in the area, as well as an assessment of household food insecurity and vulnerability status. Data from both the qualitative and quantitative phases of this study was then mixed in the final analysis to provide a more detailed and complete description of the effect of Walmart store closures in rural America.

Mixed method refers to an emergent methodology that advances the systematic integration of quantitative and qualitative data within a single investigation. This integration allows a more complete and synergistic utilization of data collection and analysis (Wisdom & Creswell, 2013). Mixed methods have several advantages and can be an ideal technique to answer this study's research questions. For instance, in the explanatory sequential design, qualitative data can be used to assess the validity of quantitative findings and the quantitative data can be used to generate the qualitative sample and explain findings from the qualitative data. Otherwise, in the exploratory

sequential design, qualitative inquiry can be used to develop quantitative instruments and generate hypotheses for testing in the quantitative component (Cameron & Miller, 2007).

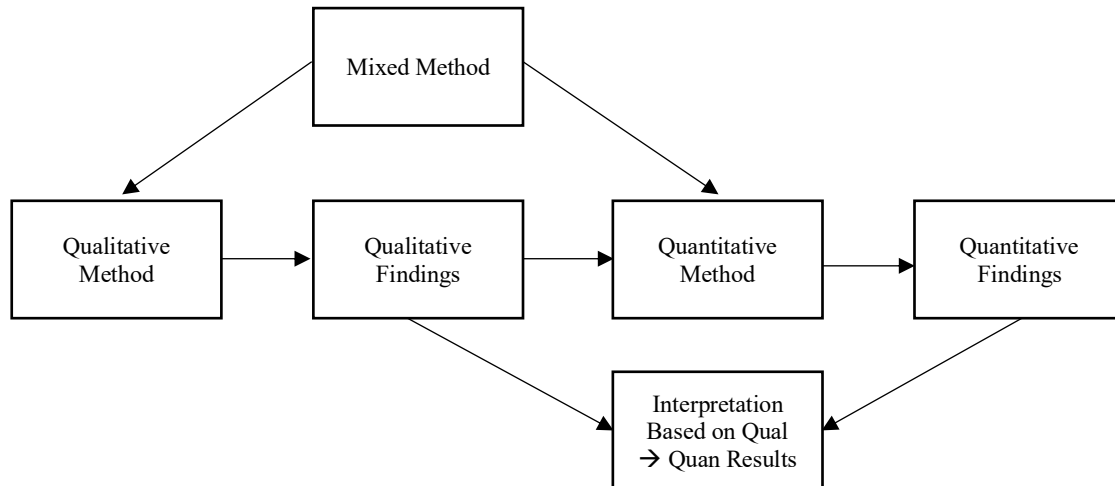


Figure 5. Mixed method mixing (West, 2011)

From the six (6) primary mixed method designs (convergent parallel mixed methods, explanatory sequential mixed methods, exploratory sequential mixed methods, embedded mixed methods, transformative mixed methods, multiphase mixed methods) we chose exploratory sequential design to answer our research questions for this study (Creswell, 2014). Exploratory sequential design typically involves two phases: an initial qualitative data collection, followed by a quantitative phase, in which the quantitative phase builds on the results from the qualitative phase. In this way, the qualitative results are explained in more detail through the quantitative data. For example, findings from focus groups or interviews can be explored further with a survey and secondary data analysis to better understand how the personal experiences of individuals match up to the instrument results. In this study we use three qualitative data collection methods (content

analysis, focus group discussion, semi-structured interview) and survey data collection (quantitative) from five small towns in rural Missouri.

In the mixed-methods approach, the integration of data can happen at multiple levels of a study: in the design level, methods level, or interpretation level (Cameron & Miller, 2007). It also can happen in different ways such as connecting, building, merging, or embedding. To fully address the research questions and connect data from qualitative phase with data from the quantitative phase, we will use a joint display comparison table to compare and contrast every result from the different phases and methods (Wisdom & Creswell, 2013). The connected data will be interpreted within the scope and purpose of the study which is understanding the impact of Walmart store closure in rural communities.

The purpose of this mixed method study was to explore and describe the perceptions of community leaders and households in rural areas concerning the closure of Walmart stores in their communities. The aim of this research is to describe how community leaders and members perceived the impact of Walmart's closure on their social, economic, health, and local culture. This study describes the approaches (adaptive capacity) of those community leaders and members to improve their local socio-economic sustainability after Walmart departed their town.

Sequential mixed methods design can provide interesting information and even unexpected themes which are useful in understanding the phenomenon being studied (Driscoll et al., 2007). Mixed methods findings offer a higher possibility to prove that results are grounded in participants' experiences (place-based community resilience and post-traumatic growth) (Wisdom & Creswell, 2013). However, our research design has

some limitations and disadvantages. For example, during the technical process of integration, we may experience a loss of richness, depth, and flexibility when we are trying to code or 'quantify' our qualitative data (Driscoll et al., 2007). This increases the complexity of evaluations and requires more resource capacity and capability. Mixed methods studies need a long process of planning to describe all aspects of research, including the sample, timing, and the plan for integrating results. To sum up, integrating qualitative and quantitative data during analysis is usually a complicated process, labor-intensive, time-consuming, and requires more resources than a single method study (Wisdom & Creswell, 2013).

## 1. DOCUMENT ANALYSIS

As a part of qualitative research, document analysis was employed for this study. The primary types of documents used in this study were documents available in the public domain, such as local newspapers published during and after the closure of a Walmart store (2016-2019). Since it is not easy to find the archives of local newspapers, a small number of documents were chosen for the time frame based on the recommendation of a local journalist, especially in Caruthersville (Pemiscot County). Besides printed newspapers, other documents were gathered from the internet (online sources), such as online petitions and all news related to the closure of Walmart stores in the research area.

Internet-based research has been gradually gaining ground in the social sciences due to the expansion of the internet. Online petitions are often used nowadays to gain public support on specific issues (Briassoulis, 2010). Online petitions often attract a

significant number of signatures that range in the hundreds to thousands in a cost-efficient manner (Elnoshokaty et al., 2016). The signatories usually have different demographic characteristics such as age, gender, nationality, education, and income, and belong to varied occupational, cultural, and special interest groups. In terms of methodology, online petition data is a form of secondary data, although it bears similarities to primary data. Signatories offer both objective and subjective information, as in the case of conventional research instruments.

Table 3. List of online petitions related to Walmart store closings between 2016-2018<sup>xv</sup>

<b>Location</b>	<b>Dates</b>	<b>Signatures</b>
Caruthersville, MO	2016	888
Wayne, MO	2016	799
Willacy, TX	2016	1,454
Mantachie, MS	2016	283
Cedarville, AR	2016	412
West Louisville, KY	2016	1,164
Corning, AR	2018	526
Hurstbourne, KY	2018	38

The individual signatory is the unit of analysis for an online petition (Briassoulis, 2010). Comments may be the most valuable data. They range from single-word expressions to lengthy statements. Anonymity is a standard option in all petitions, and this anonymity makes signatories feel more comfortable expressing their personal views, especially on sensitive issues. Online petition data does suffer from problems such as missing or incorrect information, hoax responses, deceptive personal data, and deceptive statements.

Petition websites regularly remove any ‘fake’ signatures to prevent offending signatories from signing again. For this reason, data cleaning is always necessary before data analysis. The written comments may range from concise, structured, stylized

responses to unstructured and casual. Response quality is heavily influenced by the educational status of signatories, their knowledge and use of language (native tongue or English), as well as tacit socio-cultural norms and forms of expression.

Petition comments require careful content analysis to extract meaningful and pertinent information to operationalize the concepts and variables of interest and their relationships (Briassoulis, 2011). Petitions may not guarantee external validity, so we cannot generalize the findings to other cases, places, and times. Researchers must decide which comments entail similar meanings drawing on similar situations, broader theories, and other related studies to identify collective understandings of concepts and common stances towards an issue.

The document analysis for this study is purposive as it focuses on seeking information for the study's objectives concerning the impact of Walmart's exit. Documents (paper-based and online) can provide background information and broad coverage of data and are therefore helpful in contextualizing one's research within its subject or field (Altheide, 2000). Analyzing documents requires coding content into themes and sub-themes. Documents also contain data that can no longer be observed, provide details that informants have forgotten, and can track change and development. One of the main advantages of document analysis is that the method facilitates collection of a large amount of reliable information without necessarily questioning many people.

Through the lens of a constructivist, document analysis involved using descriptive and evaluative coding associated with the research objectives. NVivo 12 data analysis software was used to organize and code datasets. As the coding progressed, we categorized codes that shared similarities, compiling them into groups that logically and

intuitively fit together (Bathmanathan et al., 2018). Working with these categories/groups, we searched for pertinent information that led toward a deeper understanding of the experiences, history, challenges, and changes associated with the impact of Walmart store closure in small town Missouri.

Qualitative document analysis involves emergent coding, identifying relevant terms and topics upon reviewing items, theoretical sampling of documents from electronic information bases, development of a protocol for more systematic analysis, and then constant comparison to clarify themes, frames, and discourse (Owen, 2014). Many forms of data are receptive to the coding process, including interview transcripts, participant observation field notes, journals, documents, literature, email correspondence, etc. It is essential to understand that coding is “not a precise science,” instead it is “primarily an interpretive act” meant to be “the transitional process between data collection and more extensive data analysis.” (Lovegrove & Brailsford, 1995).

This research explored, compared, and analyzed the documents to get a clear picture of people's perceptions and experiences when Walmart left their town. The research question for document analysis is *"How often have residents expressed their "need," "anxiety," and "anger" in online petitions regarding Walmart store closures?"* In other words, what are the concerns of the community toward Walmart closures in their area? There are three steps of content analysis: discovery, human review, and software review (Sumner et al., 2014). Further, we compared the document analysis results and the "real world" discourse (empirical field study) through in-depth interviews and focus group discussions on the next qualitative phase.

## 2. QUALITATIVE PHASE

In the qualitative phase we used multiple techniques and sources for data collection: (1) observation, (2) In-depth interviews, (3) focus group discussion, and (4) elicitation materials (photos, objects, and other data sources). We taped and transcribed verbatim each interview (Creswell, 2014). We conducted a thematic analysis of the text data within each case and across the cases, using qualitative software, Nvivo 12, for data storage, coding, and theme development.

### 2.1. OBSERVATION

Observation is the systematic description of events, behaviors, and artifacts in the social setting chosen for study (Smit & Onwuegbuzie, 2018). Observations enable the researcher to describe existing situations using the five senses. Observations have been used in various disciplines to collect data about people, processes, and cultures in a qualitative study. Many researchers have stressed that observations are not made in a vacuum but are guided and shaped by prior questions, problems, hypotheses, or theories (McGrath & Laliberte Rudman, 2019). Given the character of observation, it is not easy to distinguish between what is observable and what is unobservable. Due to the natural position of the researcher as an outsider and given a limited amount of time to visit or live in the community, observational findings or results mean every description of events, behaviors, and artifacts during a visitation are recorded in the field notes. In this study, the researcher wrote field notes along with the observation and data collection processes.

The degree to which the researcher is involved in the culture under study makes a difference in the quality and amount of data collected. It is a spectrum from complete participation to complete observation, in which the researcher is completely hidden from view while observing or when the researcher is in plain sight in a public setting, yet the public being studied is unaware of being watched. This complete observer method is used frequently by the researcher during observation inside Walmart stores or other local grocery and convenience stores in the area. This type of observation (complete observer) is hidden and unknown to participants.

Conducting observations involves various activities and considerations for the researcher, including ethics, the processes for conducting observations, deciding what and when to observe, keeping field notes, and writing up findings. When the researcher met community members for the first time, for example, we informed them of our purpose for being in town. The researcher also shared sufficient information with them about the research topic and why the researcher was around town taking pictures or visiting stores.

Another ethical responsibility during observation is to preserve the anonymity of participants in the final write-up and field notes to prevent their identification. The researcher became familiar with the setting and social organization of the culture and mapped out the location by developing social networks to help the researcher understand the situation. These activities also enabled the researcher to better understand what to observe and from whom to gather information. The researcher mostly chose a descriptive observation, in which the researcher observes anything and everything, assuming that the researcher knows nothing about the town.

Sometimes, the researcher asked community members or key informants about what to observe and where. This is called a focused observation, which emphasizes observation supported by interviews. This happened when researchers visited the Walmart Museum in Bentonville, Arkansas, and the first Walmart Supercenter in Washington, MO, to learn more about Walmart's history before starting field studies. Also, when researchers decided to utilize the public library and county courthouse as meeting rooms for the focus group discussion, both followed suggestions from the key informant in this study. We conducted this study in five small towns. However, not all towns were observed equally. Researchers focused on the Caruthersville, Piedmont, and Greenville areas. The researcher only visited Williamsville and Patterson one or two times to get familiar with the physical surroundings and the geographical settings of these towns.

## 2.2. IN-DEPTH INTERVIEW

We used interviews as a primary data collection method to gather information from individuals about their own practices, beliefs, or opinions related to the impact of Walmart's closure. We wanted to gather information not only about present behaviors but also past experiences. We wanted to collect background information from the local expert regarding our research problem. By using semi-structured interviews, we had a clear plan, but minimum control over the respondent answers. In semi-structured interviewing, a guide is used, with questions and topics that must be covered.

Semi-structured interviews are often used when a researcher wants to delve deeply into a topic and to understand thoroughly the answers provided. A semi-structured

interview was selected as the means for data collection because the varied background and personal histories of the sample group precluded the use of a standardized interview schedule. At the same time, to explore respondents' opinions, clarify interesting and relevant issues, elicit complete information, and explore sensitive topics within each interview, some freedom to probe was also essential. For this reason, this kind of interview collects detailed information in a style that is somewhat conversational.

In this study, the researcher interviewed community leaders (Director of Caruthersville public library and Piedmont Chamber of Commerce President), local community experts (University of Missouri Extension specialists in Wayne County, Pemiscot County, Dunklin County, Bloomfield, and Cape Girardeau), researchers from the University of Missouri Extension and Lincoln University extension who have done a research in the area, former Walmart workers, local youth and students, as well as other community members. Some interviews were conducted before the community survey, and some others were conducted after the community survey was completed to clarify some interesting data and information. Due to COVID-19 restrictions and social distancing policies, some post-survey interviews were also conducted via email and phone for safety reasons.

### 2.3. FOCUS GROUP DISCUSSION

Focus group discussion is a qualitative method that possesses elements of both interview and observation techniques while maintaining its own peculiarity and uniqueness as a distinctive research method. Humans as “social” beings have long been gathering and discussing important issues in groups. Researchers have used this naturally

occurring behavior and refined it to make it a method of research whose development has been divided into three phases. Interest in focus group discussions has grown recently, and so has their recognition as a valuable method for qualitative data collection. Despite increasing popularity, they are not an easy option, and moderators must find appropriate ways to approach participants to achieve quality data (Harrell & Bradley, 2009).

A good focus group has some specific characteristics such as carefully recruited participants, a comfortable environment, interviewing people in their language, a skillful moderator, and systematic analysis (Nyumba et al., 2017). When conducting focus groups in Caruthersville and Wayne County, we invited participation from individuals who had the characteristics, experience, or knowledge needed to provide rich information on the impact of Walmart store closure to the community. A focus group is working well when participants begin to talk to one another and build on one other's comments rather than continually responding directly to the moderator. Ideally, participants become engaged, and the focus group becomes a forum for their own discussions. The moderator should begin to play a less central role as participants share experiences, debate ideas, and offer opinions. In this study, the focus groups were held in familiar or neutral settings such as public libraries and the county courthouse. The seating in the meeting room was arranged so people could easily see one another. We recorded the discussion for analysis.

### 3. QUANTITATIVE PHASE

In the quantitative phase, we used a community survey for data collection. This survey's objectives were to measure small-town residents' perceptions and attitudes on the impact of Walmart's store closure in rural Missouri and to identify factors that affect

residents' perceived perceptions and attitude. The questionnaire was developed as an instrument for self-administered data collection, and it was composed of 51 questions (see Appendix 1). We tested the questionnaire for content validity with a group consisting of ten residents in Caruthersville before it was delivered to the respondents. We collected data using drop-off and pick-up surveys and conducted a statistical analysis of the findings using SPSS 28 software.

### 3.1. VARIABLE AND INDICATOR

In this survey, respondents were asked about their education, income, age, employment status, race, political view, religious affiliation, marital status, and whether they own a small-business or not. For the general opinion and perception toward the Walmart store closure, the respondent was asked about their opinion (for example): "Do you think Walmart's store closing has had a good or bad effect on your community?" This survey also gathered data and information about (1) shopping frequency at Walmart, (2) satisfaction with Walmart, (3) perceived perception of Walmart presence and power, (4) perceived household impact, (5) perceived community impact, (6) perceived social support, (7) household food insecurity assessment, (8) self-rated health status, and (9) participation in government assistance programs.

Shopping frequency at Walmart was measured by ordinal scale variable (1=never, 2=rarely, 3=sometimes, 4=often, and 5=always). Using this scale, we wanted to identify the respondents' shopping frequency before and after Walmart left the town. Our instrument also measured respondents' satisfaction level with Walmart to see how happy and loyal Walmart customers are in rural areas regarding products, services, employees,

prices, etc. We measured this variable using a five-point Likert scale (e.g., Please rate how satisfied or dissatisfied you are with each of these aspects of the Walmart Store? (a) location, 1=extremely dissatisfied, 2=dissatisfied, 3=neither dissatisfied nor satisfied, 4=satisfied, and 5=extremely satisfied).

Similar to respondents' satisfaction measurement, an ordinal Likert scale was also used for measuring the perception of Walmart (e.g. In general, do you think Walmart is bad for the community?) and perceived social support (e.g. I trust the residents of this town, 1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree, 5=strongly agree), as well as respondents' perceived impact of Walmart store closures (e.g. Please rate each of the following issues based on how big the impact of Walmart closure is in your community" (a) economy, 1=very negative impact, 2=negative impact, 3=neutral, 4=positive impact, and 5=very positive impact).

To assess the household food insecurity status in the research areas, this study adopted some questions from the U.S. Household Food Security Module 2012. This questionnaire includes 16 items or statements that measure food security conditions. A five-point ordinal scale was also employed to measure respondents perceived self-rated health situations (1=excellent, 2=very good, 3=good, 4=average, and 5=poor). Respondent were also asked whether they participate in government assistance programs, such as SNAP, NSLP, and WIC, or not using "yes" and "no" questions.

### 3.2. SAMPLING METHOD

Cluster sampling involves partitioning the population into separate groups called clusters. A simple random sample of clusters (streets/blocks) is selected in single-stage

cluster sampling, and data are collected from every unit in the sampled clusters (houses). We listed our sampling-frame (all streets/blocks in the town) for the drop-off and pick-up survey in the excel sheet. If there were not enough households to get the expected number of respondents, we continued to randomize the next blocks/streets until we had enough respondents/households. However, our initial design did not always work as we expected. We made some adjustments in the field due to the real situation based on the surveyor's judgment of the field conditions. For example, about 15% of samples (streets) changes or replaced during data collection because there is no household and for some reason are impossible to access by the surveyors. Houses we saw on Google Earth were sometimes different from the real layout due to development, demolition, or simply being non-accessible.

Following the ideal sampling criteria (Dillman et al., 2014), the expected sample size for Caruthersville (95% confidence interval,  $\pm 5\%$ , 50/50 split) was 322 households and 278 households for Piedmont. In Caruthersville, this study succeeded in maintaining this expectation with 330 delivered questionnaires. However, in Piedmont, we made some adjustments in the field based on the coordinators and surveyors input during a technical briefing outlining the ways we might not be able to reach the ideal 278 households. Due to the community's homogeneity, distance, and other geographical reasons, we instead collected some data from the surrounding towns that also relied heavily on the Walmart in Piedmont. To make it closer to our design, we decided to deliver 200 questionnaires in Piedmont and 75 questionnaires in three surrounding towns: Patterson, Williamsville, and Greenville.

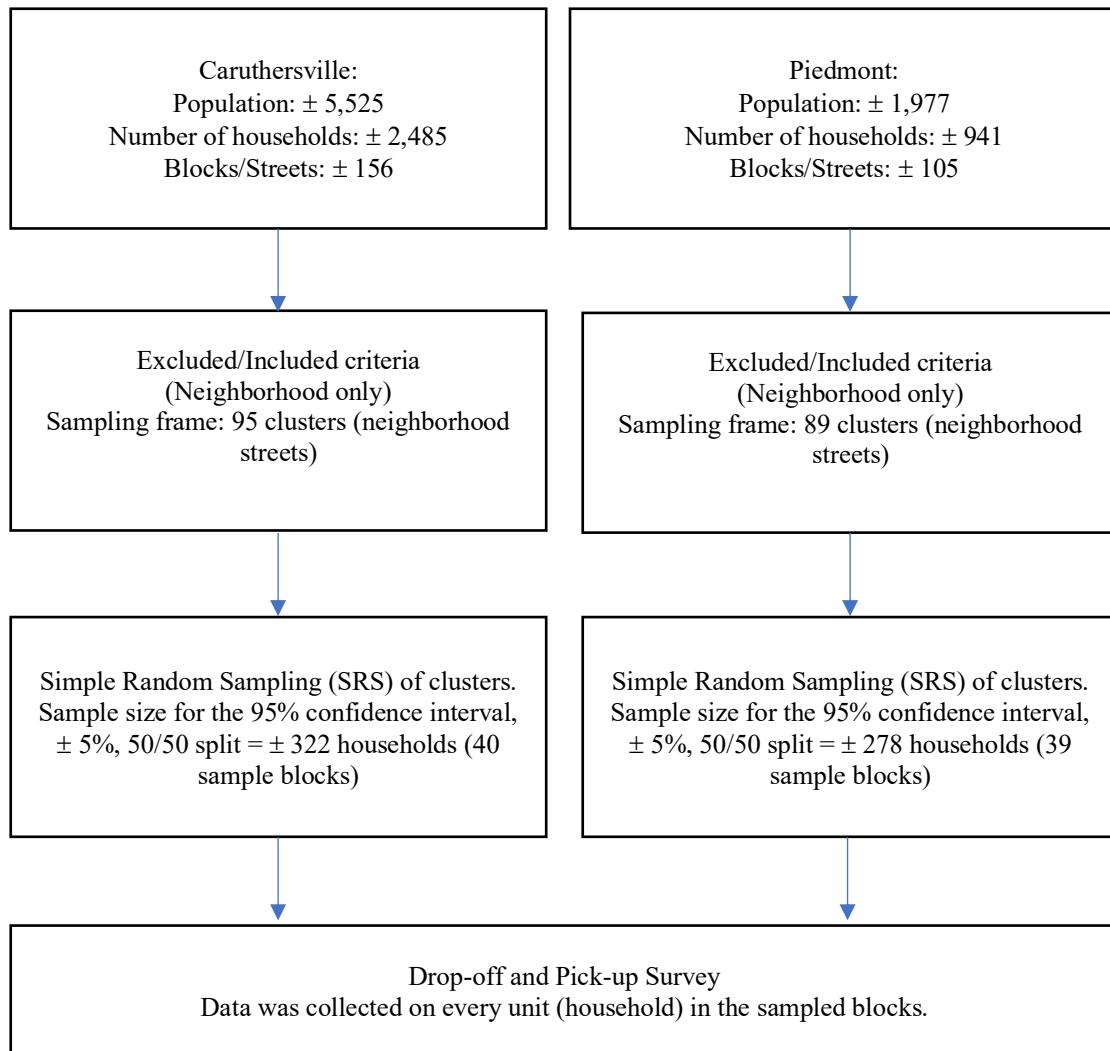


Figure 6. Single-stage cluster sampling for survey data collection.

### 3.3. COMMUNITY-BASED DROP OFF AND PICK UP SURVEYS

A drop-off and pick-up survey were conducted for data collection in this study to address practical issues associated with improving coverage, and its relationships with sampling, response, and administrative considerations. This method has been presented as an alternative for reducing non-coverage error at lower cost (Steele et al., 2001).

Questionnaire for hand delivery survey were self-administered by the respondent. The questionnaire included a cover letter, open-ended and close-ended questions, and pre-testing question procedures. Each sample respondent received souvenirs in their questionnaire as an incentive to increase the survey response rate (Asch et al., 1998). We also hired local high school students and residents to help with the drop-off and pick-up of surveys from each household. A survey in Caruthersville was conducted from September to November 2019, and data collection at Piedmont, Patterson, Williamsville, and Greenville was conducted from January to March 2020.

In Caruthersville, this survey was helped by residents and a coordinator who were very familiar with the people in town. The local coordinator helped the researcher to recruit some high school students in Caruthersville to deliver questionnaires door-to-door. This survey may not have been successfully delivered without the contribution of local residents. DJ (46 years old), the local survey coordinator, spent countless hours in the community assisting many programs, including after school programs in Caruthersville. She works diligently teaching and encouraging youth to be active and make healthier food choices. She led a community garden with local agencies and community volunteers. Residents of Caruthersville are very familiar with her face and activities in the city. Whenever the high school surveyors had a problem in delivering a survey, she quickly jumped in and helped both residents and students to communicate and clarify things related to the survey. Local agencies and residents became coordinators and surveyors in Caruthersville, as well as Piedmont and the surrounding towns. This community-based survey was effective and minimized misunderstanding or problems in data collection.

The survey coordinator was appointed by the researcher and the MU Extension office in each county. The coordinator was responsible for: (1) ensuring that surveys distributed and filled out as expected, (2) recruiting surveyors at the research sites, (3) checking the surveyor's work, (4) recording processes and changes in the field, (5) resolving technical problems on the ground that the surveyor could not resolve, (6) communicating with researchers, and (7) receiving payments from researchers and distributing them to surveyors. Coordinators sometimes also collected data by becoming surveyors.

Surveyors were residents familiar with the neighborhood and could be high school students or other residents. Surveyors were responsible for (1) knocking on the door of the respondent's house and delivering the questionnaire to the specified location (street and house), (2) asking respondents to take part in the survey, (3) giving away souvenirs (reusable bags) to respondents with the questionnaire, (4) ensuring that only one adult (over 18 years old) completed the survey for each household, (5) picking up the completed questionnaire and returning it to the coordinator, and (6) receiving payments from the coordinator based on the number of completed surveys returned.

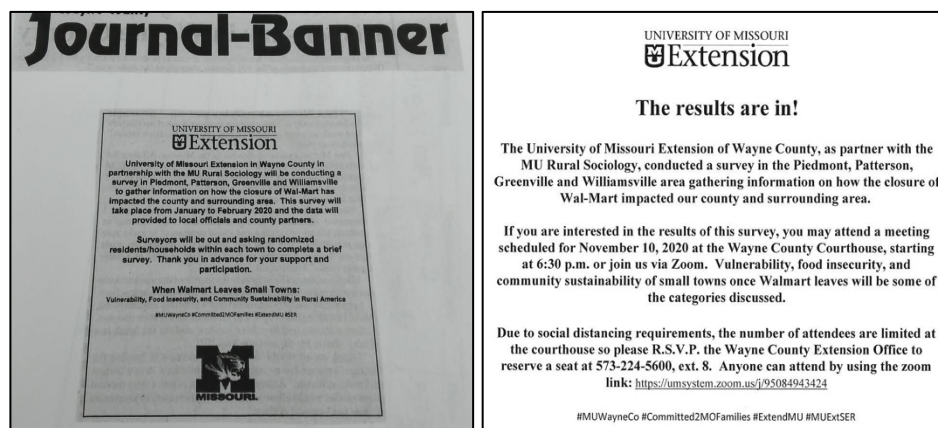


Figure 7. Survey announcement in the local Wayne County newspaper.

### 3.4. RESPONSE RATE

The response rate level is an important factor in assessing the value of research findings (Baruch & Holtom, 2008). While survey response rate tends to decline overtime (mail, phone, and internet modes), some scholars suggest the drop-off and pick-up (DOPU) survey method as an alternative (Jackson-Smith et al., 2016). In other words, The DOPU survey is an effective technique to reduce potential nonresponse bias through increased response rate (Allred & Ross-Davis, 2011). The high response rate of the survey in this study (73.5%) is likely due to several factors, including (1) the use of a drop-off and pick-up method with personal interaction, (2) an incentive to the surveyor, (3) the use of residents and high school students as surveyors (community-based), (4) partnership with local institutions and agencies, (5) the salience of the topic (the Walmart closure is a topic of local interest), and (6) local awareness of the research project.

Table 4. Population, samples, and response rates.

	(1) Caruthersville	(2) Piedmont	(3) Patterson	(4) Williamsville	(5) Greenville
County	Pemiscot	Wayne	Wayne	Wayne	Wayne
Population	5,525	1,977	1,501	342	511
Median age (y)	34.2	42.9	51.4	44.5	45.9
Total area (sq. mi)	5.24	2.15	-	0.32	0.68
Household	\$19,601	\$24,678	-	\$21,111	\$28,214
Median Income					
Income Per Capita	\$12,034	\$11,967	-	\$14,844	\$16,802
Pop. below poverty line	35.7%	26.5%	-	25%	14.2%
Type of store	Discount Store	Discount Store	-	-	-
Walmart Store	1977 - 2017	1987 - 2017	Non-Walmart	Non-Walmart	Non-Walmart
Open-Close			Town	Town	Town
Completed	222 (330)	165 (200)	48 (75)	66 (75)	54 (75)
Survey (Delivered)					
Response Rate	67.27%	82.5%	64%	88%	72%

\*Total Survey Delivered = 755, Total Survey Completed = 555, Response Rate = 73.5 %

After the data collection process was completed (drop-off and pick-up survey) and before we began analyzing our data file, we first inspected our data and fixed some problems. Data input was done using synthetic questionnaires we made on Qualtrics software which made the process for producing the data in an Excel document faster and easier. We transformed all questionnaires into variables with specific values based on our variable measurements.

### 3.5. SURVEY DATA ANALYSIS

We wanted to be sure that our variables had the right formats and values and have plausible distributions. For this reason, we performed several steps to prepare our data set. In the first step, we counted the cases and variables contained in our original dataset. After running frequency tables with bar charts for all categorical variables and histograms for all metric variables, we checked to see if any missing values needed to be specified for each variable. Another problem is a missing value. Missing values sometimes indicate that respondents did not fill out the questionnaire correctly. We checked the ways missing values were distributed over respondents, and we did this for sections of variables separately.

Our dataset contains ordinal data (numeric variables) which are suitable for numeric calculations, but not all mathematical operations can be performed on them. Ordinal data has values that follow a natural order. For instance, in our dataset, the ranges of income are considered ordinal data. Unlike interval or ratio data, the only available measure of central tendency for ordinal data is the median. We used a bar chart to represent our ordinal data responses in the descriptive analysis. We also analyzed our

ordinal data using advanced statistical analysis tools and hypothesis testing. Since the standard parametric methods (t-test or ANOVA) cannot be applied to ordinal data, we carried out nonparametric tests such as the Mann-Whitney U test and binominal logistic regression.

We also made some changes in our raw dataset's variables by combining some of its categories or values together for better analysis. For example, we changed a five ordinal categorical variable of income and merged the categories into three categories (low-income, middle-income, and high-income). This process is called recoding. We recoded some of our variables into a different variable transform because we did not want the changes to overwrite the original variable.

We wanted first to describe and explore our data. We began by examining each variable by itself then moved to study the relationships among variables. In other words, we started with graphs and then added numerical summaries of specific aspects of the data (Moore et al., 2015). The categorical variable's distribution lists the categories, count (n), and the percent (%) for the categorical variables. The last value of the "other" variable includes all other data (combination) that did not fit the previous categories or values. We did this with careful judgment. For example, due to small counts or percentages, we combine other race categories outside "Black or African American" and "White" into the "Other" category (race).

### 3.6. DUMMY VARIABLES

Dummy variables or dummy coding play an important role in data analysis. Dummy variables are independent variables that take the values of only 0 or 1. In

quantitative analysis, a dummy variable is a numeric stand-in for a qualitative fact (e.g., gender, race, political views) or a logical proposition (Garavaglia, 2016). Regressions are most known for their use in using continuous variables to predict an outcome value, and dummy coding allowed us to turn categories into something a regression can treat as having a high (1) and low (0) score. In a regression model, a dummy variable with a value of 0 will cause its coefficient to disappear from the equation, and the value of 1 causes the coefficient to function as a supplemental intercept. This allows the regression look at directionality by comparing two sides, rather than expecting each unit to correspond with some kind of increase. Other names for dummy variables are design variables, Boolean indicators, and proxies.

In this study, a dummy variable takes on 1 and 0 only. The numbers 1 and 0 have no numerical (quantitative) meaning. The two numbers are used to represent groups. For example, in our surveys, we have a sample that includes both female and male. Then a dummy variable can be defined as Dummy ( $D$ ) = 1 for female and  $D = 0$  for male. Such a dummy variable divides the sample into two subsamples: one for female and one for male. To represent a categorical variable that can assume  $k$  different values, we defined  $k - 1$  dummy variables. For instance, suppose we are interested in political views, a categorical variable that might assume three values: conservative, liberal, or moderate. We could represent political view with only two dummy variables. We don't have to create a dummy variable to represent the "Moderate" category of political views. If  $X_1$  equals zero and  $X_2$  equals zero, we know the voter is neither Conservative nor Liberal. Therefore, the voter must be Moderate.

$X_1 = 1$ , if conservative;  $X_1 = 0$ , otherwise.

$X_2 = 1$ , if liberal;  $X_2 = 0$ , otherwise

The value of the categorical variable that is not represented explicitly by a dummy variable is called the reference group. In this example, the reference group consists of moderate voters. Strategies for choosing the reference category in dummy coding: (1) Use the normative category. In many cases, the most logical or important comparisons are to the most normative group. (2) Use the largest category. (3) Use the category whose mean is in the middle, or conversely, at one of the ends. Once an independent categorical variable has been recoded as a dummy variable, the dummy variable can be used in regression analysis just like any other quantitative variable. For example, suppose we wanted to assess the relationship between household income and political views (i.e., conservative, liberal, or moderate). The regression equation will be:

$$\text{Income} = b_0 + b_1X_1 + b_2X_2$$

Where  $b_0$ ,  $b_1$ , and  $b_2$  are regression coefficients.  $X_1$  and  $X_2$  are regression coefficients defined as:

$X_1 = 1$ , if conservative;  $X_1 = 0$ , otherwise.

$X_2 = 1$ , if liberal;  $X_2 = 0$ , otherwise.

In analysis, each dummy variable is compared with the reference group. In this example, a positive regression coefficient means that income is higher for the dummy variable political view than for the reference group; a negative regression coefficient

means that income is lower. If the regression coefficient is statistically significant, the income discrepancy with the reference group is also statistically significant.

### 3.7. FACTOR ANALYSIS

*Factor Analysis* is a multivariate statistical method whose primary purpose is to define the underlying structure for a group of related variables. Factor analysis is used to understand the patterns of relationships among many dependent variables while simultaneously discovering the nature of the independent variables that affect them. Factor analysis helps reduce the number of reported variables by determining significant variables and 'combining' these into a single variable. It may be used either to discover factors or to test a hypothesis. Factor analysis can also help demonstrate how a complex measurement instrument is measuring one or more important things. In general, factor analysis is used to understand the patterns of relationships among many dependent variables by reducing the number of variables. It addresses multicollinearity, examines the structure of the relationship between variables, and evaluates the construct validity of a scale, test, or instrument. The objective of factor analysis is to develop parsimonious analysis and interpretation to develop theoretical constructs (Williams et al., 2010).

*Exploratory factor analysis* (EFA) is used to determine traits or factors that comprise a data set. *Confirmatory factor analysis* (CFA) attempts to validate hypothesized factors that one expects to emerge from data collected from test questions, questionnaire responses, etc. The EFA process steps are data screening, factor extractions, rotation of factors, and results interpretation. The relationship between measurement variables is linear (correlated to one another). The minimum sample size

number is at least five times as many observations as there are variables to be analyzed, and a more acceptable size would reflect a 10:1 ratio. At a minimum, the sample size should be at least 100. In this case the sample consists of 555 completed questionnaires. In this exploratory factor analysis, our research question is: *How many elements are measured by our questions and which questions measure similar factors?*

During the data screening procedure, we examined the descriptive statistics and correlation matrix to determine if the relationship between variables satisfied the assumptions required to conduct a factor analysis. The first step is to examine the correlation matrix between variables (items) to determine how well they relate to one another. If we find that there are variables that do not correlate well with any other variables (or very few) then we should consider excluding these variables before factor analysis is conducted. We would like to see our correlation coefficients exceed .30. The opposite problem of low correlations is variables that correlate too highly.

It is important to avoid extreme multicollinearity (variables that are very highly correlated) or singularity (variables that are perfectly correlated). As with regression, singularity causes problems in factor analysis because it becomes impossible to determine the unique contribution of a variable that is highly correlated with another variable. At this early stage we look to eliminate any variables that show no relationship (do not correlate) with any other variables or that correlate too highly with other variables ( $r > .90$ ). To evaluate the issues of low correlations and singularity, we referred to the correlation matrix in addition to KMO (Kaiser-Meyer-Olkin) and Bartlett's Test of Sphericity.

The value for the determinant is an important test for multicollinearity or singularity. The determinant of the correlation matrix should be greater than .00001. If the determinant value is less than this, it would be important to attempt to identify pairs of variables where  $r > .8$  and consider eliminating them from the analysis. The Bartlett's test is designed to determine if the correlation matrix is an identity matrix (where all correlation coefficients are 0). A significant value (less than .05) indicates that the data do not produce an identity matrix indicating there are adequate relationships between variables to conduct factor analysis. Results from this test also indicate that the correlations among variables overall are not so strong suggesting multicollinearity. The KMO test is a measure of whether the distribution of values based on the sample is adequate for conducting a factor analysis. This test indicates the amount of overlap or shared variance between pairs of variables. Values should be greater than .5, and our value was .886.

The goal of factor analysis is to identify groups of variables (items in this case) that are related to one another and to derive a description of the underlying traits that best represent the data structure. Communalities are estimates of shared or common variance among the variables after extraction has taken place. The total amount of variance for a component or factor is represented as an eigenvalue. Components or factors with eigenvalues of 1 or greater are considered to contribute significantly to the data structure. SPSS by default extracts only components or factors with eigenvalues of 1 or greater. In the case of factor analysis, we would like to explain at least 60-70% of the variance in the data structure by the factors that are extracted. The total variance in the data structure is explained by the "Total Variance Explained" table.

An important analysis for interpreting factors is factor rotation. Rotation is the process by which a factor solution is made more interpretable without altering the underlying mathematical structure. The reference axes of factors are turned about their origin until the axes of each factor are better aligned with the variables they represent. Varimax is an orthogonal rotation method designed to identify factors that are independent of one another. The whole notion of factor analysis is to identify groups of variables that can explain independent underlying traits in the data structure. The Rotated Component (Factor) Matrix table in SPSS 28 provides the factor loadings for each variable. A factor loading is the Pearson correlation (r) coefficient between the original variable with a factor. A factor loading of  $\pm .50$  or greater is considered practically significant (we used factor loading  $> .60$ ) with a sample size of 555.

Table 5. Factor loading table (the correlation coefficient for the variable and factor).

<b>Factor/New Variables</b>	<b>Factor Loadings</b>	<b>Pearson correlation (r) coefficient</b>	<b>% of Variances</b>
Perceived satisfaction toward Walmart store (STF)	Q7_Services	.874	14.282
	Q7_Prices	.872	
	Q7_Products	.848	
	Q7_Employee	.839	
	Q7_Discount	.823	
Perceived community impact (CI)	Q7_Groceries	.813	14.006
	Q10_Social	.863	
	Q10_Culture	.847	
	Q10_Environment	.842	
	Q10_Eco2my	.829	
Perceived household impact (HHI)	Q10_Health	.825	12.886
	Q10_Food	.818	
	Q9_AccessTFR	.838	
	Q9_Commcenter	.836	
	Q9_AccessTLPP	.814	
Perceived Walmart perception (WP)	Q9_AccessTDP	.789	12.826
	Q9_AccessTHF	.781	
	Q9_AccessTCS	.780	
	Q8_Toomuchpower	.860	
	Q8_Badforcommunity	.856	
	Q8_Threateninghealth	.855	
	Q8_Badplacetowork	.855	
	Q8_Badforcountry	.843	

Factor/New Variables	Factor Loadings	Pearson correlation (r) coefficient	% of Variances
	Q8_Nerverservingcomm	.796	
Perceived social support/capital (SC)	Q35_willing to cooperate	.860	9.681
	Q34_willing to help		
	Q36_I trust the residents	.859	
	Q37_willing to contribute	.844	
	Q38_would loan me money	.776	
		.679	
Perceived access to Walmart store (ACC)	Q7_Access	.761	5.834
	Q7_Convenience	.756	
	Q7_Location	.721	
Shopping frequencies (SF)	Q5_shopfreqafter	.783	4.181
	Q4_shopfreqb4	.637	
	Q5_onlineshop	.635	

*Extraction Method: Principal Component Analysis.*

*Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>*

*a. Rotation converged in 7 iterations.*

*Compute new composite variables based on the loading factors (STF, CI, HHI, WP, SC, ACC, and SF).*

Cronbach's alpha,  $\alpha$  (or coefficient alpha), was used to measure the instrument's reliability or internal consistency. Reliability is how well a test measures what it is meant to measure. In this study, high reliability means the instrument measures residents' perception, satisfaction, and perceived impact of Walmart's store closure in rural Missouri. Low reliability means the instrument measures something else. The new variables above were found to have a Cronbach of .92, thus confirming the item's reliability and homogeneity within the variable. From our test's result in Table 4 below, we can see that Cronbach's alpha for the six (6) main dependent variables (5 Likert scales) is higher than .86, which indicates a high level of internal consistency for our scale in this specific sample. However, shopping frequency variables have low reliability (.461), which leads us to remove shopping frequency from our dependent variables since it measures something else.

Normally distributed data is needed to use a number of statistical tools, such as individuals control charts, Cp/Cpk analysis, t-tests and the analysis of variance

(ANOVA). An assessment of the normality of data is a prerequisite because normal data is an underlying assumption in parametric testing. When data is not normally distributed, the cause for non-normality should be determined and appropriate remedial actions should be taken. There are two main methods of assessing normality: graphically (visual inspection) and numerically (statistical tests). Statistical tests have the advantage of making an objective judgement of normality but are disadvantaged by sometimes not being sensitive enough for low sample sizes or overly sensitive to large sample sizes. Some statisticians prefer to use their experience to make a subjective judgement about the data from plots or graphs.

Graphical interpretation has the advantage of allowing good judgement to assess normality in situations when numerical tests might be over or under sensitive, but graphical methods do lack objectivity. SPSS Statistics allows us to test all these procedures within the ‘explore’ command. In this analysis, we tested all our new dependent variables’ (STF, CI, HHI, WP, SC, and ACC) normality. There are also specific methods for normality tests, but these should be used in conjunction with either a histogram or a Q-Q plot. The Kolmogorov-Smirnov test and the Shapiro-Wilk’s W test determine whether the underlying distribution is normal (null hypothesis: The data is normally distributed).

Table 6. Testing for normality using SPSS statistics.

No		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
1	STF	.086	403	.000	.943	403	.000
2	CI	.169	403	.000	.874	403	.000
3	HHI	.115	403	.000	.921	403	.000
4	WP	.189	403	.000	.851	403	.000
5	SC	.080	403	.000	.954	403	.000
6	ACC	.102	403	.000	.912	403	.000

a. Lilliefors Significance Correction

The test of normality table above (Table 4.6) presents the results from the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The Shapiro-Wilk test is more appropriate for small sample sizes (< 50 samples) but can also handle sample sizes as large as 2,000. For this reason, we will use the Shapiro-Wilk test as our numerical means of assessing normality. If the significant value of the Shapiro-Wilk test is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviate from a normal distribution. We can see from the above table that STF, CI, HHI, WP, SC, and ACC were not normally distributed (sig < 0.05). To address this issue (right skew distribution), we tried a square root transformation to normalize it. However, after the square root transformation, the Shapiro-Wilk test is still below 0.05, which means our data was still not normally distributed (see Table 4.6). Since our variables fail a normality test, we performed nonparametric methods that do not require normality.

### 3.8. LOGISTIC REGRESSION

The logistic regression model has its basis in the odds of a two-level outcome of interest. The logistic regression model takes the natural logarithm of the odds as a regression function of the predictors. With 1 predictor ( $X$ ) this takes the form  $\ln[\text{odds}(Y=1)] = \beta_0 + \beta_1 X$ , where  $Y$  is the outcome and  $Y=1$  when the event happens (versus  $Y=0$  when it does not),  $\beta_0$  is the intercept term, and  $\beta_1$  represents the regression coefficient, the change in the logarithm of the odds of the event with a 1-unit change in the predictor  $X$ . The difference in the logarithms of 2 values is equal to the logarithm of the ratio of the 2 values, so by taking the exponential of  $\beta_1$ , we obtain the ratio of the

odds (the odds ratio) corresponding to a 1-unit change in X. Logistic regression is compatible for continuous or categorical predictors and provides the ability to adjust for multiple predictors. This makes logistic regression useful for analysis of observational data when adjustment is needed to reduce the potential bias resulting from differences in the groups being compared.

A logistic regression was performed in this study to understand whether household food insecurity status can be predicted from the independent variables. Binomial logistic regression predicts the probability that an observation falls into one of two categories of a dichotomous dependent variable (e.g., 0=food secure, 1=food insecure) based on one or more independent variables that can be either continuous or categorical. We provided a conceptual framework for each case in the next chapter. In the first model of logistic regression, we included all independent variables. The second model (final model) was estimated by systematically removing non-significant variables from the first model until all variables in the analysis had significant or nearly significant effects.

The final model is presented in the model summary table, classification table, and variables in the equation. To describe how much variation in the Household Food Insecurity, we can see from the model summary table provided by SPSS 28. This table contains the Cox & Snell R Square and Nagelkerke R Square values. Since Nagelkerke R<sup>2</sup> is a modification of Cox & Snell R<sup>2</sup>, we will use Nagelkerke R<sup>2</sup> value in this report. Using this approach, we estimated the probability of households having food insecurity conditions. If the estimated probability is greater than or equal to .5, SPSS statistics classifies it as occurring (e.g., food insecurity being present). If the probability

is less than .5, SPSS statistics classifies it as not occurring (e.g., food secure). Binomial logistic regression helped this study to predict whether cases could be correctly classified from the independent variables. The equation table's variables show the contribution of each independent variable to the model and its statistical significance. The Wald test was used to determine statistical significance for each of the independent variables. From these results, we can find variables that added significantly to the prediction. We can predict the probability of an event occurring based on a one-unit change in an independent variable when all other independent variables are constant.

## V. RESIDENTS' PERCEPTIONS OF AND RESPONSE TO WALMART'S EXIT

Walmart closed 269 stores permanently in 2016. 154 locations were in the U.S., including the company's 102 smallest-format stores called Walmart Express, which were opened as a test in 2011. Most of the stores that closed permanently in the U.S. (95%) are within ten miles of another Walmart<sup>xvi</sup>. Three months before the closing announcement, Walmart's CEO, Doug McMillon, mentioned to investors that Walmart would review its fleet of stores to increase competition from all fronts, including from online rival Amazon.com<sup>xvii</sup>. Walmart was focusing in the U.S. on Supercenters, Neighborhood Markets, the e-commerce business, and pick-up services for shoppers.

In rural Missouri, one resident in Pemiscot County immediately reacted by making an online petition to prevent the closure of Walmart in Caruthersville, a small town on the banks of the Mississippi River. The petition received broad support despite failing in preventing the closure of Walmart in 2017. The same petition was issued by residents in Willacy County (Texas), Corning (Arkansas), Wayne County (Missouri), and other towns where Walmart closed stores. Those petitions got hundreds or thousands of signatures and demonstrated how Walmart's customers and other citizens reacted to the closure of Walmart. Their response and action toward Walmart's policy change - by delivering petitions - somehow reflected their values, social structure, and belief systems.

Using the internet as a tool and channel to protest the closure of Walmart is quite interesting. Along with the growth of internet-based research in social sciences, online petitions are often used nowadays to gain public support on specific issues (Briassoulis, 2010), both in rural and urban areas for local, national, and even global issues. Online

petitions often attract a significant number of signatures that range from the hundreds to thousands, and these petitions provide cost-efficiency (Elnoshokaty et al., 2016). The individual signatory is the unit of analysis for an online petition (Briassoulis, 2010). Comments may be the most valuable data. However, online petition data suffers from the usual problems such as missing information. Information provided may be incorrect, such as hoax responses, deceptive personal data, and statements.

Although the petition website regularly removes any ‘fake’ signatures to prevent offending signatories from signing again, data cleaning is always necessary before data analysis. Written comments may range from concise, structured, stylized remarks to unstructured, casual, non-stylized thoughts. The quality is heavily influenced by the educational status of signatories, their knowledge and use of language (mother tongue or English), as well as tacit socio-cultural norms and forms of expression.

The signatories usually belong to different demographic characteristics such as age, gender, nationality, education, income, occupation, culture, and special interest groups. In terms of methodology, online petition data is a form of secondary data although it bears similarities to primary data. Signatories offer both objective and subjective information as in the case of conventional research instruments. Also, individuals from different social space and class within a community could generate different articulation towards Walmart in their community.

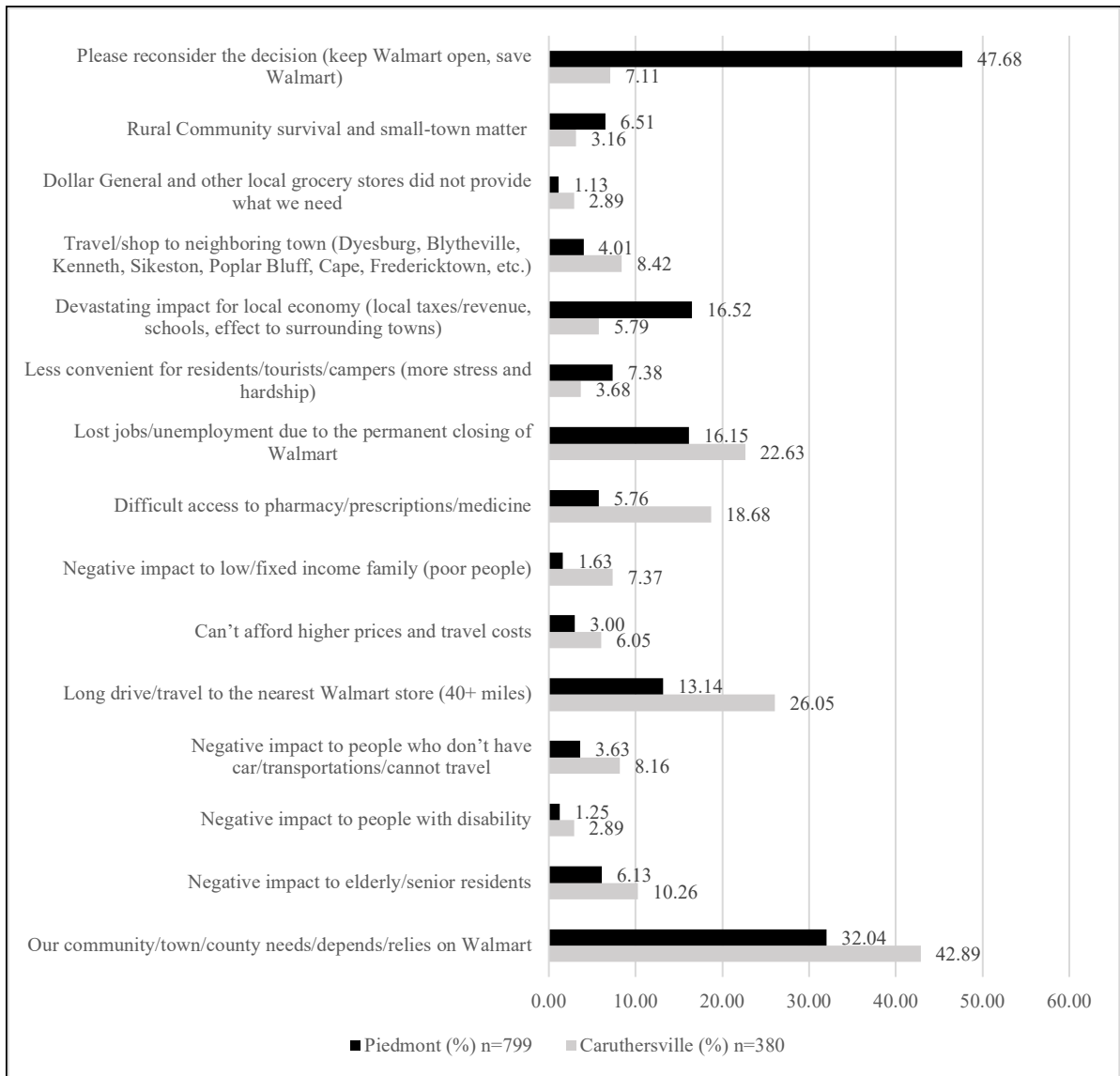


Figure 8. Caruthersville and Piedmont's Online petitions analysis results.

Although all signatories share a common trait, petition comments still require cautious content analysis to extract meaningful and pertinent information to operationalize the concepts and variables of interest and the relationships among them (Briassoulis, 2011). Petitions may not guarantee external validity so we cannot generalize the findings to other cases, places, or times. To identify collective understandings of concepts and common stances toward an issue, researchers have to decide which

comments entail similar meanings drawing on similar situations, broader theories, and other related studies. In addition to conducted interviews and focus group discussions<sup>2</sup>, we also explored and analyzed the contents of the petitions (see figure 8) and constructed them to get a clear picture of people's perceptions and experiences when Walmart leaves their town.

## 1. WALMART'S STORE CLOSURE IN CARUTHERSVILLE, MO

Caruthersville is located in the Bootheel region close to the Missouri border along the western bank of the Mississippi River. According to the 2010 census, there were 6,168 people, 2,454 households, and 1,567 families residing in the city. The racial makeup of the town was 63.89% White and 33.09% African American. Significant resources for the Caruthersville area include commerce supplied by the Mississippi River and agriculture (60% of the local economy). Rice and cotton are cash crops grown in the area flowing through the Mississippi River. Socially and culturally, one of the community leaders, TT, describes people's friendliness in Caruthersville.

You know, there aren't any better people in the state of Missouri, friendly people, everybody who comes to this town, that had never been here before, says, those the nicest people I ever met, the friendliest people, they ever met a stranger by welcoming newcomers. People who lived here for short times says it's the best place they ever live. Even with all of the shortcoming. But it's the people, you know, we have events like the BBQ on the river in the summertime, we have Halloween parade in the other day. Somebody said, I never see the town were people dressed up in costume and marched the street with band, and we do homecoming parade, Christmas parade is a big deal. And people get in line and have their places toward the parade hours (Interview with TT, resident of Caruthersville)

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<sup>2</sup> Focus group discussion in Caruthersville was held on July 2, 2019; focus group discussion in Wayne County was conducted on November 1, 2019.

Walmart opened its store in this area in 1977 and closed it in January 2017. The closest cities with Walmart stores are Kennett (MO) in the west, Dyersburg (TN) in southeast, and Blytheville (AR) in the southwest. It is about twenty-five miles in each direction. In general, the socioeconomic conditions in Caruthersville reflect the situation of its county, Pemiscot County. For example, Pemiscot has been ranked as the poorest county in the state of Missouri for several years. Between 2000 and 2012, the population in the Bootheel area declined by 2.65% but the most significant loss occurred in Pemiscot County which experienced an 8.77% decrease in population during these 12 years. One of the most significant factors, particularly in Caruthersville, was a tornado that hit in April 2006. Hundreds of residents moved out after this disaster. Pemiscot had the highest poverty rate (30.7%) and ranked 115 out of 115 counties in the state of Missouri on both health outcomes and lifespan. All these demographic and geographic conditions shape the unique setting of rural lives.

The closure of Walmart made everyone in Caruthersville worried about what would happen if Walmart left the town. Would any new business come? How would tax revenue be affected by Walmart leaving town? What would happen to employees and their families? Then the rumors spreading across questioning the reason why Walmart closed its stores in Caruthersville and Piedmont. While the countdown to closure continued, Walmart still donated funds to the local fire department. A \$2,500 Walmart Community Grant was received by the Caruthersville fire department<sup>3</sup>. This kind of support and generosity makes Walmart an essential part of a community. The store

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<sup>3</sup> “Walmart Donates \$2,500 to local fire department,” by Steve Harris, published in *Pemiscot Press*, Wednesday, January 4, 2017.

served as a one-stop shopping center for people in the community and the neighboring towns as well as the commuter whose loyalty to the store directly led to the closure of mom-and-pop businesses forty-years earlier.

Another rumor was spread in the community about the prospects of another tenant taking over the Walmart store property as the former Mayor, Mike McGraw, said<sup>4</sup>. He said that while city officials were anxious to see the property used by a business as soon as possible, the decision ultimately fell to the landlord and potential tenants. He would not specify what individuals or companies had expressed interest in the building and land. McGraw had relayed messages to the owner while attempting to respect his confidentiality. Nevertheless, after more than three years, the former Walmart building is still empty.

One store closing, like Walmart, is a significant loss for a small-town community. Retail and grocery stores in small towns are as important as the hospital. Walmart is essential for small-town communities. This store is not only a place to find daily needs and supplies, but also an “anchor,” a “community center,” and a “social hub” for small community members. In Bourdieu’s perspective, Walmart is a part of the economic field (Eichholz et al., 2013). Chris, a resident of Caruthersville, said in the petition that Walmart ruined peoples’ lives both when they came and left the town:

Thanks, Walmart for coming into our town 40 years ago and destroying all the mom-and-pop stores in our town. Now 40 years later you going to close the doors and leave us with another building that will soon be another eye sore to our community. You ruined people's lives when you came here and ruining people's lives when you leave.

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<sup>4</sup> “Interest in Walmart Building,” by Jeremy Hall, *published in Pemiscot Press*, Wednesday, December 7, 2016.

Much has been written about what happens when a corporate giant opens up in an area, with numerous studies recording how it kills downtown and forces the closure of mom-and-pop stores in local areas (Goetz & Swaminathan, 2006). Less understood is whether Walmart closures will make the local economy suffer or if it is an opportunity for local business and entrepreneurship to grow. Also, the wave of store closings across the U.S. most acutely in small-towns and rural communities that already have had high population loss. When we combine the county's economic downturn with Walmart's increasingly ferocious battle against Amazon for dominance in online retailing, we can see why Walmart cuts off their presence.

When Walmart leaves a town, it starts by slashing prices on all its products, stripping the shelves bare, before vanishing and leaving behind only the empty building and a vacant parking lot. Rural areas like Caruthersville are experiencing significant depopulation which is a limiting factor for the company's development and expansion. Hit hard by the long-term decline in agriculture that is the mainstay of the area and tornado damage in 2006, Caruthersville has seen a devastating and sustained erosion of its people, from almost 8,643 in 1960 to about 5,801 in 2016.

There were knock-on effects, too, for local businesses. Local hotels and restaurants in a radius of several miles from the store complain of empty rooms and tables, while houses and shops in close vicinity to Walmart are now up for sale. Over the 40 years of the store's existence in Caruthersville, many people grew dependent on the store in many ways. Dollar stores, Walmart's competitor, have picked up some of the trade left by Walmart, but they haven't created many jobs for local people. For instance,

Walmart employed 85 people in Caruthersville<sup>xviii</sup>. It was one of the largest employers in the area after the local casino. After the store closure, many employees felt they had no choice and either commuted long distances or relocated to work at other Walmart outlets.

Well, most of the employees were a retirement age. They were all in retirement. And most of them they transferred had under the requirement of five years to even get anything. So, then they were out of their age so that they were going to the doctor a little bit more often. They (Walmart) just really looked at Caruthersville as a loss. Well, (they said) there was no profit in there. They are a business, regardless of who ate the money and who got greed. They are in a business to make money (Interview with LV, resident of Caruthersville and former Walmart employee in Caruthersville).

After jobs, taxes are the next thing affected by the closure of Walmart. The county government lost its tax revenue from Walmart, most of which went to schools. Economic losses are only one aspect of the hurt felt locally because of Walmart's closing. However, there is a casino in Caruthersville, Lady Luck, which has revived the local economy and provided a new source of tourist revenue. The Walmart store and the casino are the two big fiscal resources for this town. It was estimated that \$100,000.00 was lost in annual tax revenue per month when Walmart closed its doors in Caruthersville<sup>5</sup>. The city has the safety net of a casino that injects roughly \$1.5 million per year into the local revenue stream (the casino provided \$4,286.36 per day from various taxes and agreements with Caruthersville).

According to the 2016 Missouri Gaming Commission Annual Report, and information provided by the city, Lady Luck was budgeted to provide \$974,448.41 in gaming revenue expenditures to Caruthersville during the 2019-2020 fiscal year. That was to include more than \$752,168.00 for water/wastewater improvements and

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<sup>5</sup> *Pemiscot Press*, Wednesday, December 21, 2016, page 3, "Casino softens blow of loss of Walmart" by Jeremy Hall, *Democrat Argus*.

\$123,680.00 for street improvements. The expenditures also were to fund public safety (\$71,598.00) and other infrastructure (\$27,000.00). In fact, the Lady Luck casino allowed Caruthersville to avoid the devastating fate of similar-sized towns that lose Walmart or other retail outlets after decades of operation. That means the \$100,000.00 lost with the departure of Walmart, was easily outmatched by the casino funding. When Walmart left, the casino still became the main resources from business operated in this area together with other small business that still exist. The Lady Luck casino continues its role as a major employer in Caruthersville. However, the number of employees at the casino has decreased each year. The facility employed 228 in 2016, 232 in 2017, 207 in 2018, and 199 in 2019.

According to Bourdieu's work on distinction<sup>6</sup> (1984), we can see that individual and collective interpretations of social phenomena are embedded in (but not determined by) structural properties in their everyday life context. Bourdieu exemplifies this logic by demonstrating how actors' judgments of cultural products vary systematically between classes (Rye, 2006). In this case, actors' responses are rooted in their social class background, resulting in different actions among them. Bourdieu introduced the concepts of cultural capital<sup>7</sup>, social capital<sup>8</sup>, and symbolic capital<sup>9</sup> alongside economic capital.

Low-income families, for instance, try to compensate for Walmart's departure by seeking out fresh fruit and vegetables in the surrounding area. But it's not easy. The

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<sup>6</sup> Distinction is a certain quality of bearing and manners that is nothing other than difference, a gap, a distinctive feature, in short, a relational property existing only in and through its relations with other properties (Bourdieu, 1998:6)

<sup>7</sup> Defined as culturally valued taste and consumption patterns.

<sup>8</sup> Defined as various kinds of valued relationships with significant others.

<sup>9</sup> Cultural capital which is further elevated through social recognition to confer prestige, legitimacy, and value.

nearest replacement store is too expensive, and another Walmart, in Piedmont for instance, is an hour's drive away. If someone earns \$1,200 post-tax monthly salary, they will spend most on housing, utility bills, car insurance and repayments, and have little left for building savings. So, they would prefer less pricey meals, such as hamburgers or spaghetti, rather than a fresh salad. One of the community leaders in the area mentioned these significant losses:

Everyone in Pemiscot County uses this Walmart! Everyone knows someone who works there as well. Taking away something so crucial to this community as well as all these wonderful people would be truly horrific! We would have too many good loving people without a way to support their families. Some of these employees wouldn't be able to drive to and from a different location in the other towns that, by the way, are far for some. Many good people within Caruthersville doesn't even have a vehicle to travel so it's always been reassuring to have this Walmart in such close proximity. Too many would hurt from the loss of this beloved store! (FGD in Caruthersville, July 2, 2019).

For some people, Walmart was a way of coping with the grief of loneliness. When people had nothing to do, they would go to Walmart and find someone to talk to. It was a vast social network. When the store closed, some people lost their convenient channel for socialization. It's a rare place like Walmart where folks can stand, chat, and keep track of others. Walmart is not just a store; it's a community center for people in rural areas. People would meet their friends, hang out with family, and talk to their neighbors in Walmart. Seniors, low-income families, people who don't have cars, and disabled people depend on this store to get their necessities like medicine, school supplies, and so on. Laura, one of the residents, said Walmart was an exceptional place for her family and friends in the area.

Caruthersville Walmart hosts many, many memories with my family and friends. The majority of my family has worked there for years and years as well as family

friends. In fact, my grandma still works there to this day and has for as long as I can remember. It would be such a great loss for the strong family bond that facility has. I would hate to see such a great place close down. This Walmart will always be held special to my heart for several reasons. Keep it open! (Laura, a resident of Caruthersville)

It's not only about the "everyday low price" but also the identity of people in small towns and remote areas. They were proud of having a Walmart in their community. The closure of Walmart means losing something big in the community, and it's hurtful, devastating, and can make people feel hopeless. David, one of the petitioners, mentioned this in his comment:

I really depend on our local Walmart for a lot of things. My son has health problems, and we go there. It is quicker than going to Kennett when there is bad weather. Elderly people would be sick without keeping it. Please do not close down our local Walmart. Employees need their jobs they have families (David, a petitioner from Caruthersville).

Walmart in a small town like Caruthersville is not just an ordinary store. It's part of people's culture in a rural area. Here, culture can be defined as patterns of meanings embodied in symbols and denoted in a system of inherited conceptions expressed in symbolic forms which allow individuals and communities to communicate, perpetuate, and develop their knowledge about and attitudes toward life (Geertz, 1977). It is impossible to understand these individuals and the community's sense of belonging toward Walmart without understanding the local context and the ways people behave in the area. It's hard to understand because culture encompasses the various practices of everyday life and the different meaning for individuals embodied in social structures and human belief systems.

This is what Bourdieu calls habitus, which refers to the taken-for-granted, shared meanings and behaviors utilized by an individual within a social group (Raedeke et al., 2009). It provides a way of explaining how it is that various discourses might be reconciled by a social subject (Falk & Kilpatrick, 2000). Habitus is a set of internalized beliefs and attitudes that are developed by living and socializing in a specific environment. The individual and community response toward Walmart's closure is not merely the manifestation of social structure at the individual level but represents the social structure and how personal or group histories navigate and interpret those structures and changes.

## 2. WALMART'S STORE CLOSURE IN PIEDMONT, MO

Different from Caruthersville, Piedmont is in the Ozark Foothills Region, on the convergence of State Highways 34 and 49. Piedmont, translated as "foot of the mountain," is named for its geographic placement at the foot of Clark Mountain. In general, the Ozarks is an area in transition in which urban civilization is making rapid inroads at the expense of the early American rural culture which had maintained itself with little change until the development of the automobile and improved highways (Cralle, 1936). Influenced somewhat by topography, the earlier generation in Ozark drew from two different types: the small farmer and hill man.

This area were early French and German settlements. The former may be said to constitute the original white settlers, for even before 1800 they had occupied the lead mining region of St. Francois and Ste. Genevieve counties. The French, however, were not attracted to rural life, and their influence was confined almost wholly to the villages.

By 1860 the German population of these counties was between fifteen and twenty thousand, but their influence was never strong enough to modify the rural American character of the region. In line with the losses of religious groups, the gains and losses of population in the Ozarks region is relatively typical of the state as a whole (Cralle, 1936).

Piedmont and the surrounding areas are really more connected as a whole. So, it is really hard to separate the uniqueness of Piedmont in general from the other towns in Wayne County. Generally speaking, though, from other areas in Southeast Missouri, Piedmont is: This unique geographical structure that puts us in the midst of Clearwater Lake, Sam A. Baker State Park, rivers, streams, and thousands of acres of national forest. Piedmont has its own airport, short distance off a four-lane highway, railroad runs through town. Piedmont does seem to be an assortment of various types of people moving into the area from other parts of the state as well as the country. For early retirement people, Piedmont holds a vast amount of recreation for an extremely affordable cost of living (Interview with VC, a resident of Piedmont).

The population in Piedmont was 1,977 at the 2010 census. The racial makeup of this town was 96.5% White. Like other counties in the Ozarks area, this town is pretty famous for tourism, such as campgrounds and fishing in the clear water lake area. Before Walmart closed, everyone could buy their supplies for camping and recreation at Walmart. Now, the building is empty with a large vacant parking lot in the middle of town. An anonymous Piedmont's resident expressed their frustration on the petition:

The town of Piedmont relies on Walmart for more than just goods for the community, it provides people employment in a very poor county, it provides tourist revenue, and it provides 30% revenue for the town. The town can't afford to be out of the revenue or for 78 people to lose their jobs. A lot of the residents do not have the financial means or reliable vehicle to drive the 45 minutes required to reach Poplar Bluff for essential items. Please reconsider the closing of Walmart, you are closing more than a store, you would be closing the town and the people.

Piedmont had a similar experience to Caruthersville when Walmart closed and left their town. Walmart opened its store in 1987 and closed in January 2017 (30 years).

However, the impacts were different based on geographical and local economic characteristics. In Piedmont, a lot of small business still exist, even though Walmart entered this town 30 years ago. It is because Piedmont is a tourist destination (camping ground, clear water lake, etc.). A lot of families there run a small business in this tourism-based small town. The town had a relatively faster recovery after losing tax revenue and other things. When the Piedmont Walmart opened in 1987, the city and surrounding area had grown primarily because of retiree migration, according to a University of Missouri Extension study<sup>xix</sup>. This growth continued throughout the 1990s when a robust national economy supported continued gains in people and jobs.

Both areas are primarily low-income areas, majority of families have one adult working full-time and one working at least part-time. Both towns have a strong Christian outlet with food pantries and clothes closet with free or extremely cheap clothing items and household items for those in need. Caruthersville may have a larger population than the Piedmont/Patterson area but both towns seem to strive to better their community for all the residents that live and visit there. Caruthersville has lost revenue since Walmart closed, because that brought in thousands of people from out of town that not only shopped there but would also shop at the other local stores (Interview with DP, a resident of Piedmont).

During the 2000s, growth slowed dramatically as the population increased by only 2.0% compared with a 14.9% increase in the 1990s. As the Great Recession took hold of the local and regional economy in 2008, the growth stalled. Between 2007 and 2018, Madison is the only county in the region that added jobs and Butler and Carter are the only counties that have a larger population now than they did in 2007. This region has continued to be plagued by high rates of poverty and a low-income profile. Wayne County has the highest poverty rate (26.0%) and lowest income profile in the region. So much has been said about Walmart leaving Piedmont. The store showed a profit and was a significant employer for the community.

When Walmart closed its store in 2017, Piedmont was the smallest store location in Missouri. In the decade before the closure, the growth in retail sales of 10.2% was significantly below that of the nearest community hosting Walmart stores (Poplar Bluff, 18.3%). An analysis of 15-minute drive time markets for the areas reveals Piedmont lags behind both of these markets in every indicator of retail viability including significantly lower sales potential, lower incomes, less buying power, and lower population density. In the year following the store closure, retail sales dropped from \$46,645,539.00 to \$38,180,644.00, a decline of 18.1% based on University of Missouri Extension's study. Hilary, a teacher in Wayne County, says the Walmart store closure in Piedmont will change the community.

As a teacher in Wayne County, I care deeply about the well-being of the families in the district and surrounding areas. Many students in both the Greenville and Clearwater districts have family members employed by the Piedmont Walmart and live too far to drive to another Walmart's location for employment. The communities in Wayne County depend on this Walmart for the pharmacy, groceries, childcare necessities, and more. Closing this store down would require these families to travel to further distances than they're able to in order to provide for their household (Hilary, a Wayne County resident)

When communities lose a major employer and source of tax revenue like Walmart, it can be disruptive and distressing. It can influence the capacity to provide services to residents. The job losses may contribute to population decline as workers move to find employment. A large empty building can become a liability if it remains vacant for a long time. Wayne County, in general, has more deaths than births. If Wayne County did not have people moving in, the population would be in free fall. However, the study showed this town still attracts about 100 people per year to make up the difference. They are attracting more age 65-69 retirees than any neighboring counties and many of

them come from out of state. One of the reasons they come here is Clearwater Lake and the low cost of living.

Well, there is not any good food sources or grocery stores with a large variety of healthy foods in most of Wayne County or the surrounding areas. Wayne County is mostly Mark Twain National Forest land or privately-owned land, so the county is sparsely populated in most areas. I personally feel that food sources have improved with the addition of three more Dollar Generals in the county providing more opportunities for dairy products, breads, and some gardening supplies (Interview with DP, a resident of Piedmont).

That vacant Walmart building has been a source of conversation among city leaders. Finding a tenant has been the top priority. As the retail sector of the economy is in turmoil at the national level, seeking a new tenant for the Walmart building a difficult challenge in the current retail environment.

There is a mixture of people in our area for sure, but most generally want to help others and see our community prosper. That is what the Chamber has been zeroing in on for the last few years. Trying to build the morale of the people and getting them excited about the area in which we live. Some employers have been critical of the type of workers that are available in our area, but those business, such as Fine Labs, who have treated the employees well, given them decent pay with a good work environment, see very little turn over and are growing (Interview with VC, resident of Piedmont and one of the representatives from Piedmont Chamber of Commerce).

The 33,000-square-foot building is currently for sale, listed at \$1.2 million. The long and expensive footprint is a problem in a rural community like Piedmont with limited market potential. Shopko<sup>xx</sup>, one of the few department store developers in rural America that has stores of this size, is going out of business and closing all locations. Rural King<sup>xxi</sup>, another potential developer, already has a store in Farmington. Orscheln<sup>xxii</sup> has increasingly avoided small towns in favor of larger retail centers and already has a store in Poplar Bluff. Buchheit<sup>xxiii</sup> is based in Perryville but has not been developing new properties. Big R is another opportunity, but they do not have any stores in Missouri.

The impacts of the retail apocalypse are reaching deep into rural America at a time when many small towns are still recovering from the Great Recession and are now facing another economic downturn due to the Covid-19 crisis.

Poverty in our area is an issue, but I think that is all rural Missouri when we compare our county with other Missouri rural counties. There is a bigger topic of rural vs. urban agendas in our local and state government that need to be addressed (Interview with VC, resident of Piedmont).

### 3. THE WINNERS AND LOSERS

Millions of people still living in these areas lack access to decent jobs, housing, and other social services. The socioeconomic gap between rural and urban America has widened and migration to jobs no longer offers the same opportunity for people in rural areas to improve their economic condition (Brooks et al., n.d.). Of course, there are many reasons for rural stagnation, including structural factors. In the Missouri Ozarks, population decline has been associated with the closing of mines and factories and the loss of farms in areas where off-farm jobs are not available to supplement the income from farming jobs (Hawes-Davis, 1992). During this study of five small towns in Southeast Missouri, the author heard that many people in this area still hold a deep distrust of government, and most households do not keep or share detailed records of their finances. This kind of adaptive tactic by rural people to keep and transmit their local knowledge from person to person seems common in building an informal economy in rural areas.

Although rural areas continue to have large numbers of low-income families, social capital and local knowledge can still improve the quality of life of those living in poverty or trying to survive. One of the informants in Piedmont, DP, describes the

characters of her town and county as a supportive community. DP has lived in this area for 18 years. She joined the Army National Guard in her senior year of high school, and that is where she met her husband, originally from Wayne County, MO. She moved to Wayne County after her husband was deployed overseas for the first time. She came to live with her mother-in-law so she could have help with their daughter while she was enrolled in college at Fort Leonard Wood, MO, trying to finish out the semester.

In my rural area of Wayne County everyone treats each other like family or close friends. If you need food because a family member is sick or laid off from work, the people all come together and take turns delivering food to those in need. For the Williamsville town area, they have a great community outreach program that provides free Christmas gifts for kids and a chili dinner to every single resident of that community. Greenville is where the Junior High and High School and one of the school district's elementary schools, there is a lot of town spirit and community effort to have affordable events for families. Patterson and Piedmont hold community events and strive for a positive camaraderie among residents (Interview with DP, resident of Piedmont).

It is always important to imagine rural or small-town communities as collectivities, a place where moral obligation plays a fundamental role in everyday life. A small town is a 'home' where residents send their kids to the local school district, shop at local grocery stores, attend worship at local churches, go to local post offices, and each inhabitant has a mental image of the place they can quickly identify "I am from there." We call them community because of their familiarity. A community is a particular form of social organization based on a spatially bounded locality (Delanty, 2010). A young lady from Piedmont, JK, also pointed out similar perspectives on how kind and generous the people in her town are.

Generally, Piedmont people are kind people. We have a small-town feel, so more people are willing to help others and feel better about being generous.

JK was born and raised in Piedmont, as were her parents. She said in the interview that her daily activities were mundane. She went to school in the local school district. She would go to school at Clearwater, grab a snack afterward, then hang out with her friends in the Walmart parking lot, or just drive around. She also realized that poverty is very high in Piedmont. Like many other young people, she wants to leave Piedmont after college because she feels like she will not be able to find a good-paying job in her field after college.

Poverty rates are very high in Piedmont because there aren't any real jobs to support the population. My mother used to work in the doctor's office, but that requires a college education. My father works in the court system for Wayne County and that also requires a college degree. With that being said, it is difficult for everyday people to get a job here (Interview with JK, resident of Piedmont).

Losing young people seems common in this area. College-educated people tend to leave small towns because they must go to college or university elsewhere. Like JK, she must leave Piedmont to study at The University of Missouri in Columbia which is about five hours from her town. This phenomenon, of course, robs the talent and the future of communities. Another concern for the young generation in a small rural city is the lack of jobs.

There are few jobs available for people and there are almost no jobs for teens. The poverty level is high along with drug use here in this community. According to majority of national studies completed those areas that have high levels of poverty and little to no jobs, activities, or positive organizations for youth then the drug use tends to be higher. I am one of the people within my whole county that strive to end drug use, especially with in the youth (Interview with DP, resident of Piedmont).

Since fewer people in the town are working, young people have fewer connections for getting jobs and fewer positive role models in the neighborhood. Children and teenagers also receive less supervision. There is also a need to survive on a

smaller family income due to an increase of single parents' households in rural areas. The depressed conditions and disorganized family units worsen the process of social isolation (Duncan, 2014). This problem is clearly on the minds of everyone met during the studies performed in these towns. The closure of a major local economic institution like Walmart becomes a big issue for all community members since it showed a profit and was a major employer in the community.

The biggest problem my family faces while living in Piedmont is the lack of resources. I feel if Piedmont doesn't get more jobs available for the public, our town will not be able to support itself (Interview with JK, resident of Piedmont).

Besides the fear of others losing their jobs, the failure to attract new business to town also reduces the community's pride. Since Walmart was part of the community's pride and identity, the failure to keep Walmart open and a lack of new business opening creates both economic and social trouble. Keeping a business afloat in a small town has been a struggle alongside stagnation or even decline of the population.

Though it was before my time, when Walmart moved in initially back in the 80s the real losers were the small business owners, the local mom and pop shops if you will. That same group could be the winners now. There are obstacles to overcome, the small business owners have a very important role to play in the post Walmart community (Interview with VC, resident of Piedmont).

Walmart opened its Piedmont store in 1987. A study from the University of Missouri Extension found that more and more retirees came to the area in that period. During the 1990s, Wayne County experienced positive population growth. However, during the 2000s, growth suddenly declined from 14.9% in the 1990s to only 2.0%. The Great Recession happened in 2008 and population and economic stagnation have continued since then. Following the population decline, the poverty rates in Wayne County have also increased. Wayne County has the highest poverty rate (24.1%), and the

lowest income profile in the region. This number is higher than the national average of 13.1%. The largest demographic living in poverty is males 45-54, followed by females 45-54, and then females 25-34.<sup>xxiv</sup>

From my experiences with working with and for the public in this area the poverty level tends to be high in comparison to other nearby counties. Our county doesn't tend to have very many governments housing complexes there are several families living in one home. There are also many families living in campers year-round or in a portable shed/cabin type building. Majority of the school age youth in this county receive free or reduced based lunches. The local food pantries keep a high number of attendees (Interview with DP, resident of Piedmont).

The number of residents in Wayne County increased in the 1970 to 2010 period. The proportion of married couple households decreased from 70.5% to 52.7%, while single adult families increased to 14.6%, and one-person households increased from 20.4% to 27.7%. The largest proportional increase occurred in households with unrelated persons living together, which increased from 0.7% to 5.0%. These changes were consistent across all neighboring counties. Most new home construction occurred in the 1970s and 1990s. During the 2000s, construction slowed to less than one half the rate of the 1990s and since 2010 has practically stopped. Wayne County is notable because it has the lowest value housing stock in the region with a median home value of \$72,700, the largest proportion of mobile homes (28.2%), and a significant share of housing in seasonal use (16.3%)<sup>xxv</sup>.

When Walmart closed its store in 2017, Piedmont was the least profitable store than the neighboring Walmart store in Poplar Bluff. In the year following the store closure, retail sales for the area dropped from \$46,645,539.00 to \$38,180,644.00, a decline of -18.1%. These indicators (less sales potential, lower incomes, less buying power, and lower population density) might be one of the objective factors that caused

the store's closing. Losing a major employer and tax base revenue can be disruptive and devastating to a local economy. The job losses may contribute to population decline as workers move to find employment. A big empty building can become a liability if it remains vacant for a long time. For some community members, the closing of Walmart may also be a sign of losing more resources. Often, the community's struggles also reflect the struggles of the households and families in the area.

In Caruthersville, I met John (not his real name) during a focus group discussion in the Caruthersville. He has lived in Caruthersville almost all his life. John remembered when Walmart opened in 1977 and it was something big for the community. Unfortunately, many people from Ben Franklin, JC Penney, Gravers Department Store, a downtown clothing store, and all those stores that served the city from the 1940s-1960s suffered losses because of Walmart's entry. Walmart has discount prices on things that make mom and pop stores lost lots of customers and profits. On the other hand, the residents seemed to be happy and loved Walmart a lot. There were job opportunities from Walmart in town and sales tax revenue for the town.

I worked at a grocery store when I graduated in 1969 until 77 when it closed, but I enjoyed the people that I saw in the county. I started at Walmart and in the next year they cut down the flow. I enjoyed the people. And whenever I was checking up front, I'd have people come in my lines to visit with me. I had people that come out on Sunday after we open just talk and visit and the managers that work there throughout the years. Some managers were very good to get along with. It was good for the community (Interview with CJ, resident of Piedmont).

The city cannot perform its duties, such as buying equipment, fire trucks, and things of that nature within their communities, without this type of tax revenue. John said that the fire department had received grants throughout the year from Walmart, even before they left in 2016. Buddy Barker, Walmart ex-manager, helped the Caruthersville

fire department get a grant for some communication pagers. Walmart donated \$2,500.00 to the local fire department (*Pemiscot Press*, January 4, 2017). It appears that some of the Walmart managers had the best interests of the community in mind. In 1996, John was made the full-time fire chief. He didn't have time to work on weekends, but he always communicated with the Walmart manager. He always wanted to work with whoever was in charge at Walmart, do fire inspections on the building and work closely with them.

But over the last several years, they (Walmart) weren't participating from Bentonville as they should be. So, the people of our community now only have one grocery store and a Dollar General store that people despise, to go in there. They can't keep their shelves full. They don't have enough checkers to checkout line to take a line to the checkout line (FGD in Caruthersville, July 2, 2019).

Like Walmart, Dollar General (DG) is a retail business built upon small-town values and orientation. DG has more than 14,000 stores, more than 60,000 employees, and more than \$6 billion in annual sales across the U.S. It is another success story of family business like Walmart (Turner, 2018). Some analysts believe that DG is expanding because rural America is struggling. DG is very famous as one of the most profitable retailers in the U.S. and a lifeline for lower-income customers<sup>xxvi</sup>. In the cynical words, the Guardians reported that DG has already taken over rural America<sup>xxvii</sup>. DG is opening stores at the rate of three stores per day across the U.S. It moves into places that Walmart does not enter, targeting rural towns and damaged inner-city areas.

A giant company like Walmart provides the most familiar form of the late twentieth century's new capitalist culture. With its fearsome market power, technological sophistication, low wages, and low-price business model, Walmart set an economy driven by distribution and retailing rather than manufacturing (Hamilton, 2008). As consumers

expected to pay low prices for the necessities, workers' wages stagnated, and agribusiness assault sprouted in rural areas. Since 1988, when Walmart entered the grocery business by opening its first supercenter, it has been a significant catalyst in the bankruptcy of 27 market chains. Financial services and wholesalers are also affected directly by Walmart. More than half of Walmart's annual imports from China are already sourced directly through its global procurement function. In his autobiography with John Huey, *Sam Walton: Made in America* (1992), Sam Walton himself mentioned why his company imported so much from overseas:

“Walmart, like every other American retailer, is a huge importer of merchandise from overseas. In some cases – too many in my opinion – importing is really our only alternatives because a lot of American-made goods simply aren't competitive, either in price, or quality, or both. We, like any other retailer, will only buy American if those goods can be produced efficiently enough to offer good value. We're not interested in charity here; we don't believe in subsidizing substandard work or inefficiency.” (1992:241)

There are two paths for a retailer to survive in this era. The first path is to become an active retailer, which rejects a passive role as supermarket landlord and makes a more intensive effort to reach out to customers and not be imitated by competitors. The second path is to grow as large as possible by selling goods and services that are always available in infinite supply. This second path is Amazon's and Walmart's strategy. In comparison, Walmart is still trying to find its place in the internet-based shopping market, while Amazon has successfully taken this path. Amazon has the most efficient warehousing practices with unlimited inventory that creates the lowest price for its products. In terms of business model, Amazon is a pure selling machine that provides convenience better than any other retailers (Lorr, 2020).

Globally, retailers are also shifting away from large to smaller format stores. This is due to an increasingly urbanized population (Steenkamp & Sloot, 2019). When sales at the hypermarket slowed, Walmart decided to expand the number of Neighborhood stores (42,000 square feet) and Walmart Express stores (12,000-15,000 square feet). However, this transition was not easy. The express store experiment and expansion failed because its size was too small to fill customers' needs. Also, the locations were too close to other Walmart stores make this smaller store less profitable. Walmart ended up deciding to close 102 Walmart Express stores in 2016. This closure announcement disproportionately affected lower-income, low-density areas<sup>xxviii</sup>. Different from Walmart Express, the Neighborhood stores have been more successful since they provide more groceries that are in line with urban customers' needs.

Thirty or forty years ago, small family enterprises were many business players in the U.S. farm and food economy. Today, market control is concentrated on only a few big companies. Only four companies—Smithfield, Tyson, JBS, and Cargill—control 66% of pork slaughter<sup>xxix</sup>, only four companies control 84% of cattle slaughter (beef)<sup>xxx</sup>, just three companies control over 60% of chicken slaughter<sup>xxxi</sup>. Dean Foods and Dairy Farmers, one large cooperative, control milk production in America and Dairy Farmers of America (DFA) controls about a third of the national milk supply<sup>xxxii</sup>. This consolidated power in a small minority of global actors has significant effects on producers, distributors, workers, consumers, and other environments, including that of the animals themselves (M. Hendrickson et al., 2017). Farmers face less competitive markets in selling their goods and this creates more vulnerability for buyers. Distributors and suppliers feel their prices squeezed by large retailers, like DG and Walmart. Many

consumers and eaters, like the people in Caruthersville and Piedmont, do not have any choice left but to accept whatever is on the shelves of Walmart and DG.

#### 4. WHERE DO WE GO FROM HERE?

The mayor of Caruthersville received news from Ridge Investment Group during an economic development meeting (Pemisot Press, Wednesday, 10/23/2019). She said that the investor would open a Dollar Tree store in Caruthersville. The preliminary civil plans were finalized, and construction was set to start in November 2019. It took three years after the closure of Walmart for the city to get another prominent investor into the town. This is, of course, big news for the community. Dollar Tree stores are well known for offering their items at \$1.00 each, and the store provides a wide variety of products, including snacks, food, candy, party décor, craft supplies, housewares, etc.

Dollar General (DG) and Dollar Tree (DLTR) are the two largest Dollar store operators in the U.S., combining for more than 30,000 stores throughout the country<sup>xxxiii</sup>. Walmart (WMT) only has 4,700 U.S. stores. DG targets mainly low- and middle-income customers in rural and suburban areas. DLTR targets suburban, middle-income shoppers, while a third Dollar store, Family Dollar, focuses on lower-income urban and rural customers. Some experts say that this discourages bigger stores or supermarkets from opening<sup>xxxiv</sup>. It also threatens local mom-and-pop grocers, just like Walmart did thirty and forty years ago. DG doesn't offer fresh produce, which also makes healthy food options more limited for rural people. Some cities even passed legislation trying to limit and restrict Dollar stores in their cities.

In contrast, for those who support DG and other Dollar stores, having a DG might be considered an asset in a food desert area. These companies build stores 15 or 20 miles from the closest big-box retailer or grocery store. Around 75% of DG stores are in towns with the lowest populations (fewer than 20,000 people). They usually choose to locate at the edge of a city, away from the traditional downtown, to draw customers. DG can open quickly in new areas because they are smaller (7,400 square feet on average), have fewer employees, and have lower operating costs than grocery stores.

While residents in Caruthersville welcome a new DT, Piedmont residents and the surrounding towns are still waiting for another investor to come into the area. The city already has two Dollar stores right now. It is unlikely to have a third Dollar store arrive. It is probably another sign that Piedmont will be challenged to get another grocery store or a bigger store to open in the area since there are two Dollar stores already in town. Some other businesses closed in 2018 following Walmart's closure in 2017, such as Clearwater Vision Center<sup>xxxv</sup>, MiMi's Restaurant, Neighbors Cleaners, and Angie's Stop and Shop. But this was not all bad news. Some new businesses were also opened: Junior's Steakhouse on Elm Street, The Boys Are Back Food Service, Tiger Salvage, and Tiger Fitness and Treasures<sup>xxxvi</sup>.

There is not a grocery store near my home. I must drive 30 minutes west to Advance, in Stoddard County, 30 minutes south to Wappappello, 45 minutes west to Cape Girardeau, 45 minutes south to Dexter, 45 minutes southwest to Poplar Bluff, or an hour to Piedmont to a grocery store. I do my main grocery shopping once a week on the weekends to purchase what I need to the upcoming week. I must go to a grocery store that sells gluten and lactose intolerant items because one of my children has both of those conditions. We also shop for bulk items, and farmers markets. We also grow our own garden every year with all the vegetables our family eats, and we always purchase a cow to be butchered each year from a local cattle rancher. We also hunt wild game which helps with providing meat to our family. When you live this far from everything you learn to be resourceful (Interview with DP, resident of Piedmont).

The community and the local institutions are not passive. They are also trying to be more proactive in building opportunities. Like in Caruthersville, the city partnered with the University of Missouri Extension program to develop a plan for the future of Caruthersville. As reported in the *Pemiscot Press*, the second community-wide meeting was held in October 2019. Over 55 people attended the meeting and talked about their future facilitated by the Extension Community Economic and Entrepreneurial Development (ExCEED). The group has tentatively settled on four opportunities to start the planning process: (1) city clean-up/appearance and marketing the community, (2) workforce development, (3) riverfront tourism development, and (4) value-added agriculture. The community members themselves chose these four proposals, and the work is about increasing the residents' confidence and believing in the community itself to make a change.

A similar strategic meeting was also held in Piedmont. The city partnered with the University of Missouri Extension to have a demographic study conducted of the area. Results from the study were presented in a public meeting on December 18, 2019. The University of Missouri Extension helped the city plan their future economic development. The University of Missouri Extension believed that Piedmont and Wayne County, in general, had an extraordinary opportunity even though economic indicators did not look promising. Wayne County had a large amount of public land which is a good asset for outdoor recreation and tourism. Isolation is not always a bad thing. The real problem was the declining population.

When the population declines, it is followed by declines in other aspects of life because population itself is the main driver of the local economy. According to the

University Extension's study, Wayne County was unique because it had the lowest value housing stock with a median home value of \$72,700. This county also had the largest proportion of mobile homes (28.2%) and share of housing in seasonal use (16.3%)<sup>xxxvii</sup>. Outdoor recreation, beautiful amenities, and low cost of living are a few of the reasons for a new migration coming to Piedmont and Wayne counties. The study found that the Wayne County attracting more age 65-69 retirees than any adjoining counties.

As for the future, well, I still see the same small towns hanging on to what they have. I do see a few more businesses starting and maybe a few closings. I continue to see struggles within the economy, but I would love to be proven wrong and see the economy prosper. I will continue to volunteer and support any and all efforts to make this town better for many generations to come. The bottom line is that my children are growing up here and maybe someday their families would want to live here too so I need to keep that in mind to make the future better for my grandkids and so on (Interview with DP, resident of Piedmont).

Although all these images of rural and small-town America make it look like a place where time stands still or even moves backwards, we know that these areas are also always changing both economically and demographically. "Rural stability" is a myth. The boom and bust and population and depopulation of the rural Midwest is a story of economic opportunity (Riney-kehrberg, 2016). The rural Midwest attracted many newcomers in the 1970s, then many of those people left again in the 1980s and 1990s. Today, we have found that natural amenities, like lakes and forests in the Ozarks, have attracted retirees and newcomers. While significant sections of rural areas continue to be plagued by chronic poverty (Smith & Ann R, 2011), every town, rural area, and resident tends to have a positive outlook on the future and continuously seeks ways to provide more and better resources for everyone whether it is food sources, healthcare needs, activities and programs for youth, or assistance for the elderly. As Flora & Flora

described, the Midwest’s small-town communities are a mixed bag of both the good and the problematic.

Another indicator to see the hardship of both cities is by looking at their sales revenue performance. Sales tax *itself* is forced on retail sales of tangible personal property and certain services that are generally expected to be taxable unless specifically exempted by law. The Missouri state sales tax rate is 4.225%. However, cities, counties, and certain districts may also impose a local sales tax. The amount of tax sellers accumulate from the buyer depends on the combined state and the local taxes<sup>xxxviii</sup>. While Kennett, MO (which happens to have a Walmart supercenter in town) and Greenville (which doesn’t have Walmart in town) have steady revenues, trends of sales tax revenue in Caruthersville and Piedmont are looks struggle to bounce back to ‘normal.’ Below is a comparison of the sales tax dynamic of Caruthersville, Piedmont, Greenville, and Kennett.

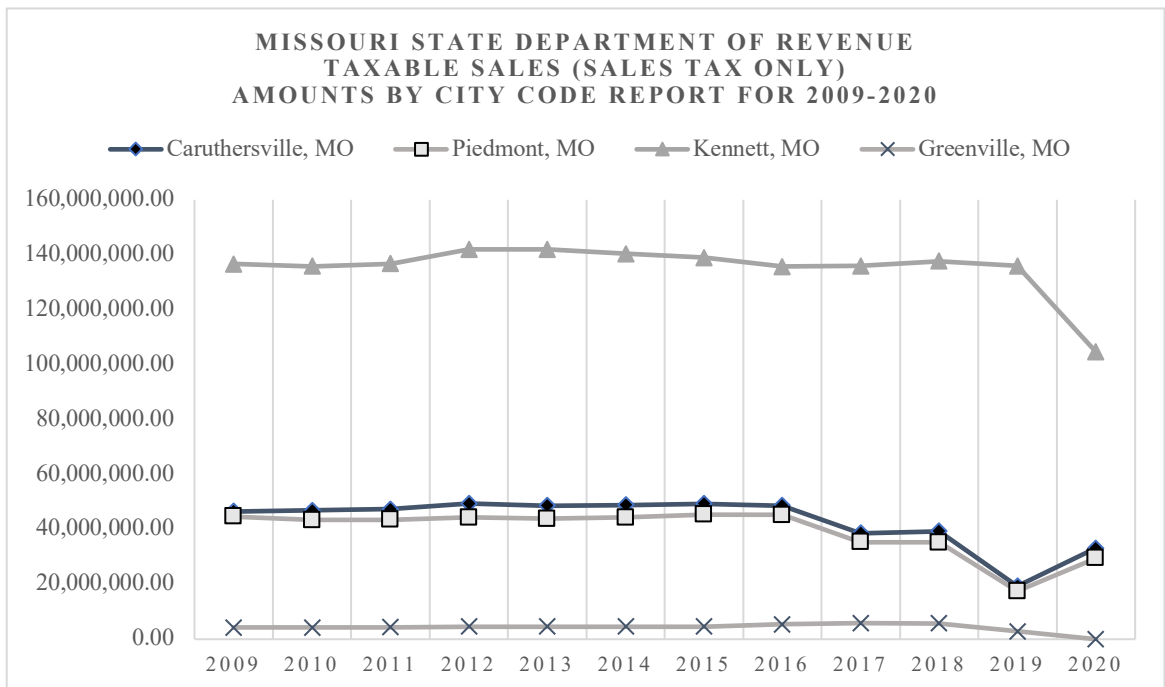


Figure 9. The sales tax revenue trend in Caruthersville, Piedmont, Kennett, and Greenville.

Although many small towns have similar problems, we cannot generalize. Small towns and communities are different in history, size, culture, and location. They range from an isolated town like Piedmont to a riverfront town like Caruthersville. These variations then specify different aspects that create an identity for the townspeople and community living in these small towns or rural areas (Wuthnow, 2013). Townspeople, in general, would say that their communities are safer, friendlier, more familiar, more caring, and a better place to raise a family compared to larger cities.

Small town living, there is nothing like it in the world. Not perfect but the simple way of life and the slower pace allows for a much less stressful lifestyle. Communication is everything and anything is possible if people would put aside their self-interest and work together and communicate even across differences (Interview with VC, resident of Piedmont).

Since most small towns are vulnerable in their dependency on a few big employers, a revitalization strategy could be a chance to thrive in a global economy. There are so many ideas on how to fix rural America. The first step is to educate more Americans about the real problems and forces that threaten rural America, and how as a nation, they need to prioritize solving these problems and investing more in them (Carr & Kefalas, 2009). The government should be able to help small towns to participate more and flourish in today's economy by offering some new skills and improving local infrastructure. Investing in technologies (internet) or improving existing natural amenities are great ideas for all small towns in America, especially for enhancing the quality of life and helping local businesses and entrepreneurship to grow.

I would like to think that Piedmont would be a premier example of how rural Missouri can adapt and that my kids can grow up and fulfill the "American Dream" right here in our own communities (Interview with VC, resident of Piedmont).

Increasing bonding and bridging social capital can start with various activities, such as focus group meetings, social events, parades, fairs, or neighborhood parties. Small towns affected by Walmart's closure, like Caruthersville and Piedmont, adopted the same way by inviting their networks from outside the community, including the University of Missouri Extension, to develop a collective and participative planning process along with residents and city leaders. By seeking help to build up connections within and among residents, such preparation can communities with critical resilience in future crises (Aldrich & Meyer, 2015).

## VI. COMMUNITY SURVEY RESULTS

### 1. DEMOGRAPHIC CHARACTERISTICS

The typical characteristics of respondents in this survey are: 43-year-old woman (59.5%), white (63.6%), married (35.5%), with a high school degree or GED (34.8%). Their average annual income is less than \$39,000 (53.8%). It seems like the Walmart shoppers in these counties have a lower income when compared to the characteristics of Walmart shoppers at the national level (46-year-old white women with an annual income less than \$76,000) and the general population demographic of Missouri (83% white, 50.9% female, and median household income \$53,560). Most of the respondents worked full-time (40.6%), but 10.5 percent of them were unemployed, which was much higher than the Missouri state unemployment rate as of October 2019 (3.4%).

Caruthersville has a younger population (average age of 39) than Piedmont (average age of 45) and neighboring towns (average age of 46). Caruthersville is more diverse in terms of racial make-up, with 64.4 percent African American respondents. This high response from the African American community was due to the density and accessibility of the neighborhood. More African American households are living in some neighborhoods compared to the other groups (e.g., housing project). During data collection, all surveyors were from a local high school, and all were African American. The surveyors may have over-sampled in their closest neighborhoods. On the educational level, Caruthersville has more respondents with a four-year college degree (11.3%) compared to Piedmont (3.6%) and neighboring towns (3.6%). While Piedmont and neighboring towns are isolated in the Ozark areas, Caruthersville is located in the

Bootheel area of Missouri, bordering the states of Arkansas and Tennessee, and accessible to many small towns and cities.

Table 7. Socio-demographic characteristics of respondents.

Socio-Demographic Characteristic	Caruthersville	Piedmont	Neighboring Towns
Age (mean, years)	39.93	45.43	46.06
Living in the area (mean, years)	26.32	32.93	26.29
Gender (%)			
• Male	30.2	36.4	36.3
• Female	66.7	57.0	52.4
• Prefer not to say	1.4	0.6	5.7
Ethnicity (%)			
• White	30.6	92.7	78.6
• African American	64.4	0.0	4.2
• Hispanic/Latino	0.5	0.0	3.6
• Asian	0.9	0.6	0.6
• American Indian or Alaska Native	0.9	1.2	6.0
• Other	0.5	0.6	1.2
Home Ownership (%)			
• Yes	36.9	54.5	53.0
• No	61.3	40.0	39.3
Education (%)			
• Less than high school degree	14.4	6.1	17.3
• High school degree or GED	41.9	24.2	35.7
• Some college/post high school training	19.8	33.3	17.9
• 2 years technical or associate degree	3.6	19.4	13.1
• 4 years college degree (BA/BS)	11.3	3.6	3.6
• Advanced degree	5.4	4.8	1.8
Employment (%)			
• Employed Full Time	33.8	55.8	25.0
• Employed Part Time	10.8	15.2	16.1
• Unemployed	24.8	1.2	4.8
• Self-Employed	8.6	6.1	14.9
• Home maker	3.2	1.8	3.0
• Retired	9.0	14.5	17.9
• Other	6.3	0.6	4.2
Own Small Business (%)			
• Yes	8.6	8.5	11.9
• No	89.6	87.3	79.2
Status (%)			

<b>Socio-Demographic Characteristic</b>	<b>Caruthersville</b>	<b>Piedmont</b>	<b>Neighboring Towns</b>
• Married	22.5	51.5	36.9
• Widowed	7.2	6.7	16.7
• Divorced	11.3	7.3	13.7
• Separated	7.2	11.5	6.0
• Never Married	49.1	8.5	18.5
<b>Political View (%)</b>			
• Conservative	22.1	18.8	17.9
• Moderate-Conservative	11.3	26.7	13.7
• Moderate	40.5	23.0	38.7
• Moderate-Liberal	5.5	9.1	6.5
• Liberal	5.0	4.2	3.6
<b>Religious Services (%)</b>			
• Never	25.7	12.1	17.3
• About once or twice a year	21.6	9.1	10.7
• About once a month	7.7	10.9	14.3
• 2-3 times a month	16.7	18.2	18.5
• Every week	27.0	35.8	25.0

Walmart is the primary source for basic needs, which includes food, clothing, and pharmacy. When Walmart leaves a town, the community loses a critical part of its lifestyle as well as necessary resources (see figure VI.2). The data shows that respondents' shopping frequency at Walmart was declining. Before the store closed, many respondents in all towns said they always shopped at Walmart (45.0%). Only 8.3% of respondents are still "always" shopping at Walmart. Most of them sometimes or rarely visit the nearest Walmart (40% and 26.1%), and we also found 6.3% of respondents said they never shop at Walmart anymore.

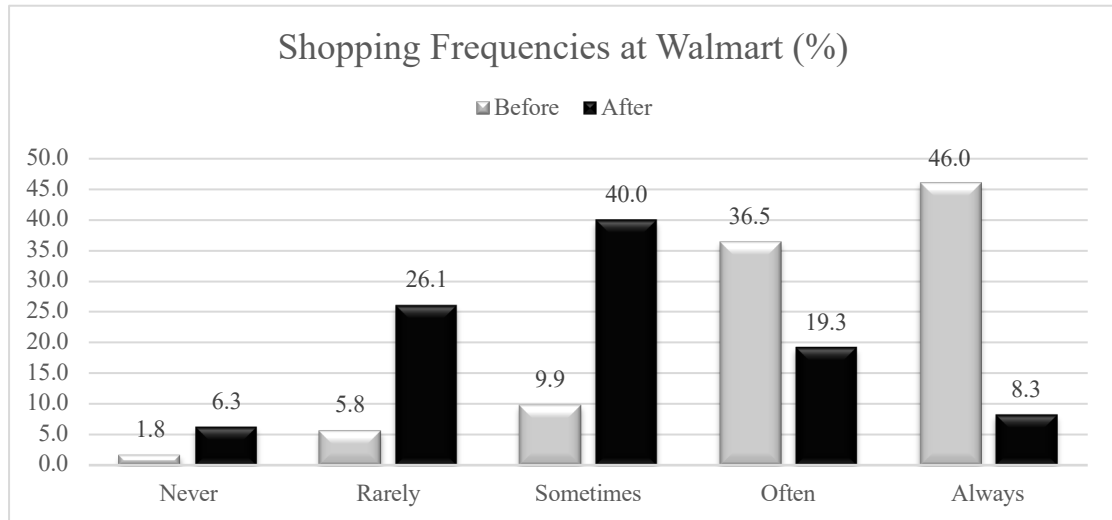


Figure 10. Reported frequency of shopping at Walmart.

We asked how often a respondent shops online, 23.2% said they never shop online. However, 32.1% of respondents reported that they often or always shop online. These are quite high percentages, which means online shopping is growing in rural areas. In the future, the number of people who shop online may increase since there are fewer products or store options available in surrounding towns. The challenge is on the availability and affordability of internet and cell services in these areas. When residents have good internet access, online shopping behavior may explode.

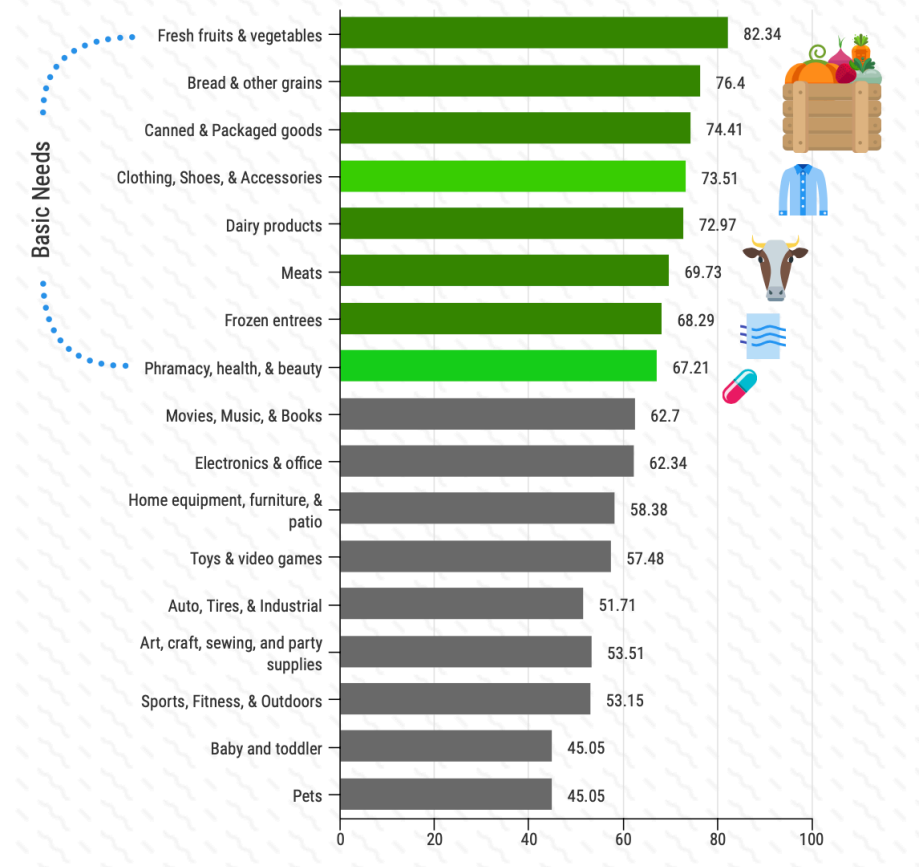


Figure 11. The types of products and services purchased from Walmart.

A positive satisfaction level toward Walmart in rural areas and small towns in America is not something that will surprise anyone. Retailers who understand the natural migration pattern of shoppers tend to create an attractive store that could lead to higher sales and profit (Sorensen, 2009). A broad entry space, large parking lots, and full view of inside activities can make shoppers' experience with Walmart much better than other grocery stores in rural areas. Not to mention the lower prices, full stock of items, and flexible store hours. Walmart's store design itself looks fit with most shopper behavior and Walmart seems to do a great job in controls two-points in the shoppers' trip, where they enter the store and where they check-out or exit the store.

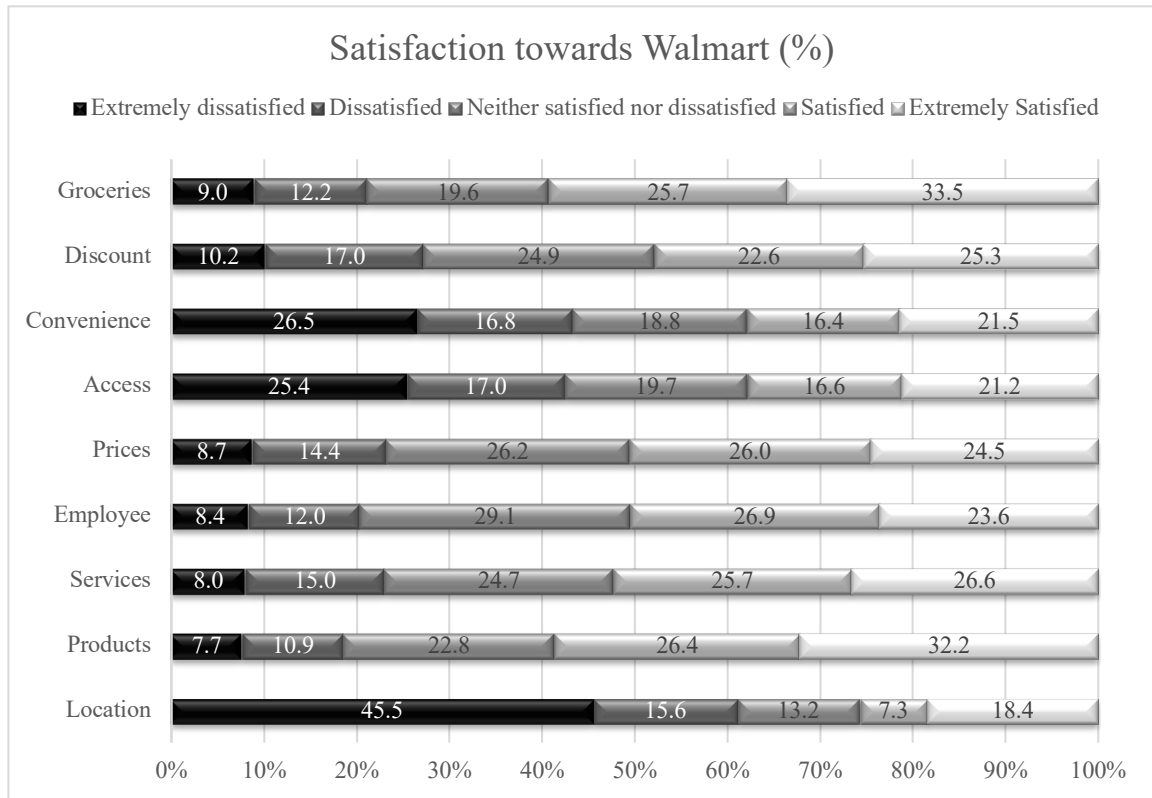


Figure 12. Reported satisfaction toward Walmart.

This flexible and convenient layout of the store can affect shoppers' satisfaction level. We asked specific questions regarding the shoppers' experience and satisfaction with the price of Walmart's products, services, groceries, etc. We found that respondents' satisfaction with groceries, products, services, prices, and employees was remarkably high. The satisfaction level usually describes the loyalty of Walmart customers in rural areas. Although most respondents felt disappointed and angry when Walmart left their town, their general satisfaction with Walmart was still high, especially for its products, services, and employees. The lowest satisfaction was with the location of stores (58.6%), convenience (40.4%), and access (40%). This is probably because of the longer distance

and more time taken to drive to the closest Walmart store. Consistent with the respondents' satisfaction toward Walmart, their perception of this giant retail presence is also positive. A large share of respondents strongly disagree (56.1%) and disagree (10.8%) that Walmart is bad for the country. Six in ten respondents disagree with the statement that Walmart is bad for the community. Only 23.5% of respondents thought Walmart had too much power and never served the community (17.6%).

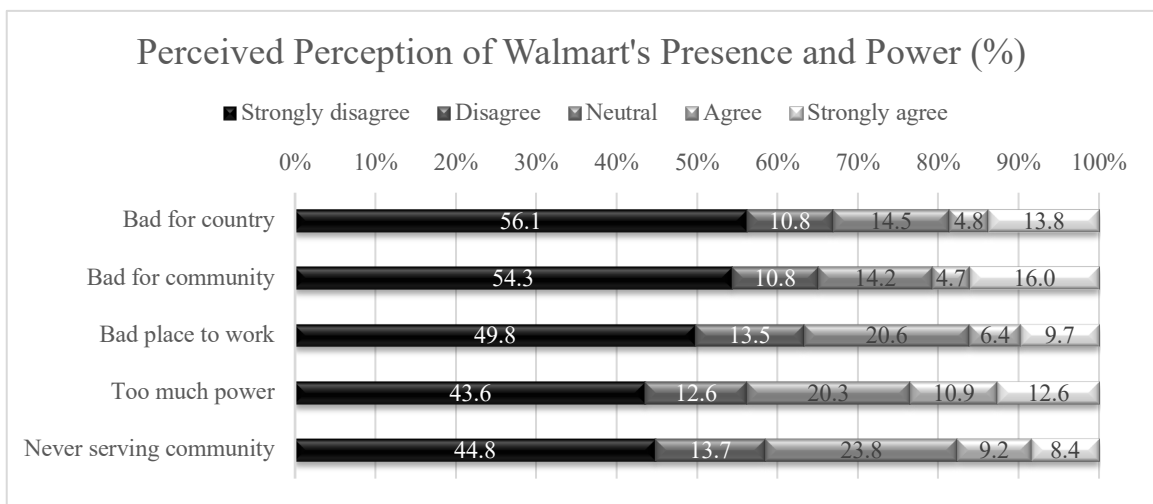
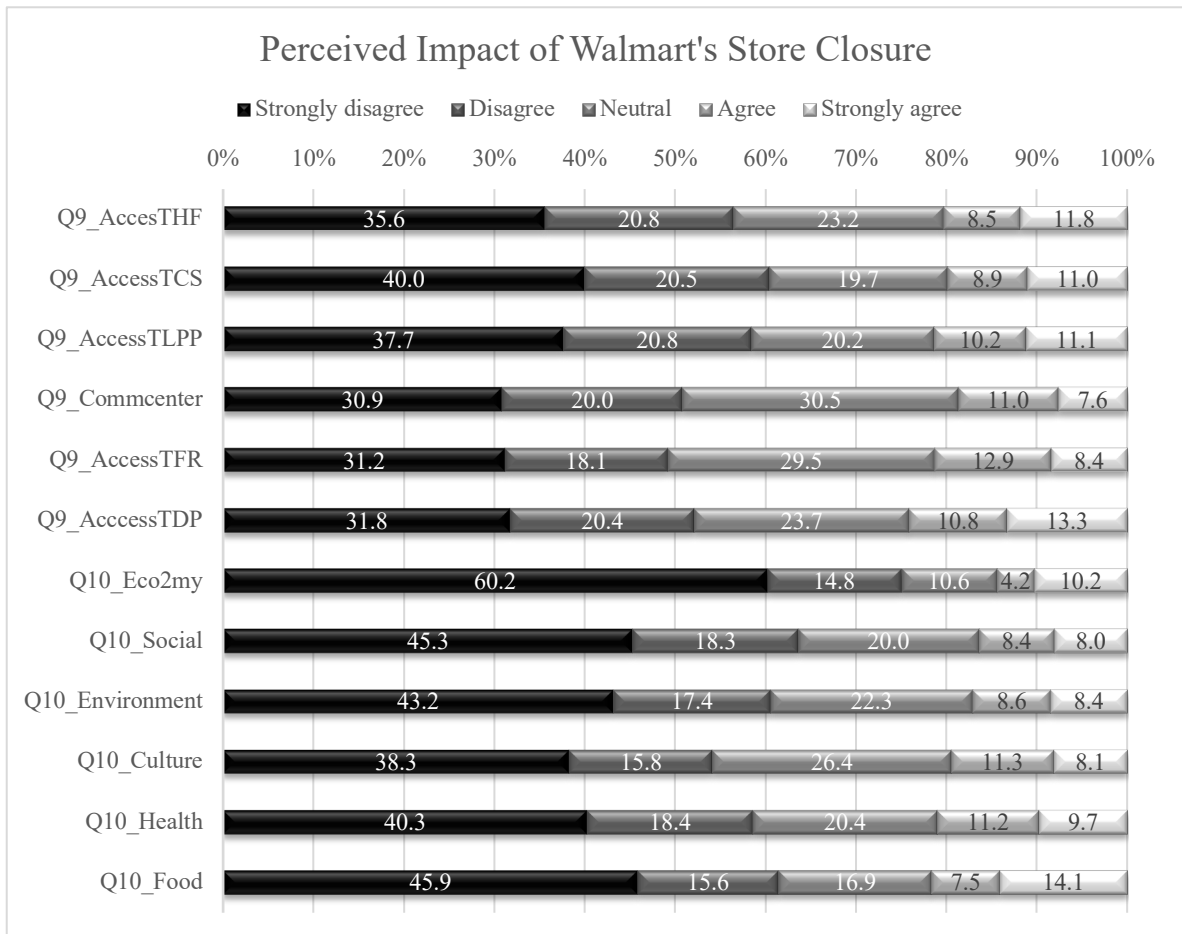


Figure 13. Perceived perception of Walmart’s presence and power in the rural community.

Respondents from Caruthersville and neighboring towns tend to see Walmart as good for the country and community. Walmart is also a good place for work, according to these two communities. Only respondents from Piedmont said they somewhat disagree or are neutral with those statements. Across the survey questions, respondents in Caruthersville were more likely to support Walmart's existence in their town since they disagree or strongly disagree with the negative statements about Walmart, including the statement it has too much power and threatens the health of the community.

## 2. RESIDENTS' PERCEIVED IMPACT OF WALMART STORE CLOSURES

Respondents in all three towns agreed that the impact of Walmart's store closure in their own town was negative or very negative, especially for the local economy (75%), social/community (63.6%), access to food (61.5%), environment (60.6%), health (58.7%), and culture (54.2%). Respondents in Piedmont tend to see more negative impacts compared to respondents in Caruthersville and the neighboring towns. In Piedmont, the effect of Walmart's exit on the local economy was very negative, according to respondents.



\*THF: access to healthy food, TCS: access to community services, TLPP: access to low price products, Commcenter: access to community center, TFR: access to family recreation, TDP: access to drugs and prescriptions.

Figure 14. Reported perceived impact of Walmart's store closure.

Regarding households, the impact of Walmart's closure was negative, especially for access to a convenience center (60.5%) and low-price products (58.5%). Again, respondents in Piedmont have a more negative view of the effect of Walmart's closure compared to the respondents in Caruthersville and the neighboring towns. However, some respondents said that the closure of Walmart has a positive or very positive effect on access to healthy food and low-price products (19%-20%) across towns.

In this survey, we asked about participation in government assistance programs, such as Supplemental Nutrition Assistance (SNAP), National School Lunch Program (NSLP), and Women, Infants, and Children (WIC). These programs help low-income families get better access to healthy food and nutrition. While SNAP provides nutritional assistance, the NSLP is administered at the school-age level, with 97 percent public school participation across the U.S. So, the number of NSLP's participation depends on the number of children they have in the school, and WIC program's involvement depends on the number of children or infants in the household. Children are eligible for the NSLP if their household also participates in other federal government assistance programs, such as SNAP or Temporary Assistance for Needy Families/TANF (Arteaga & Heflin, 2014). In general, SNAP is the most common program in these communities. Caruthersville has the highest participation in SNAP (43.7%) compared to Piedmont (25.5%) and neighboring towns (24.4%).

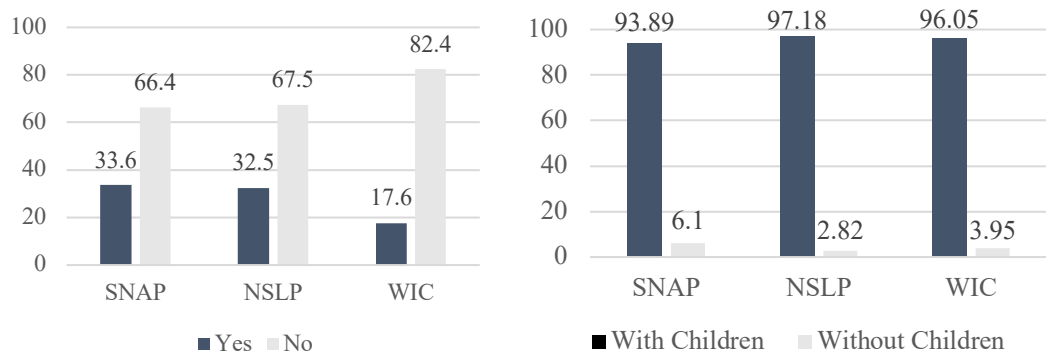


Figure 15. Respondents' participation in government assistance programs (%).

Our survey found that from 316 respondents who answered a question about the number of children in their household, 131 were SNAP participants (41.5%), and 185 were non-participant (58.5%). Out of 131 SNAP participants, 123 are those with children (93.9%). These percentages are consistent across NSLP and WIC participants, with 97.2% and 96.1% of them having at least 1 to 5 children in their household. There is also a significant correlation between having children in a household and participation in SNAP ( $r_s = -.311$ ,  $p = .000$ ), NSLP ( $r_s = -.413$ ,  $p = .000$ ), and WIC ( $r_s = -.242$ ,  $p = .000$ ) programs. All these correlations were significant at the .01 level (2-tailed).

In this study, we ran bivariate correlation using the Spearman rank-order correlation coefficient to see the strength and direction of association that exists between two variables measured on at least an ordinal scale. We found that there was a negative correlation between satisfaction toward Walmart (STF) and Walmart perception (WP) ( $r_s = -.236$ ,  $p = .000$ ). This means that when satisfaction toward Walmart increases, the residents' negative perception toward Walmart decreases. We also found a positive

correlation between shopping frequency (SF) and satisfaction with Walmart (STF) ( $r_s=.165$ ,  $p = .000$ ). Both correlations were significant at the .01 level (2-tailed).

Regarding residents' perceived community impact (CI), we found that CI has a strong and positive correlation with perceived household impact (HI) ( $r_s=.626$ ,  $p=.000$ ). This means that if the household impact of Walmart store closure increases, the community impact will also increase. There was a positive correlation between CI and access to Walmart stores (ACC) ( $r_s=.096$ ,  $p=.036$ ) and CI with perceived social support (SC) ( $r_s=.184$ ,  $p=.000$ ). Correlation between CI and ACC was statistically significant at .05 level, and correlation between CI and SC was significant at .01 level (2-tailed).

In this study, we compared the shopping frequencies (SF) to Walmart stores. We clustered residents into three (3) different groups based on their towns. Two of them (Caruthersville and Piedmont) have had Walmart stores, and both experienced Walmart entering and leaving the community. The third group does not have a Walmart but lives near the ex-Walmart towns (Neighboring towns). We ran a Kruskal-Wallis H test to compare this ordinal dependent measure (SF) between the three towns (Caruthersville, Piedmont, and Neighboring towns). The mean rank for each town can be used to compare residents' shopping frequencies in different towns.

A Kruskal-Wallis H test showed a statistically significant difference in SF score between the different towns,  $\chi^2(2) = 1.050$ ,  $p = .007$ , with a mean rank score of 292.89 for Caruthersville, 285.87 for Piedmont, and 244.01 for Neighboring towns. Using a similar approach, a Kruskal-Wallis H test also showed that there was a statistically significant difference in Walmart perception (WP) score between the different towns,  $\chi^2(2) = 11.037$ ,  $p = .004$ , with a mean rank score of 242.58 for Caruthersville, 258.85 for

Piedmont, and 294.47 for Neighboring towns. Based on these results, the null hypothesis is rejected. Regarding perceived community impact (CI), household impact (HHI), perceived access to Walmart stores (ACC), and satisfaction toward Walmart (STF), there was no statistically significant difference between towns.

Many respondents mentioned in online petitions and group discussions that after Walmart left the town, they had to drive more miles and spend more time to get to the nearest Walmart store. This indicates the potential significance of distance in shaping people's attitudes and behavior. In this study, we compared respondents' perceived perception scores based on their distance to a Walmart store. Our survey asked respondents whether they lived in five categories of distance: < 1 mile, 2-3 miles, 4-5 miles, 6-10 miles, and > 10 miles from the ex-Walmart store. We ran a Kruskal-Wallis H test to compare this ordinal dependent measure (CI, HHI, STF, SF, and ACC) between the five distance categories. As a result, we did not find any statistically significant difference between the distance to the stores with all those ordinal dependent measures.

We used the Mann-Whitney U test to understand whether Walmart household impact (HHI) and community Impact (CI, measured on an ordinal scale) differed based on participation in government assistance programs and food assistance (SNAP, NSLP, and WIC). The Mann-Whitney U test is used to compare differences between two independent groups when the dependent variable is either ordinal or continuous but not normally distributed. We ran a Mann-Whitney U to compare differences in perceived community impact (CI) between the two categories of government assistance programs, 'participant' or 'not a participant.' These conclusions can range from simply stating whether the two populations differ to determining differences in medians between

groups. Overall, we did not find any statistically significant difference in HHI and CI between government assistance recipients.

### 3. HOUSEHOLD FOOD INSECURITY

About 14 million people in the U.S. live in a low-income neighborhood with insufficient grocery stores (food deserts). In other words, many Americans do not eat anywhere near as much produce (fruits and vegetables) as they should. That healthy food costs more than processed food (Kern et al., 2017) . This does not mean that people do not want healthy food, but it cannot be easily found in their regular lives. The demand is there, but the supply is limited. Also, stagnating wages, higher income inequality, and monopolized food infrastructure make many households strapped for time, cash, and access.

Institute for Local Self-Reliance (ILSR) reported that Walmart captured 50 percent or more of grocery sales in 43 metropolitan areas and 160 smaller markets (2018). In Mexico and Marshall, Missouri, for instance, Walmart even captures 70 percent of grocery sales. This means that options for buying groceries in many areas in the U.S. are far more limited. In many neighborhoods and small towns, if people do not want to shop at Walmart, the only other option is a dollar store, which is a poor substitute for groceries. ILSR found that there are 203 places where Walmart captures 50 percent or more of grocery sales, and nationwide, Walmart captures \$1 in \$4 that Americans spend on groceries. For communities like Caruthersville, Piedmont, and the neighboring towns, this lack of competition has a severe impact. It makes the people of the communities more vulnerable, especially when Walmart has near-total market control to decide which

foods and brands are available locally and then when this giant retailer suddenly left the towns. This story is just one illustration of how difficult eating well in America can be.

The data collected in this survey is based on a measure of questions about conditions that characterize households that had problems meeting basic food needs at any time during the previous 12-month period. Households are classified as having food-insecurity (=1) if they are report three or more food-insecure conditions (indicated by a response of "often" or "sometimes" to questions 14(A-F), "almost every month" or "some month but not every month" to questions 20 and 25, and "yes" to the other questions). The statistics above should be interpreted carefully since these questions are designed to measure food security status at the household level, so each households' members may be affected differently by the food insecurity conditions.

Table 8. Questions used to assess the food security of households.

No.	Q	Statements	N (%)
1	14A.	We worried whether our food would run out before we got money to buy more.	525(94.6)
2	14B.	The food that we bought just didn't last and we didn't have money to get more.	527(95.0)
3	14C.	We couldn't afford to eat balanced meals.	526(94.8)
4	14D.	We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.	522(94.1)
5	14E.	We couldn't feed our children a balanced meal because we couldn't afford that.	522(94.1)
6	14F.	The children were not eating enough because we just couldn't afford enough food.	523(94.2)
7	15.	In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food?	536(96.9)
8	16.	In the last 12 months, were you ever hungry, but didn't eat because there wasn't enough money for food?	538(96.9)
9	17.	In the last 12 months, did you lose weight because there wasn't enough money for food?	538(96.9)
10	19.	In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?	527(95.0)
11	20.	(If yes to question 19) How often did this happen?	94(16.9)
12	22.	In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food?	167(30.1)
13	23.	In the last 12 months, were the children ever hungry but you just couldn't afford more food?	170(30.6)

No.	Q	Statements	N (%)
14	24.	In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?	172(31.0)
15	25.	(If yes to question 24) How often did this happen?	482(86.8)
16	26.	In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?	379(68.3)

An estimated 64% of respondents were food secure throughout the entire year which means that all household members always had access to enough food for an active and healthy life. This finding was confirmed by one of the key informants in this study:

I think we are fine when it comes to food sources. With the one grocery store, two Dollar Generals, a local organic produce farm, as well as the assistance of many organizations, food shortage I don't really see as a major issue in the Piedmont area (Interview with Mrs. VC, resident of Piedmont).

The food insecurity status was significantly higher in Caruthersville (54.1%) than in the other towns. This is more likely related to the demographic composition recorded in the survey and the high number of low-income households who responded to the survey. We found 250 (78.4%) households with children and 69 (21.6%) households without children from the survey results. Using eight questions from table 6.1 above, we were able to identify household food insecurity status in the households without children. Questions 1-3 and 11-13 were coded as affirmative (i.e., possibly indicating food insecurity) if the response was "often" or "sometimes." Question 5 was coded as affirmative if the response was "almost every month" or "some months but not every month." Questions 4, 6, 7, and 8 were coded as affirmative if the answer was "yes." Households without children are classified as food insecure if they report three or more indications of food insecurity in response to the eight questions above. They are classified as having very low food security if they report six or more food insecure conditions out

of the eight questions above. We found that 81.8 percent of households without children are food secure, 15.2 percent are food insecure, and 3.0 percent have very low food security.

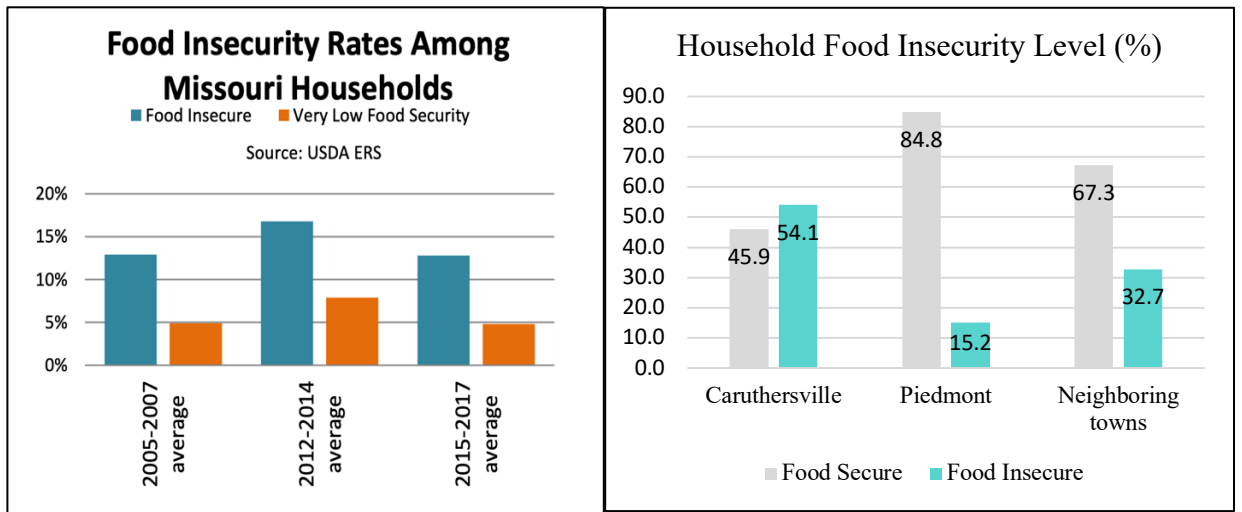


Figure 16. HFI level in the state Missouri (left) compared to HFI level in the research location (right).  
Source: Missouri hunger atlas 2019 & survey results.

Households with children are classified as food insecure if they report three or more indications of food insecurity in response to the entire set of 16 questions. They are classified as having very low food security if they report eight or more food-insecure conditions in response to the whole set of 16 questions. Among households with children, we found that 64.7 percent are food secure, 18.9 percent are food insecure, and 16.5 percent have very low food security. Children's food security status in the household is assessed by responses to the child-specific questions (questions 12-16). Households which reported two or more of these conditions are classified as having food insecurity among children. Households reporting five or more are classified as having very low food

security among children. We found that 88.3 percent were food secure among children, 10.1 percent were food insecure, and 1.7 percent have very low food security.

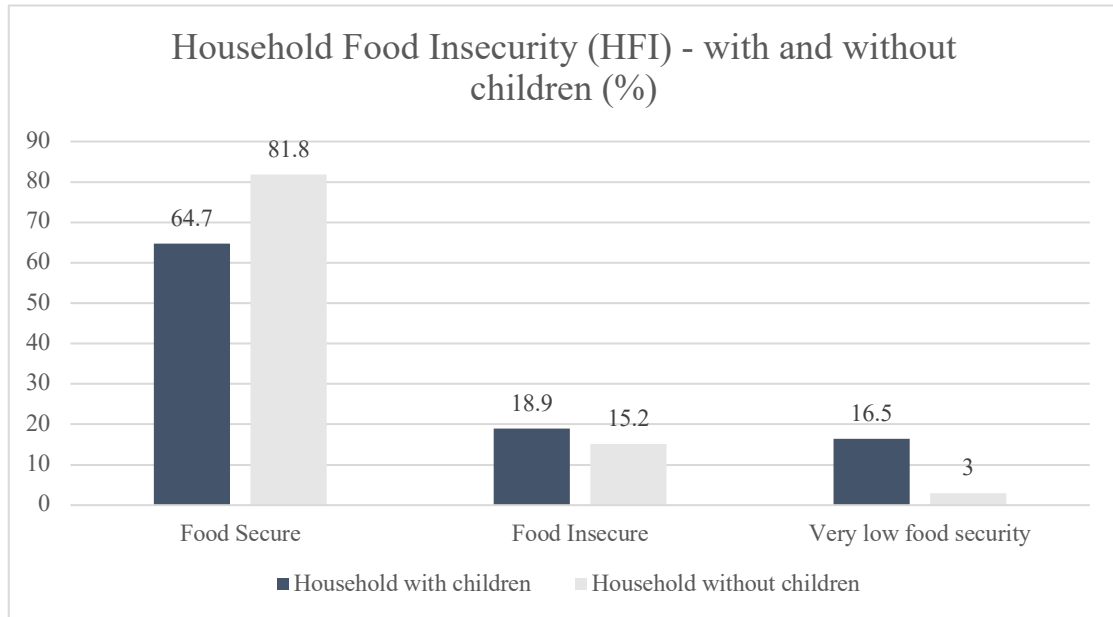


Figure 17. Household food insecurity level.

In addition, there is no food bank or food pantry inside these five small towns. However, the Southeast Missouri Food Bank collaborates with some local organizations and local churches and volunteers sometimes provide food assistance for families in the area. The Southeast Missouri Food Bank itself is in Sikeston. The service area includes 16 counties in Southeast Missouri: Bollinger, Butler, Cape Girardeau, Carter, Dunklin, Madison, Mississippi, New Madrid, Pemiscot, Perry, Reynolds, Ripley, Scott, Ste. Genevieve, Stoddard, and Wayne. They have 140 member agencies, including pantries, soup kitchens, and shelters. Those who need food assistance can visit the pantry or soup kitchen closest to their home in the county they live by bringing their ID or a document

that confirms proof of residence, such as a utility bill or bank statement. Each family can only visit the food pantry once per month.

For Caruthersville and Pemiscot County residents, the closest food pantry is in Hayti (Faith Temple Complex). For Piedmont or Wayne County residents, the nearest food pantry services are in Poplar Bluff (Bread Shed Senior Food Pantry and Feed & Seed Food Pantry). Southeast Missouri Food Bank also provides mobile food distribution in some communities. During these distributions, a truck filled with various food items is parked in a location where volunteers distribute the food. During the COVID-19 pandemic, most pantry and mobile distributions were held as drive-through events. According to our survey, about 36.6 percent of residents regularly used community food bank services and 34.4 percent were able to use the occasional food pantry to get some food and produce.

A binary logistic regression was performed in this study to understand whether household food insecurity status can be predicted from independent variables (see Figure 1). Binomial logistic regression predicts the probability that an observation falls into one of two categories of a dichotomous dependent variable (0=food secure, 1=food insecure) based on one or more independent variables that can be either continuous or categorical. We provided a conceptual framework in Figure VI.9. In the first model of binomial logistic regression, we included all independent variables. The second model (final model) was estimated by systematically removing non-significant variables from the first model until all variables in the analysis had significant or nearly significant effects.

The final model is presented in the model summary table, classification table, and variables in the equation. To describe how much variation in household food insecurity,

we can see from the model summary table. This table contains the Cox and Snell R Square and Nagelkerke R Square values. Based on the final model analysis results, the explained variation in the dependent variable-based ranges from 16.3 percent to 22.4 percent. Since Nagelkerke R2 is a modification of Cox and Snell R2, we will use Nagelkerke R2 value in this report/conclusion. Using this approach, we estimated the probability of households with food insecurity conditions. If the estimated probability is greater than or equal to 0.5, SPSS statistics classifies it as occurring (e.g., food insecurity being present). If the probability is less than 0.5, SPSS statistics classifies it as not occurring (e.g., food secure). Binary logistic regression helped this study to predict whether cases can be correctly classified from independent variables.

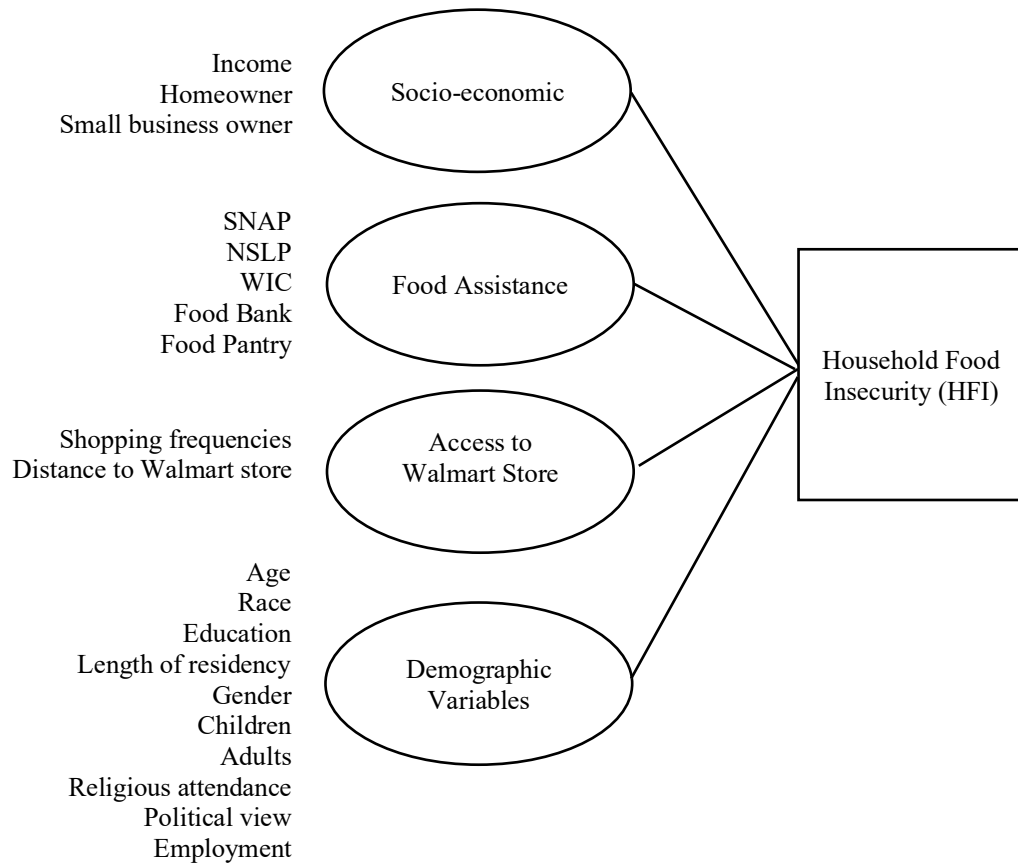


Figure 18. Conceptual framework of household food insecurity status.

The equation table's variables show the contribution of each independent variable to the model and its statistical significance. The Wald test is used to determine statistical significance for each of the independent variables. From these results, we can see that shopping frequencies before Walmart closed ( $p = .000$ ), shopping frequencies after Walmart closed ( $p=.000$ ), food pantry users ( $p=.007$ ), employment ( $p = .026$ ), and NSLP participants ( $p =.042$ ) added significantly to the prediction. We can predict the probability of an event occurring based on a one-unit change in an independent variable when all other independent variables are kept constant. The odds of having food insecurity are 0.324 times greater for those who participate in NSLP than for those who do not. Food pantry users were 2.285 times more likely to fall into food insecurity conditions than those who do not use food pantries. Based on the results above, we can conclude that the logistic regression model was statistically significant ( $p < .05$ ). The model explained 56.4 percent (Nagelkerke R<sup>2</sup>) of the variance in household food insecurity and correctly classified 81.4 percent of cases.

Table 9. Variables in the equation.

		Variables in the Equation					95% C.I. for EXP(B)		
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1 <sup>a</sup>	NSLP	-.574	.282	4.136	1	.042	.563	.324	.979
	FoodPantry(1)	.827	.305	7.362	1	.007	2.285	1.258	4.152
	Shop_Before	1.390	.219	40.388	1	.000	4.014	2.615	6.162
	Shop_After	1.548	.170	82.961	1	.000	4.703	3.371	6.563
	Emp	-.244	.110	4.951	1	.026	.784	.632	.971
	Constant	-10.705	1.302	67.575	1	.000	.000		

a. Variable(s) entered on step 1: NSLP, FoodPantry, Shop\_Before, Shop\_After, Emp.

As many residents mentioned, in the media, in online petitions, or in this survey, the impact of Walmart's store closure is devastating for the individual, household, and for entire towns. People in these areas heavily rely on Walmart to get their daily supplies,

drugs and prescriptions, school supplies, and the town depends on the tax revenue. But if we dig a little bit deeper, we can look at who is hardest hit by this closure. We suspected that those living in a food-insecure situation were the most affected by Walmart's company policies. Though we did not measure this impact before and after the store closed, we tried to measure the perceived impact through some indicators, including household food insecurity level.

Using the household food insecurity level as an independent variable, we tried to answer whether food insecure households have more negative perceived Walmart perception and the store closures impact than others. While the predictor is dichotomous (HFI, 0=food secure, 1=food insecure), the dependent variables were calculated by taking the mean of individual responses (1–5-point Likert scale, strongly disagree [1] to strongly agree [5]). The Mann-Whitney U test is used to compare differences in perceived household impact based on household food insecurity status (which has two groups, “food secure” and “food insecure”). These conclusions were merely stating whether the two groups of the population differ (in median between groups).

In this case, we can see that food-insecure families’ perceived community impact of a Walmart store’s presence was not statistically significantly different than others ( $U = 28446.000$ ,  $p = .383$ ). In this case, the food insecure household was not statistically significantly different than the food secure household. Given these results, we accepted our null hypotheses that there is no significant difference in the community impact and household impact of Walmart store closure between food secure and food-insecure household.

#### 4. HOUSEHOLD VULNERABILITY INDEX

In the vulnerability assessment literature, many researchers suggest creating an index for targeted assistance in helping vulnerable groups adapt to changes or disruption (climate change, disaster, economic downturn, etc.). Household vulnerability, in this case, is defined in terms of the characteristics of a household that affect their capacity to anticipate, respond, cope, and recover from the impact of Walmart store closures. Vulnerability indicators are potentially valuable tools for identifying and monitoring vulnerability over time and space, developing an improved understanding of the processes underlying vulnerability, creating, and prioritizing strategies to reduce vulnerability, and determining the effectiveness of those strategies. Scholars and practitioners suggest that the first step in a vulnerability assessment must determine which conceptual framework of vulnerability to use and, hence, which analytical definitions of vulnerability to use (Gonçalves, 2013). Consequently, vulnerability indicators chosen for one context might not be appropriate for assessing vulnerability in other circumstances.

Many vulnerability frameworks have been applied to investigate the contextual and multi-dimensional nature of vulnerability in context-specific assessment methods (Pandey & Jha, 2012). These local-level analyses of vulnerability would be a better way to understand the fundamental features underlying vulnerability. Furthermore, the purpose of a vulnerability index is to make a theoretical or conceptual framework operational. As vulnerability is complex and multidimensional, the index generally consists of several indicators that aggregate the contributing factors. Vulnerability index construction then distinguishes between data-driven and theory-driven approaches

(Ahsan & Warner, 2014). In this study, household and community vulnerability were examined using data collected and available from the rural community survey.

It is difficult to measure and understand household vulnerability if only a few indicators are available (Qu, 2012). Having too many indicators also presents problems such as inaccessible data and more complex calculations. For this reason, it is important to make sure that the number of indicators are manageable and easily quantified. There are at least four different approaches to developing composite indices: (1) constructing a single index by aggregating all relevant proxies, (2) constructing a single index by defining geographical groupings, (3) constructing separate indices representing different elements of vulnerability, and (4) constructing vulnerability profiles for each geographical entity. A composite index, indeed, does not indicate the structure and causes of vulnerability. It can also diminish the importance of a single vulnerability factor by the process of averaging variables or indices. However, this method is widely accepted by users in many cases. The most important thing to avoid the problem of averaging variables is to create a context-specific composite index of vulnerability.

In this case, the Walmart store closure affects rural households, most of whom depend on it as a source of low-priced food, pharmacy, and goods. When Walmart leaves a small town, it causes spending to increase, especially on transportation, increasing costs, gas expenses, medical care, and so on. The household's vulnerability also depends on their socioeconomic status. They have various degrees of resilience to mitigate the impact of Walmart's closing. Rural households adopt different coping strategies to reduce or reverse those negative impacts on their daily routines. These strategies can be short- or

long-term strategies. Many factors affect the ability to cope, i.e., age of household head, type of occupation, household size, education, distance to the store, social network, etc.

At the community level, of course, not everyone within the community is equally vulnerable (Flanagan et al., 2020). Having a detailed pattern of the vulnerability within a community could help local authorities regarding the preparedness and priorities of the response phase. Many studies have proposed different ways of measuring or quantifying household vulnerability. This measurement uses a modified indicator approach to quantify vulnerability and incorporates adaptive capacity in household vulnerabilities. In general, people living in poverty are more vulnerable than the wealthy (income variable). Women are also more vulnerable than men, mainly because women, especially single mothers, and never-married mothers, are more likely to live in poverty which causes them to suffer the impact disproportionately (gender variable). In the United States, racial minorities are more vulnerable than whites to hazards because minorities are more likely to be poor (race variable). Both young and old people may be unable to respond to shock and hazard on their own (age variable). Based on the previous data analysis in this study, SNAP participants, shopping frequencies, distance to the store, and food security status had a significant relationship to the perceived impact of Walmart store closures in rural Missouri.

The household vulnerability index investigates vulnerability scores from many different social and economic indicators as we mentioned above. However, the relationship among these factors and indicators is usually derived from logical reasoning or previous study (literature review). Scholars called this a deductive approach, where a small set of well-defined indicators is selected to represent the main dimensions of

household vulnerability. In our case, we derived our indicators from the sustainable livelihood framework. However, the actual relationship between these indicators and vulnerability is usually unknown. For this reason, many scholars switch their focus to the inductive approach (Heß, 2017). In an inductive approach, we can use factor analysis to calculate the statistical relationship between many social indicators and select and weigh the most important ones (Rygel et al., 2006). All these proxies and additional indicators based on the sustainable livelihood framework would be our indicator to be used to measure household vulnerability index.

The strength of the dataset in this study is that it includes socio-demographic, economic, and behavioral characteristics of rural households, as well as several items to identify household vulnerability. Specifically, the respondents were asked questions in five topic areas: (1) socio-demographic characteristics; (2) economic characteristics; (3) impact perception and personal behavior; (4) food insecurity status (HFI); and (5) health conditions. Questions in the first group seek to identify the socio-economic profiles of respondents i.e., age, education, gender, marital status, number of children in the household, and length of residency. The second group includes questions traditionally aimed at establishing the economic profile of households in terms of income level, homeowner, business owner, and participation in government assistance programs. The third group of questions addresses more directly households' vulnerability by collecting data relating to respondents' perceptions of Walmart store closure in their areas and changes in shopping frequencies at Walmart. The fourth group focuses on household food security status. The last group of questions measures health conditions that influence

general household vulnerability or well-being (diabetes, weight, and self-rated health conditions).

To analyze the different features of household variables above, we propose an indicator of rural household vulnerability that reflects the overall vulnerability of a household. Some of these variables are self-reported which makes it difficult to interpret as different people may have different attitudes to the same circumstances. For this reason, we add more ‘objective’ and comprehensive measures of household vulnerabilities in our indicators. Since we have many categorical and binary variables, the traditional principal components analysis (PCA) could not be implemented in this case because PCA is obtained on the assumption of samples from multivariate normal distributions. Given the nature of our data set, the nonlinear principal components analysis (NLPCA) method will be used (Rajesh et al., 2014). For the statistical analysis, all the item categories are ordered according to the same polarity, from the lowest to highest with respect to the possible impact in terms of vulnerability.

Table 10. Indicators for household vulnerability index (HVI)<sup>10</sup>.

No	Variable	N	Min	Max	SD
1	Female	531	1	2	.485
2	Married	511	1	2	.487
3	White	532	1	2	.473
4	Black	532	1	2	.450
5	High school	515	1	2	.500
6	Conservative	457	1	2	.497
7	Low income	412	1	2	.494
8	Near distance	550	1	2	.499
9	HH with children	319	1	2	.413
10	Elderly (>65)	499	1	2	.348
11	Lived-in (>5 years)	494	1	2	.288

<sup>10</sup> In CATPCA, string variable values are always converted into positive integers by ascending alphanumeric order. We defined missing values and system-missing values, and values less than 1 are considered missing, so we recoded variables (1-2) to make them non-missing.

No	Variable	N	Min	Max	SD
12	SNAP	535	1	2	.473
13	NSLP	530	1	2	.469
14	WIC	529	1	2	.381
15	Food bank	533	1	2	.482
16	Food pantry	529	1	2	.476
17	FIWC	250	1	2	.495
18	STF	503	1	5	1.097
19	CI	508	1	5	1.199
20	HHI	505	1	5	1.157
21	WP	524	1	5	1.198
22	SC	511	1	5	1.018
23	ACC	509	1	5	1.336
24	SF	551	1	5	.766
25	Overweight	530	1	2	.489
26	Poor health	533	1	2	.248
27	Diabetes_1	527	1	2	.248
28	Pre-diabetes_1	523	1	2	.378
29	Ownhome_1	529	1	2	.500
30	Ownbusiness_1	529	1	2	.301

As the first step toward computation of HVI, thirty (30) vulnerability indicators were identified, based on the literature and the field survey, to capture the different aspects of a household's vulnerability. A Likert scale was used for computing perception-based indicators and direct questions were used to capture numerically scaled indicators. Table VI.4 indicates the ordinal indicators. Therefore, exploratory data analysis was conducted to study the distribution of the data set and select meaningful indicators for further analysis. Exploratory data analysis (EDA), which was conducted for all 30 indicators, helped in shortlisting 17 indicators (component loading >.40). The 17 indicators that were shortlisted were further analyzed using non-linear principal component analysis (NLPCA). NLPCA involved dimension reduction of the data set for a better interpretation. One of the main advantages of NLPCA is that it accounts for different measurement levels of the data set. NLPCA is equipped with the ability to analyze a mixed scale data set.

The categorical principal component analysis (CATPCA) tool available in SPSS software was used to conduct the nonlinear principal component analysis. Principal components were identified to explain the majority of the variations in the data set and object scores were computed for individual observations for each indicator. CATPCA does not assume linear relationships among numeric or multivariate normal data. Furthermore, optimal scaling is used in SPSS during the CATPCA analysis and allows the researcher to specify which level of measurement is to be maintained in the optimally scaled variables. The object scores calculated from the CATPCA solutions were combined to compute household vulnerability for each household surveyed. Based on the calculation of eigenvalues, we found that three (3) dimensions solution maximized the variance accounted for by each component (143 valid active cases).

Component loading was examined to find the association between variables within each component. Only those indicators which had values greater than 0.4 were included (Linting & van der Kooij, 2012). We continue to include only 17 retained items after dropping 13 irrelevant variables (loadings lower than .40). Using eigenvalues, we can calculate the percentages accounted for each dimension and the total dimensions by divide the eigenvalue number (Starkweather & Herrington, 2018). For instance, the first-dimension accounts for 21.73 percent of the variance in the optimum matrix of 17 items ( $3.694/17=.2173$ ). Overall, these three component solutions explained 48.46 percent of the variance in the data and showed Cronbach's alpha of .934. This means that we have high internal consistency of CATPCA (Rajesh et al., 2014).

Table 11. Principal components obtained after CATPCA (3 components, 17 items).

Principal components	Components	Component names	Cronbach's Alpha	Total (Eigenvalue)	Variance Accounted for
PC 1	Food pantry, Food bank, High school, Married, Low income, White, and Black	Demographic characteristic	.775	3.694	21.73%
PC 2	NSLP, SNAP, FIWC, Elderly, Homeowner, Near distance	Government assistance program recipient	.602	2.309	13.58%
PC 3	ACC, STF, and SC	Perceived access towards Walmart store	.587	2.236	13.15%
Total			.934 <sup>a</sup>	8.239	48.46%

a. Total Cronbach's Alpha (.960) is based on the total eigenvalue.

The first component, which explained ~21.73 percent of the dataset's variance, had high positive loadings from constant food pantry, food bank, high school, married, low income, white, and Black. Therefore, this component represented "demographic characteristics." The second component explained ~13.58 percent of the dataset's variance and it can be interpreted to represent "government assistance program recipient" as it had high positive loadings from indicators like NSLP, SNAP, FIWC, elderly, homeowner, and near distance to Walmart store. The third component, which explained ~13.15 percent of the data set variance, had high loadings from indicators that captured perceived access, satisfaction, and social support. Therefore, the component can be interpreted to represent "perceived access towards Walmart stores."

To compute a non-standardized household vulnerability index (NSHVI), object scores or component scores for households were combined using Equation (1):

$$\text{Equation (1). } NSHVI_j = \sum_{i=1}^n F_i C_{ji}$$

Where  $NSHVI_j$  represents non-standardized household vulnerability index for household  $j$ .  $F_i$  represents the percentage of variance explained by factor  $i$ , where  $i$  ranges from 1 to  $n$ , where  $n$  is the total number of factors resulting from factor analysis.  $C_{ji}$  represents the object score/component score coefficient of household  $j$  for factor  $i$ . It should be noted that  $NSHVI$ , which is computed using component scores, measures the vulnerability of each household relative to other households on a linear scale. Not all the factors have equal influence on a household's inherent vulnerability, therefore the percentage of variation explained by each factor was used as a weight.

Component scores were multiplied by the percentage of variance explained by each factor to obtain the initial index as depicted in Equation (1).  $NSHVI$  can have both negative and positive values which makes the comparison and interpretation of the results difficult. Since the positive and negative values of  $NSHVI$  reflect relative values of households on a linear scale, these values can be standardized using Equation (2). The standardization process calibrates the  $NSHVI$  values on a 0–100 scale for easy comparison.

$$\text{Equation (2). } SHVI_j = \frac{NSHVI_j - NSHVI_{min}}{NSHVI_{max} - NSHVI_{min}} \times 100$$

Where  $SHVI_j$  represents the standardized household vulnerability index of household  $j$ .  $NSHVI_j$  represents the value of non-standardized household vulnerability index ( $NSHVI$ ) for household  $j$ .  $NSHVI_{min}$  is the least value of  $NSHVI$  and  $NSHVI_{max}$  is the highest value of  $NSHVI$ .

max is the highest value of NSHVI observed over all households. The value of SHVI ranges from 0 to 100, with 0 representing most vulnerable households and 100 representing least vulnerable households in relative terms. The results of CATPCA generated object scores for all households across the five components. These object scores were combined to obtain NSHVI values for each household using Equation (1).

Table 12. SHVI scores of households divided into vulnerability categories.

<b>SHVI</b>	<b>Categories</b>	<b>Vulnerability</b>
0 – 25.00	1	Very low vulnerable
25.01 – 50.00	2	Low vulnerable
50.01 – 75.00	3	Vulnerable
75.01 – 100.00	4	Very vulnerable

SHVI values (ranging from 0 to 100) were computed for each household using Equation (2). A household with higher SHVI value is relatively more vulnerable when compared to a household with a lower SHVI value. To identify the distribution of inherent vulnerability of the households for each community, the households were divided into four categories based on their SHVI scores, as shown in Table 6.5. The SHVI values for households were classified into four equal categories of groups with an equal number of units in each category.

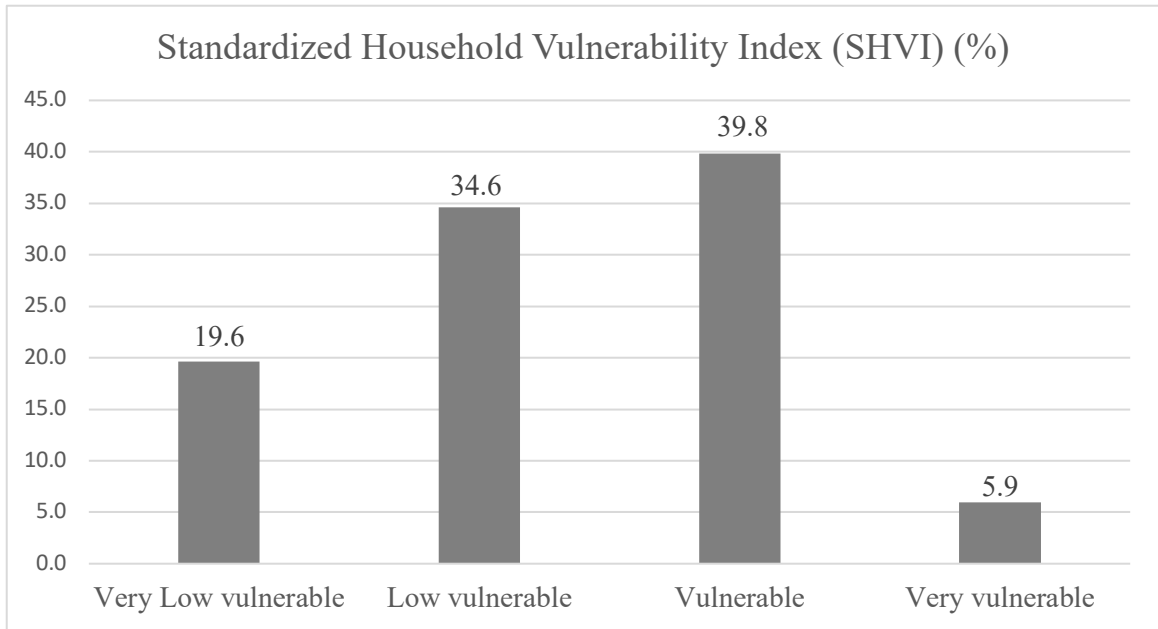


Figure 19. Standardized household vulnerability index for all town (%).

The household vulnerability moves from category 1, representing very low vulnerability, to category 4, which represents very high vulnerability. Figure 6.1 shows the distribution of households in all towns based on different SHVI categories. Overall, the results reveal that more than 39.6 percent of households fall under vulnerable categories, 34.6 percent low-vulnerable, 19.6% very low vulnerable and only 5.9 percent very vulnerable. In Caruthersville, most households fall into very low vulnerable (43.7%) and low vulnerable categories (33.3%), while only 18% of households fall into vulnerable and 5 percent very vulnerable. Caruthersville itself is located on the border of Missouri and near a busy interstate. The residents here could find three other Walmart Supercenters within 30 miles (28.8 miles south to Blytheville, AR, 23.9 miles west to Kennett, MO, and 22.9 miles east to Dyersburg, TN).

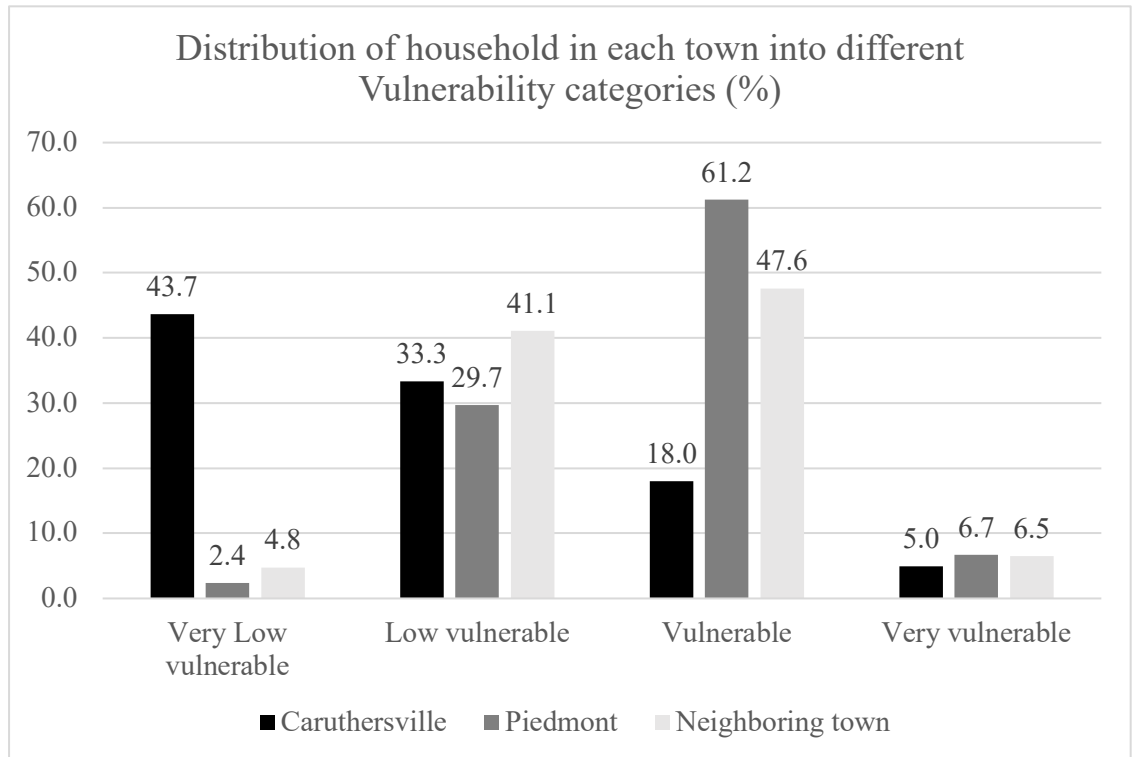


Figure 20. Distribution of households in each town into different SHVI categories.

In Piedmont, 61.2 percent of households are under vulnerable categories, and 6.7 percent are very vulnerable. Only 2.4 percent of households in Piedmont fall into very low vulnerable and 29.7 percent into low-vulnerable. Due to geographical isolation, the nearest Walmart Supercenter from Piedmont is 45.9 miles in Poplar Bluff. However, residents in Piedmont still have local grocery stores and two Dollar General stores in the area as an option for shopping. Based on all indicators in this study, the highest vulnerability was for those living in Piedmont (61.2%) and the neighboring towns (47.6%). These towns relied heavily on the Walmart store in Piedmont. Once it closed, they no longer had options. Therefore, many more households in Piedmont and the neighboring towns fall into vulnerable categories.

## VII. DISCUSSION

### 1. THE ROLE OF SOCIAL CAPITAL ON COMMUNITY RESILIENCE

Small town communities experience constant change from multiple stressors and sources. For this reason, no one in the community can presume that there will be no change in the future. When everyone is aware that sometimes change is difficult to predict, communities should have more knowledge of the potential changes and shocks they need to anticipate or adapt to. This is what we call a community's resilience. It can influence their ability to respond to changes and create social sustainability within the community (Magis, 2010). If townspeople and household resilience can be developed, we can hope that the community's sustainability will also be maintained.

There are at least two different approaches to community resilience: equilibrium resilience and evolutionary resilience (Scott, 2013). Equilibrium resilience, also known as bounce-back resilience, refers to the system's ability to accommodate disturbances without experiencing changes to the system. This approach is mainly from disaster management or environmental hazards studies, where the goal is to bounce back to the normal pre-disaster state. However, if the community are able to bounce-back to the normal state or system without any changes, they still face a similar risk in the future. To put it in other words, the level of vulnerability remains the same. Evolutionary resilience, in contrast, disagrees with the idea of 'back to normal.' This approach and perspectives encourage adaptive behavior and an evolutionary change process. The system or community should be able to respond to shocks by adaptation. People need to do something different to adapt, and the transformation's goal is for long-term purposes.

Social learning, human capacity, and knowledge on how to reduce risk and vulnerability are the main components of resilience. We can see the debates between these two opposite paradigms on resilience from the communities' real policy decisions, whether they choose to bounce back or bounce forward in response to shock and disturbance, including their response to the closure of Walmart stores in their small towns.

As we mentioned before, every community has a different ability to deal with stressors and shocks. One thing that plays a significant role in creating cooperation and collective benefits is social capital. Social capital is the social organizations' features that facilitate action and collaboration for mutual benefit (Putnam, 1993). The accumulation of individual networks, for instance, provides access to various resources and that will collectively determine the social life and future of the community. Studies on social capital usually measure general proxies of social capital, such as networks, norms, and trust. In this study, we use trust as an aspect of social capital by assessing the levels of agreement with five statements such as *"I trust the residents of this town"* or *"Most people in this town are willing to help when one of the neighbors has an emergency."*

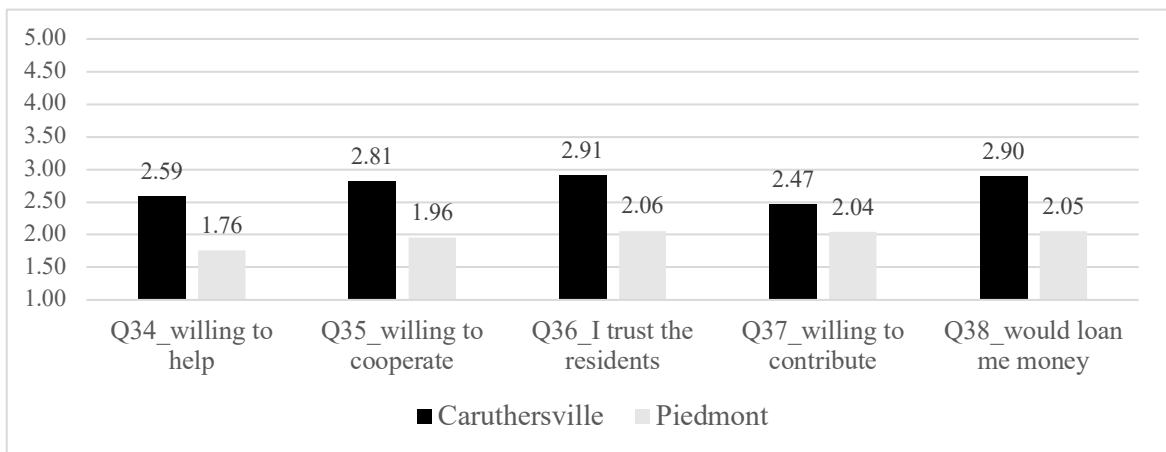


Figure 21. Perceived social supports (means) in Caruthersville and Piedmont.

As we can see from figure 7.1 above, all proxies of social capital in Caruthersville and Piedmont are relatively low. Caruthersville has a little bit higher means of social capital than Piedmont. Is this an indicator that Caruthersville and Piedmont have lower resilience and more serious difficulty dealing with stressors *and* shocks? We do not know for sure, but this is what the survey tells us. Theoretically, the deeper the social capital bonding, the better individuals will receive a warning and initial help or assistance. *Bonding in social capital* can be translated into levels of trust and broader shared norms in the community. Besides bonding, *bridging social capital* also has similar benefits in individuals and households. It provides opportunities, information, and resources for long-term recovery, for example, friendships from church, school, work, and other networks from diverse socioeconomic backgrounds. Bonding and bridging social capital are complementary.

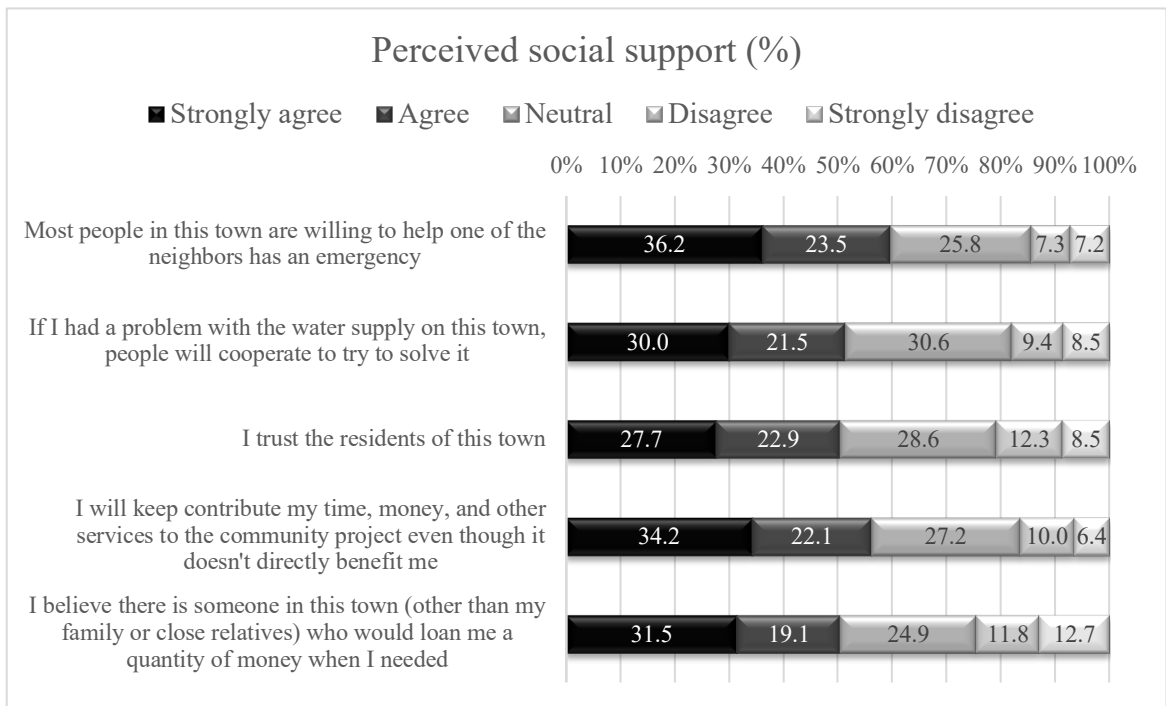


Figure 22. Reported perceived social support of Walmart's store closure.

This study noted each activity in the community reported in the local newspaper to observe some community activity and events that bring all community members together. For instance, in Caruthersville, there is a community calendar provided by the *Pemiscot Press*. From this dataset, we can see that this small town is rich in social activities. Every 1st and 3rd Monday of the month at 5:00 pm, there is a Caruthersville City Council meeting at the city hall. In summer, there are annual BBQ events, the Big River Cats Tournament, community-wide Bible study, and many sport events that attract community members to join. In September, there is a convoy of hope, Sunday movies at the library, Caruthersville homecoming football parade and game, and art council book group. In October, there is a fall festival and an annual chili cook-off and Cabela's King Kat tournament. At the chili cook-off event in 2019, the Eastwood Memorial United Methodist Church women in Caruthersville hosted the event seven days before Christmas. They served chili, crackers, assorted desserts, and drinks. There was also a bakery booth and a frozen casserole booth. Event tickets are \$1.00 each or \$5.00 for six persons and \$5.00 for lunch.

During November and December, there are many events in town, such as a Halloween parade, church flea market, free concerts, River Lights lighting, Christmas parade, Christmas bake sale, theater at the public library, and so on. More than 100 Christmas tree sponsors light the park up during Christmas time. On Veteran's Day, Lady Luck Casino provides a free meal. The local newspaper also invited their readers to place their votes for "Best of the Best" in Pemiscot County, from restaurant to teacher, law enforcement officials, and locally owned shops. The winners' photos were published in

the *Pemiscot Press* after Christmas (January) as an appreciation and celebration. These annual events have become tradition and points of pride for community members in Caruthersville, and we can call this the identity of the town. These events are always carried out with the spirit of volunteerism from community members, a clear picture of social capital within the community.

The exit of Walmart is an indicator of the declining opportunity in the area. It clearly affects community pride. However, since the community was already established in the area far before Walmart's entry, it is difficult to say that Walmart's store closure is changing traditions. Perhaps the closure was a good reason for some residents to think of moving away (we found this statement in online petitions where some residents thought of selling their property and moving to another town with better access to convenient stores, but we never followed up to see if this truly happened). By using some indicators of social support, we found that the perceived social support across town was relatively high but not as high as we expected. For instance, the level of trust for all towns is quite modest (mean=2.54) or only 50.6% of residents said they trusted their neighbors. Besides network and norms, trust is an important part of social capital for the members of communities, especially during hard times. If we look more specifically and compare towns, we can see that Piedmont has the lowest perceived trust (mean=2.06) compared to Caruthersville (mean=2.91) or neighboring towns in Wayne County (mean=2.41).

There are some reasons why rural people do not move easily to another area when economic opportunity declines in their town. Moving to a city or a new place is sometimes appealing for young families or more educated people, but not for most rural people. One of the reasons is the deep ties to their community and clique network. People

in a rural area rely on close networks of family and friends for many things. Moving away would eliminate this benefit and throw away the relationships that give them social honor, respect, and reputation in the community. For this reason, the anxiety of losing social support is an important factor for people in small towns and rural areas that makes it harder to pull up roots and move (Williams, 2020).

## 2. INDICATORS FOR WALMART COMMUNITY RESILIENCE

Resilience is a process that is influenced by multiple factors. We cannot separate the economic and social dimensions of resilience; rather, this study suggests that perceived perceptions of the community are an important component in defining resilience. Paying careful attention to residents' perceptions of these factors (social, economic, and environmental) is the first step to identifying the potential small rural town resilience in response to rapid changes and challenges. A community like a small town is a place where households and residents build connections with others, offer and seek support, and build up a sense of belonging and identity. A study suggests that perceptions of the environment are important to resilience, along with feelings of belonging, the local economy, and community spirit over time (McManus et al., 2012).

There are many models that measure community resilience, especially in response to natural disasters. For instance, the Rural Resilience Index (RRI), is one of the disaster resilience assessments that is applied to rural and remote communities (Cox & Hamlen, 2015). The Australian Natural Disaster Resilience Index also focuses on community resilience to natural hazards based on coping capacities and adaptive capacities. Community Resilience Index (CRI2) proposed four sets of networked resources or

capacities (economic development, social capital, information and communication, and community competence) and defines community resilience as a community's ability to bounce back from severe stress<sup>xxxix</sup>. The Composite Resilience Index (TCRI)<sup>xl</sup> also proposed a combination of four resilience environments (social, built, natural, and economic) that present a holistic overview of a community's resilience level.

As stated earlier, researchers have created many resilience indexes of community response to natural disasters or environmental hazards. In this study, we need to build a different type of measurement of community resilience, particularly in response to Walmart stores closures. Some variables and indicators from the previous indexes are suitable and compatible in measuring community resilience in the context of Walmart's exit. Some of those variables' combinations are (1) social, (2) economic, (3) environmental/infrastructure and (4) government/institutional.

Besides social capital and social-demographic indicators, this study highlighted some variables that are important in shaping rural community resilience from Walmart's store exit. First is the role of rural small businesses. In the current literature on community resilience, many researchers and policymakers have recognized the important contribution of rural enterprises to local resilience (Steiner & Atterton, 2015). Rapid changes such as public spending cuts, economic downturn, aging and declining population, environmental crisis, and other stressors or shocks to the local community need to be addressed from the existing structure within the community, which is always an element of rural business actors and networks which have been crucial to local resilience, both directly and indirectly. Directly, a local business creates employment,

products, and services for the community. Indirectly, local businesses and entrepreneurs help reduce risk of out-migration and depopulation in a rural area.

Our community survey asked residents in five small towns in Missouri a question about whether they own a local/small business (1=yes, 2=no). We asked this question to identify the percentage of respondents who run a local business and to explore the potential role of this subset of the population in rural community resilience. We found that only 10% of the respondents had a small business in the area. Only one out of ten people can be called a local entrepreneur in this region. More specifically, Caruthersville has fewer entrepreneurs (8.7%) compared to Piedmont (8.9%) and neighboring towns (13.1%). When Walmart left Caruthersville and Piedmont, many people from outside may see it as an opportunity for local family businesses and entrepreneurs to fill the gaps and expand their business. However, according to group discussion and findings in interviews, it was not easy for everyone in the rural area to grow or expand their business. The limited broadband and cell network (blank spots) is one reason. It would be challenging for someone in a rural area to connect with people outside or to maintain supplies without stable internet access.

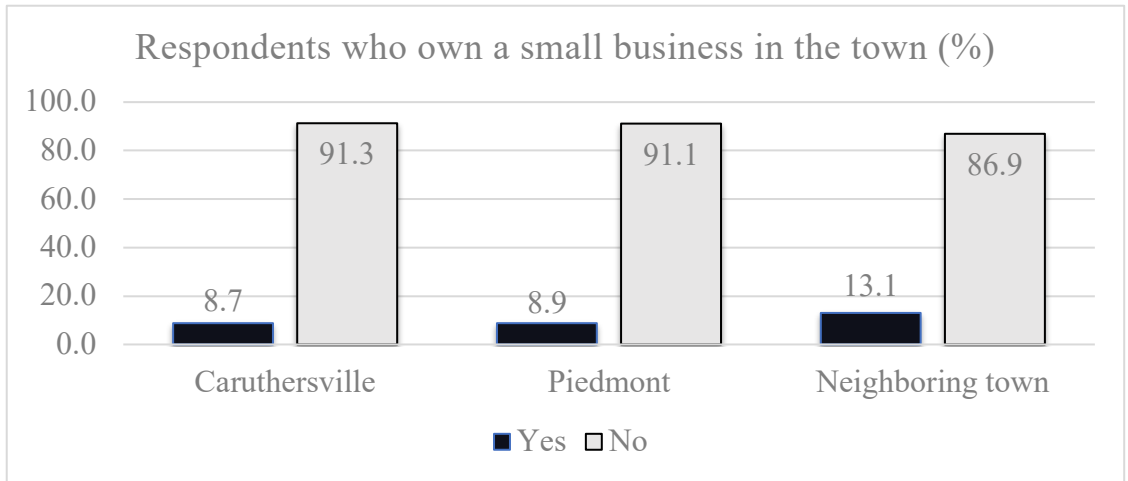


Figure 23. Percentages of respondents who own a small business.

Despite the relatively small number of entrepreneurs in the area, rural business owners are among the most important elements in rural settings. Unlike the general business model in urban or even global areas, rural business is more than a profit-making machine. A business in a small town may be different regarding the mission and attitude of its owner. Many studies found that rural businesses always consider the importance of friendliness, partnership, and community services (Steiner & Atterton, 2015). Since it is located far away from the core market, competition is not always the owner's strategy. Strong local networks that cooperate and help each other overcome challenges are worthwhile strategies for survival. Local business owners are part of the larger social capital resources for the residents, especially in their role in enhancing local adaptive capacity and response to adverse changes.

A second factor is the number of stores available in a town. After Walmart left, Caruthersville still had a grocery store in town, Hays Store. It is on West 13th Street next to the Caruthersville public library. The author visited this grocery store two years after Walmart closed and saw that Hays Store had become the main resource of goods and

produce for the residents. The price of some items appeared to be higher than at Walmart and Dollar General stores. Based on the store's review, Hays Store has four stars which means most of its customers are satisfied and gave them positive feedback. A Dollar General store is also available in town. The customers' rating of Dollar General is lower than Hays, but this store is one of the most frequently visited by the residents since it sells cheaper items like Walmart. Other smaller stores are Sam's Package which sells liquor, and Mann's Fish Market which is located on East 7th Street. This store is a seafood processing facility and sells fish to their customers.

All these smaller stores in town still provide Caruthersville residents with items they used to buy from Walmart. This includes sports gear which can be found at Grizzly Jig Co on South Truman Boulevard., clothing at Globe Clothing Store on Ward Avenue, and some fast-food restaurants (Subway, Pizza Hut, Sonic, Big Daddy's BBQ, Arby's, Burger King, China Wok, Papa John's, McDonald's) and gas stations (Jiffy Jim's, Casey's, BP, Home Oil and Gas). Like Caruthersville, Piedmont also has some stores in town that provide goods and supplies for both residents and visitors. Town and Country Supermarket became the main grocery store in town after Walmart left. This store is located next to the ex-Walmart building with an almost similar size. There are also two Dollar General stores in Piedmont, located on South Main Street and MO-34. Wallis' One Stop Variety Shop and Coleman's Shoes & Clothing are examples of clothing stores in Piedmont. These stores provide basic services for residents and keep the towns resilient.

Besides rural small business and store availability, community spirit and participation are the third important variable in building small-town community

resilience. Community members' ability to work together in difficult times is the key to enhancing the resilience of rural communities. Rural communities should be able to build networks within and beyond their locality. This would not happen without the participation of various actors at different levels. Community leaders, county leaders, and the state's role are crucial in enabling opportunities and community projects for communities. Successful completion of community projects, for instance, can positively change perceptions of resilience, whereas uncompleted projects might negatively affect the perception of resilience as well.

To build resilience, continuous funding support and effective community participation should be the first strategy. This is what Caruthersville and Piedmont did after Walmart left, when they began working together with Extension Community Economic and Entrepreneurial Development (ExCEED) in the "Building Local Prosperity (BLP)" program. This program initiative is designed to get communities involved in talking about their future through the MU team's facilitated process. The first four opportunities for Caruthersville were: (1) City clean-up/appearance and marketing the community, (2) workforce development, (3) riverfront tourism development, and (4) value-added agriculture. Over 55 community members attended the second and third meetings of this program on October 2019. Project interventions, funding support, and community participation will change or influence residents' perceptions of their community and strengthen individual resilience among them (Markantoni et al., 2019). All these capacity building methods and programs can also be planned for and developed to increase community resilience before a shock or disaster occurs.

Fourth, other community assets, such as natural amenities and tourism destinations, is the fourth factor. While Caruthersville is on the Mississippi river, Piedmont also has a big opportunity to thrive and grow with their natural amenities and resources. Piedmont and the surrounding area are remarkably beautiful, and this natural capital is the biggest asset of the community. Miles and miles of trees, clear streams and rivers, beautiful lakes, and fresh air are common pleasures in the area. Tourism and small businesses (antique shops, craft stores, flea markets) are the local economy's backbone. Clearwater Lake is one of Missouri's most popular fishing and recreation lakes located in Piedmont. Sam A. Baker State Park, Wappapello Lake, St. Francis River, Black River, and the Ozark Natural Scenic Riverways are also the most popular float streams in the U.S. Piedmont and the surrounding towns attract many retirees and visitors for seasonal pleasures with these wonderful natural amenities.

Amenity-based migration studies describe the relocation of people to desirable places, primarily within the United States. This includes people moving to rural places to improve their quality of life. Attractions may include natural resources and recreation opportunities, weather, small-business opportunities, and ties to family and friends. In Piedmont, there is camping and cabins (Beaver Springs Campground, Kempers Hideaway Resort), rental cabins (Clearwater Lake Resort, Spring Valley Resort, Sunset Point Resort, Webb Creek cabins), motel (Stonecrest), state park (Sam A. Baker), and a federal park (U.S. Army Corps of Engineers Park and recreational facilities). These facilities can continue to be developed to attract newcomers.

Sense of place is important in maintaining the unique character of towns. For this reason, excess tourist visitation is considered a detraction from the fundamental sense of

place with long-term effects. Amenity-based migration studies focus on the migrants themselves and explores the effects of change from the community’s perspective (Cheer et al., 2019). Many amenity communities are experiencing growth rather than development, and significant socio-economic change accompanies both growth and development. If the community in Piedmont agreed to develop their amenity-based tourism, community members might also face rising property taxes and living costs, higher demands for infrastructure and community services, and probably higher crime rates.

As communities become gentrified, long-time residents are also potentially excluded socio-economically and spatially (Moss et al., 2009). Differences in income between new migrants and long-time residents may lead to the perception that immigrants are reproducing negative aspects in the area. The effects of this commodification should be anticipated during future community planning or investment in amenity-based tourism. So, the closure of the Walmart store in Piedmont can be explained as a negative setback (losing jobs, revenue, visitors, and other economic aspects) or positive setback (better quality of air, less crowded, and better sense of place) at the same time, depending on how we define and understand community resilience itself.

Table 13. Potential indicators of Walmart community resilience.

<b>Variables</b>	<b>Indicators</b>
Social/demography	% of population with productive age % of population that is literate % of population that graduated from high school % of population with vehicle % of population that are white % female headed household Average number of people per family

<b>Variables</b>	<b>Indicators</b>
Economic	% of household with disability
	% out-migration (population change)
	% of population employed
	Median income
	% of household earning over \$75,000 USD/year
	Enterprises/rural business per 1,000 persons
	Grocery stores per 1,000 persons
	% of population that own house
	% of population that own mobile home
	% SNAP participant
Environmental/infrastructure	Transportation network and access to the area
	Leisure time facilities
	Natural amenities/tourism destination
	Distance to the nearest Walmart Supercenter
Government/institutional	% of households with internet connection
	Community participation (voter turnout, project involvement)
	Number of social organizations
	Community food bank/pantry per 1,000 persons
	Sales tax revenue

### 3. DATA INTEGRATION AND KEY TAKEAWAYS

An exploratory sequential design was employed to answer research questions in this study. In this way, the qualitative results (content analysis, focus group discussion, and semi-structured interview) are explained in more detail through the quantitative data (household surveys) to better understand how the personal experiences of individuals match up to the general survey results. A joint display comparison table to summarize both findings was created. To summarize and discuss findings of this study, we compared each possible finding from qualitative and quantitative data collection. Going back to the four main research questions for this study, we integrated some findings under each of the research questions. First, what happens when Walmart leaves a town and how do the residents perceive the closure of the Walmart store?

People were overwhelmingly disappointed and angry when Walmart closed in their area. In this study, the researcher asked residents in five small towns their opinion and feelings about the closure of Walmart stores in their area in 2017. Most residents said that they felt disappointed (46%) and angry (41%) about the company's decision. Only 10.7% of residents said they were neither satisfied nor dissatisfied, 1.3% satisfied, and 1.1% very happy. It shows most people in the area were loyal Walmart shoppers. Although there are some other grocery stores in town, Walmart was the biggest discount store. These high percentages of disappointment were also confirmed in interview and focus group discussion results. No one researchers' spoke with during interviews and group discussions seemed happy with Walmart's exit.

When rumors of Walmart's departure began to be heard in public and conversations in the community got more intense, residents responded with multiple actions. Some asked the Walmart manager directly to clarify what was going on. Other residents tried to talk to the mayor, and someone even launched an online petition to gain support from other residents to share their concerns in an effort to keep Walmart open. The completed analysis of these online petitions both in Caruthersville and Piedmont showed typical concern about the devastating impact of Walmart store closure in the town.

As mentioned in Chapter V, the biggest concerns of residents regarding Walmart's permanent closure in Caruthersville were the need or dependency of the community on Walmart (42.89%), long drive to another store (26.05%), lost jobs for workers (22.63%), access to the pharmacy (18.68%), and negative impact to elderly or senior residents (10.26%). In Piedmont, the biggest concerns of residents were the need

or dependency of the community on Walmart (32.04%), the devastating impact on the local economy (16.52%), lost jobs for workers (16.15%), and long drive to another store (13.14%). Although online petitions did not stop or change the company's decision to close the Walmart stores permanently, the number of supporters (signatories) was quite high and even attracted attention from residents outside Pemiscot and Wayne Counties.

There was a change in the attitude and shopping habits of households and communities after Walmart left these towns. One of the indicators was the decline of shopping frequency at Walmart itself. The survey data analysis showed a significant decline (54.9%) in shopping frequency among residents who often shop at Walmart after the store left town. Community participants expressed longer times and farther distances to another Walmart store as the reason for a decline in shopping frequency. The second indicator was more and more households in both Caruthersville and Piedmont relied on Dollar General stores as their top option for shopping. Almost all key informants in interviews mentioned their shopping destination shifted from Walmart to Dollar General. Since the Dollar General store is smaller than the Walmart discount store, community members have fewer options to purchase supplies they need. Residents still go shopping at Walmart at least once a month or when they need to buy items that are not available at Dollar General. To save time, money, and gas, they would arrange some schedule or shopping list when going out of town to Walmart, so they did not miss anything and did not have to come back more often. Those who still shop regularly at the other Walmart stores feel less familiar with the store since they do not really know the employees and do not find them as friendly as the employees in their Walmart store who were also their friends or neighbors.

Not having Walmart in town anymore gave a sense of losing pride in being part of the town. When Caruthersville and Piedmont still had Walmart in town, it became the center of community for the surrounding towns and the entire county. The higher sales tax revenue compared to non-Walmart towns made economic and infrastructure growth possible. Now, since Walmart left the town, fewer and fewer people from outside come to these towns. Those passing by on Interstate-55 and Interstate-155 used to stop by Walmart in Caruthersville to rest or get supplies. Now they might no longer be interested in stopping. During the focus group discussion, participants shared that those who want to go camping, boating, or park their trailers in Piedmont's Clearwater Lake area might think twice since there is no longer a Walmart store in town. They may find another place for vacation with easier or closer access to Walmart.

Another important question to answer is which subset of the population is vulnerable to the impact of Walmart store closures? Based on the interviews during the study with community leaders, residents, local experts, and focus group discussions, many mentioned some vulnerable groups in town that were hit badly by the store's closure. Those are older people who relied on the Walmart pharmacy and were not able to drive a greater distance, low-income families who already had a fixed income or relied on government assistance, and the workers themselves who lost their jobs or had to move out of town or commute if they still wanted to work at Walmart. These community members were negatively affected by the closure of the Walmart store. However, after analyzing and constructing a set of indicators to measure vulnerability from the community survey data, this study found that each town had a different exposure and degree of vulnerability.

Quantitatively, the number of households that fall into the four vulnerability categories (very low-vulnerable, low-vulnerable, vulnerable, and very vulnerable) are calculated from three components obtained from Categorical Principal Component Analysis (CATPCA). In general, most households fell into a vulnerable (39.8%) and low-vulnerable situation (34.6%) after Walmart left and were able to cope with this stressor. Only 5.9 percent were very vulnerable across all towns. In Caruthersville, most households fell into very low vulnerable category (43.7%) and low-vulnerable (33.3%). Piedmont had a higher percentage of vulnerable (61.2%) and low-vulnerable (29.7%) households.

Those who were living in non-Walmart towns but closer to a Walmart town tended to be more vulnerable due to the Walmart store closure. The reason is perhaps a higher dependency on Walmart than for residents in the Walmart town itself. In the three towns surrounding Piedmont, these communities are smaller in size and fewer in population than Piedmont and do not have any convenient shopping options in their town. Households in the neighboring towns (Patterson, Williamsville, and Greenville) that were 10-15 miles from Piedmont, had a higher percentage of vulnerable groups (47.6%) and very vulnerable households (6.5%). Based on this study, the Walmart store's closure in Piedmont had a bigger impact, in terms of vulnerability level, on the households in Piedmont and their neighboring towns.

In this study, we also examined the relationship between Walmart store closures and household food insecurity status. If we look at the total number from the community survey, about 64% of respondents in this study were food secure throughout the entire year in 2019. Similar to household vulnerability, we must understand that many factors

affect food insecurity, and each household member may be affected differently by food insecurity conditions. There is a common problem of food availability, access, and affordability in rural areas. Besides limited grocery stores (food deserts), there are no food banks or food pantries within these small towns that often become an important food resource for low-income and vulnerable families in these situations. While there is no food bank or food pantry available in the area, some of the community centers, such as public libraries and churches, provide temporary or regular food services for children and those in need, sometimes in the form of a drive through food giveaway. About 34.4% to 36.6% of respondents said they were regular clients of these voluntary services and visit the community food pantry/bank for food/produce one or two times a year or more.

Availability and affordability of healthy food for a better diet might also become a problem for the entire community since there were quite high percentages of respondents with diabetes (14.2%) and pre-diabetes (17.2%). Many restaurants that exist in the area are fast food restaurants that provide an unhealthy diet. All these conditions affect household food insecurity, in addition to the closure of Walmart stores that usually provide low-price foodstuffs (vegetables, fruits, dairy, etc.).

The food insecurity status was significantly higher in Caruthersville (54.1%) than in the other towns. This is more likely related to the demographic composition recorded in the survey and the high number of low-income households who opted to respond to the study. About 15.2% of Piedmont households were food insecure, and 32.7% in the neighboring towns fell into food-insecure households. Our survey found that most of the respondents in this survey have children in their homes (78.4%), and most (64.7%) were food secure. However, if we compared the percentage of those who fall into very low

food security, a household with children has a higher percentage of very low food security households (16.5%) than those without children (3.0%). Regarding food security among children, we found that 88.3 percent were food secure, 10.1 percent were food insecure, and 1.7% of children have very low food security. Our statistical analysis also found that community food pantry users were 2.3 times more likely to fall into food insecurity conditions than others. The odds of having food insecurity conditions are also 0.3 times higher for the NSLP recipients.

This study investigated the relationship between several variables to explain how the Walmart store closures affected the entire community. Based on the statistical analysis in the previous chapter, we found that the location (or distance) where someone lives might not affect their perception, experience, and satisfaction with Walmart. Our statistical analysis showed that we did not find any statistically significant difference between the distance to Walmart stores with all the dependent measures (CI, HHI, STF, SF, and ACC). In other words, the findings in online petitions analysis, interviews, and group discussions that Walmart store closures affected the entire community – not only those who live closer to the store - were confirmed by the quantitative results.

Furthermore, we found that perceived community impact (CI) of Walmart store closure also strongly correlates with perceived household impact (HHI). This result showed how perception on the community level might depend on household perception itself. Perceived community impact also has a strong and positive correlation with perceived social support (SC), which explains how social capital might significantly shape residents' perceived effects of Walmart store closure. We found many statements in our qualitative findings showing that as long as someone has a strong support system

from their families, friends, and neighbors, they will find a way to cope and adapt to the change, including the Walmart exit.

Our quantitative findings also confirmed our finding in the interview where many residents in these areas rely on government assistance programs. The most common program in these communities is SNAP or Supplemental Nutritional Assistance Program, the most extensive federal nutrition program in the U.S. About 43.7 percent of households in Caruthersville are SNAP participants. 25.5 percent of households in Piedmont and 24.4 percent of households in the neighboring town are also SNAP participants. Furthermore, our statistical analysis showed a significant correlation between having children in the household and their participation in SNAP. Many Residents who regularly visited local community food pantries provided by churches or other local organizations strongly saw the impact of Walmart's store closure more negatively for the entire community since both had a strong positive correlation with the perceived community impact.

Overall, all the qualitative and quantitative findings above were confirmed and supported by each other. These findings further prove that SNAP participants and community food bank/pantry users were more sensitive to Walmart's store closure in these small towns. A study on retail proximity and SNAP participation also concluded that changing store proximity is associated with race, income, SNAP participation, and population density (Shannon et al., 2018). Some studies have identified disparities in access to food retailers across the United States and how poor access to healthy food may increase rates of diet-related chronic conditions among vulnerable populations. Large-authorized retailers (Walmart, Aldi, Food Depot, Kroger, etc.) and convenience stores

(CVS, Dollar General, Walgreens, etc.) are required to provide a basic selection of staple foods (meats, bread, produce, and dairy) as part of their participation in SNAP. While SNAP benefits provided valuable support to many households, the retail mobility—increased proximity to small retailers (Dollar General) and decreased proximity to many large ones (Walmart)—would negatively affect townspeople.

This is actually a small illustration of the big problem of concentration and consolidation in the agri-food sector (M. Hendrickson et al., 2001). The challenge for creating resilience in the agri-food system is that some actors, like transnational agri-food firms and giant retailers, have more power to make decisions and choices about food production, distribution, and consumption than others, including consumers, farmers, and workers (M. K. Hendrickson, 2015). Policymakers and public health experts should develop partnerships ensuring healthier and more equitable food systems since small stores may provide only limited access to fresh, healthy foods. This study suggests that public health professionals need to work closely with small retail chains that are most highly concentrated in low-income neighborhoods (urban) and small towns (rural). Future research can also more closely examine reasons for existing small retailers to become authorized for SNAP benefits and the impact on the community.

## VII. CONCLUSION AND IMPLICATIONS

Walmart dominates the national economy in the U.S. and profoundly saturates the everyday life of Americans. Its massive distribution strategy to reduce prices creates a distribution trap that pushes suppliers to chase the cheapest labor worldwide. This is an example of the late twentieth century's capitalist system and culture that revolutionized the landscape of the economy and the culture of the society. As one of the biggest category killers, Walmart also has a tremendous advantage and power over suppliers and even its customers, especially those in small towns and rural areas.

Walmart achieved some of its best sales growth for many years (2006-2020), but since 2016 Walmart has transformed its services to focus on digital as a part of its long-term investment and orientation toward internet-based and urban customers. Consequently, many stores closed across America, particularly in the South and Midwest, areas where many stores were older, less profitable, and had limited growth potential due to population decline in the surrounding towns. Many of these closures were the discount store that was constructed before the 1990s. This decision had a devastating impact on Walmart's longtime and loyal customers in small towns across rural America.

Piedmont and Caruthersville are examples of small towns in Missouri that were affected by Walmart's decision. This is not a new experience for these towns. When Walmart entered these towns forty years ago, it killed many mom-and-pop stores and family businesses located in the small downtown areas. Walmart became a new community center, and most households and townspeople, and even visitors, relied on Walmart for years. Based on our survey, the typical characteristics of Walmart shoppers

in Caruthersville and Wayne County were: 43-year-old women (59.5%), white (63.6%), married (35.5%), with a high school degree or GED (34.8%), and average annual income less than \$39,000 (53.8%).

In 2017, when Walmart left the town, it shocked the city and its residents. The closure of Walmart stores in Caruthersville and Piedmont had negative impacts both on the community level and household level. Both cities lost 21 and 22 percent of their tax revenue in 2017. It probably will take a long time to bounce back to the tax revenue of the Walmart era and will be even more difficult to find another big employer for the towns. These phenomena—lack of options due to unequal distribution of power and resources—is a perfect illustration of the vulnerability and insecurity of those living in rural areas and small towns in America.

Many respondents wanted Walmart to return to their town. They realized that Walmart's closure prompted local economy decline, increased prices, and it then cost more to travel to other Walmart stores. Study participants mentioned the importance of job opportunities if Walmart returned to the community. Respondents frequently said how convenient Walmart was compared to other local grocery stores and Dollar General. Not only the convenience, but the low prices and variety of products increased the value of Walmart. Walmart was a significant economic opportunity and great experience for these communities, and if Walmart returned, they said, it would make the community great again. Participants think their city needs something more accessible, where groceries and household items are provided near them. They hoped the city could find something else to take the place of the Walmart store building and create new jobs. If not, Dollar General (DG) and other local business should expand and increase offerings since

there is no more extended competition with Walmart. They all agree that the giant retailer should pay more attention to its customers in small towns.

Besides competition between Walmart and Amazon, the age of the building, and declining population or potential customers in rural areas, another rational explanation for why Walmart left small towns might be because Walmart had already reached its saturation point on the market. Many places in the U.S. have more than one Walmart within a ten miles radius. In other words, the wave of Walmart store closures is part of the company policy to reduce the population density of stores that are too close together. Market saturation means the market is no longer providing new demand. If they did not act by closing these stores, Walmart would not be able to avoid the cannibalization of its stores since there will be direct competition within a similar company. This situation would create an unsustainable business model and add costs to the operation without significant market growth. This high store density might be the case elsewhere, but not for Walmart's closure in Caruthersville and Piedmont. The nearest Walmart store to these towns is more than 20 miles on average. Another explanation is the bad experience outlined in customer surveys, where 30% of Walmart stores failed to achieve the standard of cleanliness, fast service, and friendliness.

In this study, we were able to capture community response to this stressor, the closure of Walmart stores in Piedmont and Caruthersville. Community responses are essential to measuring the impact of this company decision on households and communities in rural America, the place where Sam Walton planted the initial values of Walmart. Using the rural vulnerability framework and mixed method, we assessed perceived risk and vulnerability at the household and community levels. To understand

the complete response of the community toward Walmart store closures, we focused our study on three main components: Walmart perception, household impact, and community impact. To capture and measure vulnerability, we created a household vulnerability index and household food insecurity levels.

Residents in both towns saw Walmart as a good asset for the country and their community. They agreed that the impact of Walmart's store closure in their town was negative or very negative, especially for the local economy (75%), access to a convenience center (60.5%), and low-price products (58.5%). The severity of Walmart's store closure impact was highly correlated with respondents' education, age, and length of residency in the town. Those who participated in the SNAP program also tended to have a different perceived community impact than those who did not. We have been able to conclude that SNAP participants are more sensitive to Walmart store closures, especially in their perception of Walmart's presence and community impact.

An estimated 64% of respondents were food secure throughout the entire year in 2019, which means that all household members always had access to enough food for an active and healthy life. However, we found that 18.7 percent of households with children were food insecure, and 16.5 percent have very low food security. These percentages were much higher than the average of the food security rates on the state among Missouri households in 2015-2017. Food-insecure families' perceived community impact of Walmart store closure was not statistically significantly different than food-secure families.

We could determine the percentage of a household falling under each category of vulnerability from this study using CATPCA analysis and the Standardized Household

Vulnerability Index (SHVI). The study results reveal that 39.8 percent of the households fall under vulnerable categories, with only 5.9 percent very vulnerable. In Caruthersville, 18.0 percent of households fall into vulnerable categories, and 5.0 percent are very vulnerable. In Piedmont, 61.2 percent of households are vulnerable categories, and 6.7 percent are very vulnerable. 47.6 percent of the households fall into vulnerable categories in the neighboring towns and 6.5 percent very vulnerable. Based on three components of vulnerability (demographic characteristics, government assistance programs recipient, and perceived access to towards Walmart store), those with the highest vulnerability lived in Piedmont and neighboring towns.

This study has several implications that may affect future studies in the Walmart effect literature and policies. Methodologically, a community survey to capture the impact of Walmart store closures at the micro-level is an effective method in gathering data and information relevant to the issues. There is always bias in the literature which mostly overemphasizes the economic aspect of Walmart and marginalizes other aspects, such as the residents' opinions and perceptions. Through this study, local opinions and perspectives are better incorporated and effectively find those who are the most dependent, affected, and vulnerable to this giant company in rural areas. Using drop-off and pick-up surveys is also the best option in increasing response rate and resident participation due to the salience of this issue for community members.

Theoretically, the empirical evidence of this study showed that the impact of Walmart's store closures not only affects those who live in the host town (Caruthersville and Piedmont) but also those beyond the host-town border. This finding should be an

important recommendation to pay more attention to the neighboring towns as well as the host-town in future study of the Walmart effect in rural areas.

Although this study did not specifically compare the price of goods before and after Walmart left, the findings from interviews suggest that this study supports some literature on the “positive effect” of Walmart’s entry. For instance, the previous study found Walmart’s store entry resulted in a grocery price decrease at conventional supermarkets competing with Walmart for a radius of five miles (Volpe III & Lavoie, 2008). After Walmart left, grocery prices increased both in the host town and in neighboring towns. Another study on the positive impact of Walmart (Carden et al., 2009a) found that Walmart increases social capital by providing a new community center and by reducing the amount of time and money that must be devoted to primary consumption. After the store left, we found that losing the community center and complaints about the long-distance travels to another Walmart store frequently appeared in the content analysis, interviews, and community survey results.

Increased resident proximity to small retailers (Dollar General) and decreased proximity to large ones (Walmart) may affect the quality of diet and townspeople's general health. Small retailers that are also authorized for SNAP benefits usually provide limited access to fresh and healthy foods. Public health advocates and community leaders need to work together to develop better local food systems. This study implies that public health professionals need to work closely with small retail chains concentrated in low-income neighborhoods (urban) and small-town (rural) to examine the possibility of these existing small retailers providing higher quality, fresh, and healthier food.

Regarding local policy discourse, a community-level study like this was needed and beneficial for local policymakers, stakeholders, and community members to better understand their own community. This study might have implications for the local policy process by providing updated data and information about the community and giving more insight in evaluating progress and setting the future agenda for rural communities.

Walmart's exit from small towns provides a new context for a broader analysis of rural change and development studies. The economic downturn indicated by Walmart's closure could be a significant and interesting arena for contemporary studies of rural crises and problems in the United States.

APPENDIX

When Walmart Leaves Small Towns



A Survey of Missouri Community Residents

2019

Questionnaire:  
When Walmart Leaves Small Towns

You have been randomly selected from our list to take part in our survey. Your participation in this survey is very important. This survey allows you to tell us about your opinion and perception towards the Walmart store closure in your area. You can also tell us about food security status of your household and other impact of Walmart's store closings. The more information you provide, the more accurate and useful our analysis will be. Completing the survey involves no risk to you and your responses are confidential.

Although the results of this study may be published, no information that could identify you will be included. Your consent is being given voluntarily. You may refuse to participate in the survey. If you decide to participate in the survey, you are free to withdraw at any time without any negative effect on your relations with any other participating institutions or agencies.

Sharing your views:

- Please read all the directions and make your responses clear
- Feel free to write any comments or explanations directly on this questionnaire
- The best answer should reflect your own experiences, feelings, and beliefs
- All of your answers will be kept completely confidential and your participation is voluntary.
- Completing the survey should take about 10-15 minutes. We realize this a significant contribution of time on your part and we very much appreciate that.

We will do our best to ensure that overall project findings are reported back to your community.

If you have additional questions, please feel free to call Yanu Prasetyo at (573) 864-2752/email: [yepw33@mail.missouri.edu](mailto:yepw33@mail.missouri.edu) or the adviser Dr. Hua James Qin ([qinh@missouri.edu](mailto:qinh@missouri.edu))

We appreciate your time and look forward to your responses.  
Thank you very much for your help!

Yanu Prasetyo

PhD Candidate, Rural Sociology

Please answer the following questions by circling/checking (✓) the appropriate response or filling in your answer in the space provided.

1. Taking all together, what is your feeling today?

- Very happy       Pretty happy       Not too happy

2. How close is your house from the nearest Walmart's store (Before the store closed)?

- < 1 mile       2-3 miles       4-5 miles       6-10 miles       > 10

3. How close is your house from the nearest Walmart's store (After closing)?

- < 1 mile       2-3 miles       4-5 miles       6-10 miles       > 10

4. How often do you shop at Walmart store (Before the store closed)?

- Never       Rarely       Sometimes       Often       Always

5. a) How often do you shop at Walmart store (After closing)?

- Never       Rarely       Sometimes       Often       Always

b) How often do you shop Online (at Walmart or another store i.e., Amazon, e-bay, etc.)?

- Never       Rarely       Sometimes       Often       Always

6. What kind of food/products/services do you buy from the Walmart? Mark all that apply

- |  |   |
|--|---|
| <input type="checkbox"/> Fresh fruits and vegetables | <input type="checkbox"/> Movies, Music, & Books         |
| <input type="checkbox"/> Dairy products              | <input type="checkbox"/> Clothing, Shoes, & Accessories |
| <input type="checkbox"/> Bread and other grains      | <input type="checkbox"/> Pets                           |
| <input type="checkbox"/> Meats                       | <input type="checkbox"/> Auto, Tires, & Industrial      |

- Canned and Packaged goods
- Frozen entrees
- Pharmacy, health, and beauty
- Home equipment, Furniture, & patio
- Electronics & Office
- Baby and toddler
- Toys & Video Games
- Sports, Fitness, and Outdoors
- Art, craft, sewing, and party supplies
- Other \_\_\_\_\_ (Please Specify)

7. Please rate how satisfied or dissatisfied you are with each of these aspects of Walmart Store?

	Extremely dissatisfied	-----			Extrem Satisfi
	1	2	3	4	5
(a) Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Employee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Prices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) Convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Discount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Groceries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. In general, do you think Walmart is...?

	Strongly Disagree	-----			Strongly Agree
	1	2	3	4	5
(a) Bad for the country	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Bad for my community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Bad place to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(d) Getting too much power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Never serving community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Threatening health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Please rate each of the following issues based on how big the impact of Walmart closure is for your family.

	Very Negative Impact				Very Positive Impact
	1	2	3	4	5
(a) Access to healthy food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Access to convenient store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Access to low price products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Community center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Access to family recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Access to drugs and prescriptions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Please rate each of the following issues based on how big the impact of Walmart closure is in your community.

	Very Negative Impact				Very Positive Impact
	1	2	3	4	5
(g) Economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Social	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j) Culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(k) Health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l) Food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. What do you feel after Walmart leaves your town?

- Very happy    
 Satisfied    
 Neither satisfied nor disappointed    
 Disappointed    
 Angry

12. How often you come to the Food Bank for food or produce?

- Never    
 1-2 times a year    
 Once a month    
 Once a

13. How often you come to the Pantry for food and produce?

- Never    
 1-2 times a year    
 Once a month    
 Once a

#### Household Food Security and Health Assessment

14. Please answer the following questions by circling/checking (√) the appropriate response.

No	Statements	Often	Sometimes	Never True
A.	“We worried whether our food would run out before we got money to buy more.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B.	“The food that we bought just didn’t last and we didn’t have money to get more.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C.	“We couldn’t afford to eat balanced meals.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.	“We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.	“We couldn’t feed our children a balanced meal, because we couldn’t afford that.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F.	“The children were not eating enough because we just couldn’t afford enough food.” (in the last 12 months)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?  
 Yes  No
16. In the last 12 months, were you ever hungry, but didn't eat because there wasn't enough money for food?  
 Yes  No
17. In the last 12 months, did you lose weight because there wasn't enough money for food?  
 Yes  No
18. How many adults, 18 years of age or older, live in your household? (including yourself)  
 .....
19. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?  
 Yes  No
20. (If yes to question 19) How often did this happen?  
 Almost every month,  
 Some months but not every month,  
 Only 1 or 2 months
21. How many children, 17 years of age or younger, live in your household?  
 ..... (if you don't have any children living in your household, please skip questions No 22-26 and continue to question No 27)
22. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food?  
 Yes  No
23. In the last 12 months, were the children ever hungry but you just couldn't afford more food?  
 Yes  No
24. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?  
 Yes  No
25. (If yes to question 24) How often did this happen?  
 Almost every month,  
 Some months but not every month,  
 Only 1 or 2 months

26. In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?

Yes

No

.....

27. Do you participate in the Supplemental Nutrition Assistant Program (SNAP)?

Yes

No

28. Do your children participate in the National School Lunch Program (NSLP)?

Yes

No

29. Do you participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)?

Yes

No

30. How do you describe your weight?

Very  
underweight

Slightly  
underweight

About the  
right weight

Slightly  
overweight

Very  
over

31. What do you say about your general health?

Excellent

Very good

Good

Average

Poor

32. Have you ever been told by a doctor you have diabetes?

Yes

No

33. Have you ever been told by a doctor you have pre-diabetes?

Yes

No

#### Social Support and Network

Please rate each of the following issues based on how strong the social support and network in your community is...

	Strongly agree	-----	-----	-----	Strongly disagree
	1	2	3	4	5
34. Most people in this town are willing to help when one of the neighbors has an emergency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. If I had a problem with the water supply on this town, people will	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	cooperate to try to solve it					
36.	I trust the residents of this town	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	I will keep contribute my time, money, and other services to the community project even though it does not directly benefit me (but has benefits for many other people on the town)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	I believe there is someone in this town (other than my family or close relatives) who would loan me a quantity of money when I needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Personal Characteristics

Finally, we have a few questions about yourself and your household. We assure you of complete confidentiality. Please circle or fill in the response that best describes your answer.

39. How old are you? \_\_\_\_\_ years old

40. How long have you lived in your community? \_\_\_\_\_ years

41. Are you?  
 Male                                       Female                                       Prefer not to say

42. I am  
 Married       Widowed       Divorced       Separated       Never mar

43. Which best describes your race(s)?  
 American Indian or Alaska Native       White  
 Black or African American       Asian  
 Hispanic or Latino       Other, please specify: .....

44. What is the last grade of class you completed in school?
- Less than high school degree
  - High school degree or GED
  - Some college or post high school training
  - 2 years technical or associate degree
  - 4 years college degree (BA/BS)
  - Advanced degree (i.e. Master's, JD, MD, PhD)
45. Which best describes your political view?
- Conservative
  - Moderate-Conservative
  - Moderate
  - Moderate-Liberal
  - Liberal
46. Do you own your home?
- Yes
  - No
47. Do you own a small business?
- Yes
  - No
48. How often do you attend religious services?
- Never
  - About once or twice a year
  - About once a month
  - 2-3 times a month
  - Every week
49. Which best describes your current employment situation?
- Employed full time
  - Employed part time
  - Unemployed
  - Self-Employed
  - Homemaker
  - Retired
  - other, please specify: .....
50. Last year (2018), what was the total income of your household from all sources, before taxes?
- Less than \$10,000
  - \$10,000 - \$19,999
  - \$20,000 - \$29,999
  - \$30,000 - \$39,999
  - \$40,000 - \$49,999
  - \$50,000 - \$59,999
  - \$60,000 - \$69,999
  - \$70,000 - \$79,999
  - \$80,000 - \$89,999
  - \$90,000 - \$99,999
  - \$100,000 - \$149,999
  - More than \$150,000
51. Please feel free to tell us any additional information or share any additional comments:

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## *Interview Guide*

1. How is your feeling today?
2. Could you please tell me a little bit about your story? how did you end up living in this town?
3. Could you explain how your daily activities are?
4. How often do you come to the groceries store? When? Where?
5. How often do you shop at Walmart?
6. How close is your house from the nearest Walmart? How about the other grocery stores?
7. What kind of food/products/services do you use from Walmart?
8. Can you describe what the Walmart's store in your city was like at that time? (Before closing)
9. How did you feel when you first heard that Walmart in your town would be closed? How did you and the people around you react?
10. Are there any other stories that you know and have heard associated with the closure of Walmart's store last year? Please tell me.
11. What happens then when Walmart closed and left the town? Does it affect you and your family?
12. Do you think Walmart is good or bad for your community? Why?
13. Is there any Food Bank or Pantries near your area? What do you think about it?
14. What is your opinion about the availability of food sources and access to food in this town?
15. What do you think about the SNAP program?
16. Please tell me, how do you describe the character of the people who live in this city?
17. How would you describe the poverty in this city?
18. What is the biggest problem that you or your community face while living in this city?
19. How do you imagine your future? and the future of this city as well for five or ten years from now? What makes you want to stay in this city/small town?

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## VITA

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