LITERATURE REVIEW

The retail landscape in United States has changed considerably during the past decade in terms of the increase in number and the kind of retail stores (Lee and Atkins et. al 2006). The changes have been influenced by shifting consumer shopping preferences, slowdown of consumer spending, and abundance of retail choices due to diversified retail formats (Lee and Atkins et. al 2006). The numbers and format of retailers from regional malls, supercenters, category killers, and to warehouse clubs has grown (Graff 2000). As the numbers of stores have grown the closer and more accessible they have become to communities (Heitmeyer and Kennita 2004). Even though some consumers do not like the idea of retail stores near their residential areas most governments are following the idea of new urbanism that allows residents to live, work, and shop in the same community (Heitmeyer and Kennita 2004).

One of the reasons the big-box retailers are sprawling over their rival, regional malls, is the fact that they carry a variety of items in the same store making it more convenient for shoppers while malls offer similar merchandise (Heitmeyer and Kennita 2004; Lee and Atkins et. al 2006). Also the stand alone locations of big-box retailer offer visibility and direct access to abundant parking areas, making them more attractive to today’s consumers with hurried lifestyles (Heitmeyer and Kennita 2004; Lee and Atkins et. al 2006). Warehouse clubs and supercenters exhibited the strongest growth of 277% from 1992-2002 (Lee and
Atkins et. al 2006). Given this competitive retail environment the coming decade will force large number of regional malls to close down or change their strategy to survive (Heitmeyer and Kennita 2004; Lee and Atkins et. al 2006).

The competitive environment has forced the retail industries to employ technology in order to improve ways of targeting consumers and retaining increasing market share (Pillar 2007; Graff 2000). Retailers are finding that GIS technology integrated with demographic information can have a profound positive effect on site selection for a new store, distribution center or service department, merchandising and promotions (Pillar 2007; Graff 2000). Typical retail success means the selection of the ideal place or placing a site in an area of high demand potential and high visual exposure. Elements like operations, site, and location contribute to the success of a site (ESRI 2007; Marros 2005). Customer surveys can be used with census data to visualize market penetration, market share and trade areas (Pillar 2007; ESRI 2007; Marros 2005). When markets change GIS is a good tool to help plan exit strategies and asset disposal (Pillar 2007; ESRI 2007; Marros 2005). In general, retailers can use segmentation analyses which is the process of identifying and grouping people based upon similar characteristics and/or behavior so that a retail strategy can be adapted to meet the customers’ needs and positioning analyses which is the technique used to classify the image of a store in target consumer’s mind by which retailer can
focus on store attributes consistent with their customers’ priorities and needs (Lee and Atkins et. al 2006).

A case study in Chicagoland illustrates how GIS was used to visualize the spatial distribution of Starbuck’s Coffee locations (Marros 2005). This helped determine areas that are underserved by Starbucks Coffee and areas that seem to have a predominant demographic (Marros 2005). GIS was also used in the analysis of postal retail outlet locations in the City of Belgrade by using MapInfo software package in Desktop mapping process together with demographic and business population’s information (Trumbint and Ostojic et. al 2006). Due to the long-term and high-risk nature of location decision-making, over half of the major retailers in Canada are using GIS technology for customer mapping, sales forecasting and other store portfolio management applications (Biasiotto and Hernandez 2001). Whenever customer data are not available to help in the location analysis, GIS can be used to analyze the demographic variables of the areas surrounding existing retail locations in order to create a demographic profile (Cannon 2007).

During the 1990’s the grocery industry of the United States including grocery retailers like Wal-mart, K-mart, Target, Sears, Kroger and Albertson’s has undergone a rapid consolidation (Graff 2000). In a single decade Wal-mart has utilized its supercenter format to become the largest grocery retailer in the nation (Graff 2000). Wal-mart plans to open 150 new stores annually surpassing
its rival retailer like K-mart which has half the number of stores as Wal-mart (Graff 2000). Wal-mart currently has 3593 stores, K-mart and Sears have 1498 and 866 stores respectively (Table 1). Sears doesn’t have as many stores as the rest because they are restricted to being inside malls (Graff 2000). The decline in market share of once the leading retailers in America, K-mart and Sears, has been blamed on outdated stores, inefficient operations and weak management by investors (Merrick and Berman 2004). In order for them to get back to the market K-mart and Sears chains merged in an 11.5 billion deal that would propel them back to the number three position in November, 2004 (Merrick and Berman 2004).

The merger of K-mart and Sears (Sears Holdings) did not work as anticipated (Morgenson and Barbaro et. al 2008). In mid-January 2008 it was reported that its holdings sank to $86.02 a share, the level it was just after the merger was announced in 2004 (Morgenson and Barbaro et. al 2008). This was far below the stock’s peak of $193 in April 2007 (Morgenson and Barbaro et. al 2008). In a course of nine months, $14 billion in market value had evaporated that would lead the company to come up with a better strategy or close some of the stores to cut cost (Morgenson and Barbaro et. al 2008).

Most of the literatures reviewed in here talk about the use of GIS for retail industries in general and some specifically talk about Starbuck’s Coffee (Marros 2005), postal retail outlet in City of Belgrade (Trumbint and Ostojic et. al 2006).
but none of them talk about the retail industries being considered in this study (Wal- mart, K- mart, Target and Sears) except the literature by Graff, 2000. Since this issue of K- mart and Sears closing is very recent there are no studies done or literature written about it.

This paper attempts to show what the American landscape would look like if Sears Holdings can not compete with its rivals anymore and closes its stores nationwide. The paper will also determine which one of the two big- box discount retailers, Wal- mart and Target, which currently have dominated the market, will benefit from this closing by mapping the stores and customer distributions using ArcMap.
OBJECTIVES

The objectives of this project are to identify the geospatial distributions of the four big-box discount retailers in U. S. namely Wal- mart, Target, K- mart, and Sears after which analysis will be made as to which market is being over or under-serviced based on the distribution of these retailers and customers, predict what the American landscape would look like if the impending closing of K-mart and Sears stores takes effect, and which of the remaining big box retailers benefits from the outcome. The term over- serviced in this study is used to refer to areas or markets where the ratio of that particular area’s people to a retail store is less than that of the national ratio. If a particular area’s ratio of people to a retail store, is higher than that of the national ratio, that area is said to be under-serviced. This will be explained in detail in the method section.

METHODS

To start the project the geospatial datasets that contain the latitude, longitudes and addresses of all Wal- mart, Target, K- mart and Sears stores in U.S. that were provided in CVS (text file) format were edited to include only those fields that are useful in this study. Fields containing telephone numbers and store hours were removed to save file space. These datasets were provided by Dr. Scott A. Drzyzga (Assistant Professor, Shippensburg University). The states, counties, and cities tabular datasets in CSV format were provided by U. S. Census Bureau. These tabular datasets have most recent population data (2000
census). In order to use these data in ArcGIS, ArcMap in particular together with the states, counties and cities polygon from ESRI they were edited to include only the necessary data for this study. The road data were provided by ESRI.

The U.S. states, counties, roads and cities shapefiles from ESRI were added to ArcMap document as a map layer by using the “add” button after which the map was projected into the desirable projection by using the “property” tools and selecting “coordinate system” tab. In this case the geographic coordinate system of North American Datum of 1983 (NAD83) and projected coordinate system USA_Contiguous_Equidistant_Conic that preserves distance, since this project is interested in the distance between these retail stores, was used. After the tabular datasets containing the 2000 population census were edited they were also added to ArcMap. These tables of data were joined to the attribute table of the states, counties and cities shapefiles from ESRI in order to use the latest population numbers of each state, county or city. To join the “states” map layers’ attribute table to that of the tabular “states” attribute table the “states FIBS” code (Federal Information Processing Standards) was used as a base of the joint. These “states FIBS” codes are numbers assigned to each state that is unique to each state. This joint will produce a shapefile that contains all the states with the most recent population census. The same process was used in joining attribute table of “counties” shapefile with “counties” tabular data and “cities” shapefile and “cities” tabular data. In the case of counties the “county
FIBS” code was used and “cities FIBS” code in case of cities. These tables can be joined by choosing the “join” function from “properties” option.

After the datasets containing the locations of each store were edited they were imported to ArcMap by adding them as x, y data points. This was done by using the “add x, y data” tool from “Tools” menu in ArcMap and redefining the coordinate systems to the same system described above. These were originally spatially referenced to NAD83.

According to the U. S. Census Bureau a city is found in an urban area and is a subdivision of a state that has its own local government. Cities are also characterized by high population numbers, over 10,000 people and a density of over 85.4 persons per square mile based on 2000 census (U. S. Census Bureau). Based on 2000 census areas with a total population over 2500 are considered urban areas and those less than that are considered to be rural (U. S. Census Bureau). Areas with a population of 50,000 and above are called urbanized areas (U. S. Census Bureau). The urban areas consist of outlaying territory if it has a similar population number and is connected to the core of the urban area and is within 5 miles of the core which is usually a city (U. S. Census Bureau). The average population density in U. S. is 85.4 persons per square mile according to the 2000 census from U. S. Census Bureau. Accordingly, a population density less than the average is said to be low population density and above the average is said to be high population density.
A 5 mile buffer was made around all 3149 cities in the U. S. which have already been added to the map as a point layer. A 5 mile buffer was used in order to include all the retail stores in the surrounding urban territories within 5 mile radius of the city as described in the above paragraph and to figure out how many of the big box retailers are found within a distance from these cities. This was done by using the “analysis tool” from ArcToolbox where the buffer function is found under “proximity” tool. After the buffers were made the SQL function was used to select all the Wal- mart, K- mart, Target, and Sears stores that are completely within those buffers. In this case “select by location” option was used. Also a 2 mile buffer was made around all the stores to figure out how far they are from highways. Since most people like to shop close to where they live more than 2 mile away from highway was thought to be far and a mile buffer lives out so many of the stores. That is why 2 mile buffer was used to show how many stores can be reached or accessed within a short distance from highways. After the buffers were made again by selecting “select by location” option all the 2 mile store buffers that intersect the roads layer were queried and called “2 mile highway buffers”. After doing that all the stores that are completely within the “2 mile highway buffers” were selected. The 2 mile buffer around the K- mart and Sears stores were also used to determine how many Wal- mart and Target stores are within close proximity (2 mile radius) of K- mart or Sears stores. In other words this will show how many Wal- mart or Target stores are found within a 2 mile radius of a K- mart or a Sears store.
Population density to help us understand more about the population distribution in relation to the locations of the retailers was performed at a county level. The counties layer contained in it the total population of each county in U.S. (2000 census from U. S. Census Bureau). This layer was symbolized under the symbology tab by drawing quantities using color to show values. This shows where the customers are concentrated or where there are high demand potentials (ESRI 2007; Marros 2005). The areas that have high population density, a density above 85.4 persons per square mile as described earlier, and where most cities are located presumably will have more stores and those areas with low population density (less than 85.4) will have fewer stores. The density map was classified into 6 classes to show clearly how the population is distributed and to reduce generalization of the distribution. Three classes each were assigned for population density less than the average (85.4) and above the average.

The other method used to understand the distribution of the stores in relation to high demand potential or to determine which areas are adequately, under or over- serviced by all four big box retail stores the total population (2000 census) was divided by the total number of the retail stores in U.S. to get the national average. The total number of retail stores as can be seen from Table 1 is 7444 and U. S. population according to U. S. Census Bureau estimate as of July 2007 is 301,621,157. The ratio of persons to a retail store is 40,519. In other words 1 retail store is expected to service 40,519 people. This average is used as a guide
to identify areas that are adequately, over or under serviced. In this study an area where the ratio of persons to a retail stores is $40,519 \pm 500$ (40,019-41,019) is said to be adequately serviced. A 500 margin is used to account for any error that might exist in the population estimate or the number of stores in each county. An area that has a ratio above 41,019 is said to be under-serviced and one that has a ratio of less than 40,019 is said to be over-serviced. This same process is used to figure out which market or areas are going to be adequately, over or under-serviced by Wal-mart and Target stores if all K-mart and Sears stores have to close. The total number of Wal-mart and Target stores is 5080 (Table 1). The ratio of the total U. S population to K-mart and Sears stores is 59,374. This is also given a margin of ± 500. So if an area’s ratio of persons to a the total of Wal-mart and Sears stores is between 58,874 and 59,874 then that area is said to be adequately serviced by these two stores. If the ratio is less than 58,874 then that area is said to be over-serviced and if the ratio is above 58,874 then that area is said to be under-serviced.

To do the above processes U. S. counties were divided into 3 parts. The first category is counties with the highest population numbers (customers) which are called urbanized areas as mentioned previously with population above 50,000. Those counties are also where the largest demand is. The second category is those counties that are called urban areas and has a population of over 2,500 and below 50,000. The third category is the rural counties which have a
population less than 2500. All counties in these categories were selected by using the SQL technique. Using “Select by attribute” option all counties that have the above specified population (2000 census) number were selected. Using “select by location” option all the retail stores that are “contained by” these counties were also identified. The number of stores in each category (retail stores in urbanized, urban and rural area) is summarized in Table 2. By using the national average (the ratio of total U. S. population to total number of retail stores) it was possible to determine which areas are over or under-serviced.

The above method is also used to identify the areas that are over or under-serviced by Wal-mart and Target if the closing of K-mart and Sears take effect. In this case the total population was divided by the total number of Wal-mart and Target stores to know the national average (ratio of persons to these two stores). The counties were classified the same way that was done for all the retail stores. The total number of people in each category was then divided by the total number of Wal-mart and Target stores found in those categories.

All the maps were displayed using the layout view of ArcMap. An inset was used to display the state of Alaska. This was done by adding a new data frame from the “Insert” menu to the map. By using the “select by attribute” option the State of Alaska was identified and saved as a different layer. This layer was used to clip the rest of the layer such as roads, counties, and the stores from that state using the “clip” function in “extract” tool found inside
ArcToolbox. Circle symbols were used in all of the maps to represent the retail stores with different colors assigned to each retailer and the sizes of the circles are adjusted when there is an overlap in an attempt to show all the points.

RESULTS

The American landscape as we can see it in Figure 1 is flooded with this big box discount retailers. As mentioned in the article by Heitmeyer and Kennita 2004, it looks as if they are in every community especially in some parts of the Country.

Figure 1: Figure 2: All the big box retailers. Different symbol sizes are used to show overlapping symbols.
As can be seen from the map the number of Wal- mart stores we have in U. S. in general are much more than the other three retailers. As mentioned by Graff, 2000 Wal- mart planned on opening 150 stores a year which means in the near future Wal- mart will dominate the market even more. Table 1 shows that as of now Wal- mart has a total of 3593 stores nation wide in U. S. followed by K- mart with 1498 stores which is very close in number with that of Target that has 1487 stores. Sears has the fewest stores (866) as mentioned by Graff due to the fact that they are restricted to being inside malls and because of that Sears has 94% of its stores located in 5 miles of a cities and 2 miles from highways (Table 1). Target also has 91% of there stores in both categories followed by K- mart and Wal- mart. This shows that these stores are more accessible to the customers.

Table 1: Summary of the total number of stores of each retailer around the cities and close to highways.

<table>
<thead>
<tr>
<th>Retailer</th>
<th>No. of stores in U. S.</th>
<th>No. of stores within 2mile of Hwy</th>
<th>No. of stores within 5mile of a city</th>
<th>No of stores within 2mile of hwy and 5mile of a city</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wal- mart</td>
<td>3593</td>
<td>1238 (35%)</td>
<td>2245 (63%)</td>
<td>2597(72%)</td>
</tr>
<tr>
<td>K- mart</td>
<td>1498</td>
<td>560 (37%)</td>
<td>1168 (78%)</td>
<td>1262(84%)</td>
</tr>
<tr>
<td>Target</td>
<td>1487</td>
<td>657 (44%)</td>
<td>1271 (85%)</td>
<td>1357(91%)</td>
</tr>
<tr>
<td>Sears</td>
<td>866</td>
<td>399 (46%)</td>
<td>771 (89%)</td>
<td>811(94%)</td>
</tr>
</tbody>
</table>
Looking at the distribution pattern of stores from Figure 1 most of the retail stores are concentrated in Eastern and Midwest part of the Country. The next highest concentration of the stores is found in the western part of the country especially in California, Oregon, and Washington and also in New Mexico and Colorado. The distribution of the stores follows the population density patterns as can be seen from Figure 2.

Figure 2: The distribution of all retail stores and the population density of U. S.

Taking the population density or the demographics of the country into consideration as mentioned by Marros, 2005 it will help show more clearly the areas where the customers are found. Figure 2 shows that the majority of the stores are located in areas with high population density which are categorized as
urban and urbanized areas (page 9 of this paper) since the majority of the customer are located in these two areas.

Figure 2 also shows that two of the retailers especially Wal- mart stores are also located in areas where the population density is low (lower than 85.4 persons per sq. mile) but not as low as rural areas which can be under 10 persons per square mile. We also find K- mart stores but not as much as Wal- marts. For instance the Northern part of the state of Nevada where there is a population density between 10- 40 people per square mile, the western part of Wyoming, eastern Montana, and northern Maine to mention a few. But even in these areas the numbers of Wal mart stores are greater than the number of K- mart stores. These areas are not serviced by the other two retailers. Sears and Target are found mainly in areas with high population density, mainly in urbanized areas where population is over 50,000.

It is evident as mentioned above and by looking at Figure 3 that all the retail stores are located in urban and urbanized counties due high demand potential (ESRI 2007; Marros 2005). Wal- mart with 984 stores has the highest number of stores in urban areas followed by K- mart with 201 stores, Target 43 and Sears 28 stores. Figure 3 also shows that areas classified as urbanized (50,000 people or more) have even more retail stores than urban areas (Table 2). As we can see from Figure 3 none of the retail giants locate their stores in the rural
areas. As mentioned by Pillar, 2007; ESRI 2007; and Marros, 2005 understanding the demographic, site and location contribute to the success of a retail industry.

Figure 3: Classification of Urbanized, Urban and Rural region with retail stores.

In order to understand more about which market is currently being sufficiently, over or under serviced by these retail giants it is important to understand where the demand is. In other words it is important to study the population patter or customer distribution and knowing also the distribution and quantity of the retail stores in an area. As described in the method section knowing the number of stores in an area and how many customers are found in that area will help estimate if the area is being sufficiently, over or under serviced. From Table 2 it can be see that most of the retail stores are found in the
urbanized regions (Figure 3), especially Target and Sears that have 97% and 95% respectively of their stores located in urbanized area. The total population in the urbanized counties (913 counties out of 3140 counties) was determined by using the “statistics” tool to be 239,320,548 people. The total number of retail stores in this region is 6095 (Table 2). The ratio of persons to a retail store in the urbanized region is 39,265. As mentioned earlier (pages 11 and 12) the national average of persons per a retail store is 40,519 therefore, according to the definition of over – serviced (below 40,019) being used in this study the urbanized areas are said to be over- serviced these retail giants.

Looking at the urban areas there are more counties (2114 counties) falling in to this category but number of people living in those counties is less than that of urbanized areas. The total number of stores located in these counties is also more (see Table 2). The total number of people in this region is 41,692,180. And total number of retail stores in this region is 1256. The ratio of persons to a retail store in urban areas of the country is 33,194 which is less than the national average. The urban areas of U. S. are also over- serviced by all four retail stores according to the definition used in this study.

The rural areas (113 counties) as can be see from Table 2 do not have any of the retail stores within any of them. Even though the number of people that live in those areas is not insignificant (177,368) it is not possible to put these regions in any of the three categories since there is no retail store located in it.
Table 2: The number of each retail stores that are found in urbanized, urban and rural counties with the total number of inhabitants and number of counties.

<table>
<thead>
<tr>
<th>Retail Store</th>
<th>Urbanized</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wal-mart</td>
<td>2574 (72%)</td>
<td>984 (27%)</td>
<td>0</td>
</tr>
<tr>
<td>K-mart</td>
<td>1256 (84%)</td>
<td>201 (13%)</td>
<td>0</td>
</tr>
<tr>
<td>Target</td>
<td>1441 (97%)</td>
<td>43 (7%)</td>
<td>0</td>
</tr>
<tr>
<td>Sears</td>
<td>824 (95%)</td>
<td>28 (3%)</td>
<td>0</td>
</tr>
<tr>
<td>Total # of stores</td>
<td>6095</td>
<td>1256</td>
<td>0</td>
</tr>
<tr>
<td>Total Population</td>
<td>239,320,548</td>
<td>41,692,180</td>
<td>177,368</td>
</tr>
<tr>
<td>Number of Counties</td>
<td>913 (29%)</td>
<td>2114 (67%)</td>
<td>113 (4%)</td>
</tr>
</tbody>
</table>

If the closing of K-mart and Sears take effect the retail market would be different from what it is now because the number of store would decrease but the demand will keep growing probably faster then the growth of retail stores. From Table 1, the total number of Target and Wal-mart store nationally is 5080. Therefore, the ratio of the total U. S. population which is 301,621,157 (2000 Census) to the total number of Wal-mart and Target (5080) is 59,374. As stated in the method section this also has a margin of ± 500 to determine if the area is over serviced, under-serviced or adequately serviced. The number of Wal-mart and K-mart in urbanized areas is 4015 and the total population of this region is 239,320,548. The ratio of persons to retail stores in this region with the absence of K-mart and Sears will be 59,606. Therefore, the urbanized regions will be adequately serviced even if both K-mart and Sears are to close. If we have to
compare these to the national average involving all four retailers the urbanized region would be under-serviced.

In the urban areas the total number of Wal-mart and Target is 1027 (Table2). The total number of people in the urban areas is 41,692,180. The ratio of person to retail stores in this region will be 40,596. Again the urban area would be over-serviced because it is lower than the national average (59,374). If we compare this ratio (40,596) to the national average involving all four retailers this area without K-mart and Sears would be adequately serviced. The rural areas do not have any of the retail stores.

It is evident that large number stores are located close to the highways (Figure 4) and this can be seen clearly on the western part of the country making them more accessible to the customers. This was performed by making 2 miles buffer zones around each store to help us determine which once are within 2 miles from highways. This has been summarized in table 1. Wal-mart with 1238 stores near the highways it makes it easier for customers to get to the stores followed by Target with 657 stores mostly in the eastern part and along the west coast of the country and K-mart with 560 and Sears with 399 stores. By looking at the numbers of stores each retailer has it is possible that Wal-mart will benefit more than Target from the closing of Sears or K-mart especially the western part of the country or in the urban areas in general where Wal-mart has more stores than Target (see Table 2).
In order to see which retail stores located in area where customer are mostly located a 5 miles buffer was made around the cities and the stores found in those zones were selected (Marros, 2005; Trumbint and Ostojic et. al, 2006). The cities are where customers are concentrated and these cities are found in urban and urbanized counties as Figure 5 shows. As mentioned above the urban and urbanized areas are over-serviced by all four retails. As motioned by Biasiotto and Hernandez, 2001 that is where the majority of the customers are. Wal- mart again with 2245 stores has the highest number of stores within 5 miles radius of the cities followed by K- mart with 1168, Target with 1271 and Sears with 771. These numbers can clearly tell us that the city market is flooded with these retailers. Even though K- mart has a little more stores than Target in total.
number, Target has more stores within 5 miles radius of cities and within 2 miles radius of highways. Due to the number of stores Wal- mart has around cities it is reasonable to suggest that the closing of K- mart or Sears will benefit Wal- mart but depending on the locations and shoppers interest Target might benefit from this as well. But when we look at Alaska where there are only 3 Sears and 5 Wal- mart stores in the entire state it is clear that Wal- mart will benefit from the closing of Sears in that state.

Figure 5: All the retail stores within 5 mile radius of cities.

To determine which retailer from Wal- mart and Target benefits from the closing of K- mart and Sears the 2 miles buffer made earlier was used. Only this time all the Wal- mart and Target stores that are found within the 2 miles radius
of each K- mart stores (Figure 6) and Sears stores (Figure 7) are selected. This is summarized in Table 3.

![Figure 6: Wal- mart and Target stores located within 2 miles from K- mart stores.](image)

As we can see from Figure 6 and Table 3 the number of Wal- mart stores that are found in 2 miles radius of K- mart stores is more than that of Target. Wal- mart has 706 and Target has 407 stores that are within 2 mile radius of K- mart stores. As it was discussed above and shown in Figure 3 K- mart and Wal- mart seem to have a similar pattern of distribution. They are both distributed in large numbers around cities, areas of high population (urbanized) and urban areas and few stores in less populated urban areas except Wal- mart has more stores in all these areas. This is reflected in Figure 7 that shows more Wal- mart
near K-mart stores. The Target stores are mostly located in the urbanized regions and close to the highways. We don’t see much of Target stores in the urban areas. From the closing of K-mart we can see Wal-mart will benefit from it especially in the urban areas Target stores are very few. There might be more than one Wal-mart or Target stores in each K-mart buffers but due to the large number of stores Wal-mart has in general within these buffers Wal-mart would probably benefit more than Target.

Figure 7: Wal-mart and Target stores within 2 miles from Sears stores.

As Figure 7 shows the number of Wal-mart and Target stores within 2 miles radius of Sears are 545 and 503 respectively. See Table 3. This again reflects the fact that Sears and Target have a similar distribution patterns. They are both
located in areas with high population density and close to the cities (urban area) in large numbers. That is why we have more Targets stores near Sears than K-mart. So from the closing of Sears it is possible both Wal-mart and Target could benefit from it but since Wal-mart still has a little more (42 more) stores than Target it might benefit more. But in Alaska since there is no Target store the closing of Sears would mean a great gain for Wal-mart. Looking at table 4 there are 501 Sears and 672 K-mart stores located within 2 miles from Wal-mart stores and there are 495 Sears and 407 K-mart stores located within 2 miles from Target stores. Looking at the number of Sears stores close to either Wal-mart (58%) or Target (57%) there is a difference of only 6 stores. So in this reasonable to say both Wal-mart and K-mart will benefit almost equally from the closing of Sears stores. But the number of K-mart stores within 2 mile radius of Wal-mart stores (45%) is much more than 27% of K-mart stores within 2 mile radius of Target stores (a difference of 265 stores). In this case it is reasonable to say Wal-mart benefits more than Target if all K-art stores close.

Table 3: Wal-mart and Target stores within 2 miles radius of K-mart and Sears.

<table>
<thead>
<tr>
<th>Retailer Name</th>
<th>Within 2 miles of K-mart</th>
<th>Within 2 miles of Sears</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wal-mart</td>
<td>706 (20%)</td>
<td>545 (15%)</td>
</tr>
<tr>
<td>Target</td>
<td>407 (27%)</td>
<td>503 (34%)</td>
</tr>
</tbody>
</table>
Table 4: Sears and K- mart stores within 2 miles radius of Wal- mart and Target.

<table>
<thead>
<tr>
<th>Retailer Name</th>
<th>Within 2 miles of Wal-mart</th>
<th>Within 2 miles of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sears</td>
<td>501 (58%)</td>
<td>495 (57%)</td>
</tr>
<tr>
<td>K- mart</td>
<td>672 (45%)</td>
<td>407 (27%)</td>
</tr>
</tbody>
</table>

To visualize what the landscape of America would look like in the absence of K- mart and Sears stores it is displayed in Figure 8. The eastern part of the county does not show a big change but western part of the county shows reduced amount of stores.

Figure 8: The American landscape with only Wal- mart and Target retail stores.
SUMMARY

The American landscape as shown by this study is over-serviced by all four retail giants in both urban and urbanized regions of the Country. The rural areas even though it is not proper to say they are not serviced or they are under-serviced none of the retail stores are located in those regions due to the fact that the demand is not as high as the other two region (urban and urbanized). The closing of the two old time big box discount retailers K-mart and Sears will change those areas that are currently being over-serviced by all four retailers like the urbanized areas to being adequately serviced and the urban areas will continue to be over-serviced by Target and Wal-mart.

The accessibility of the stores to the people (customers) is also going to change especially in less populated areas where more K-marts are located than Sears and this will also affect the people that use the highways to get to the stores in both the urban and urbanized areas. The closing of K-mart again in the less populated areas or areas farther away from cities would mean the customers’ access to a retail store via highways would be reduced. In other words the number of stores accessible or available to customers would be limited. But over all the urban areas that are now being over-serviced would continue to be over-serviced because of a great number of Wal-mart and Target stores in those areas and the urbanized areas that are now being over-serviced would be adequately serviced.
The major beneficiary from the closings will be Wal-mart due to the fact that they are located everywhere K-mart and Sears are located and also in greater numbers. And with Wal-mart opening 150 stores a year according to Graff, 2000 it might take over the market of big box retailing soon.

With more time and resource one can research more on who would benefit from these closings especially in areas where the number of Wal-mart stores are close to that of Target by looking at the customer’s shopping habits and the items sold by the two retailers. One can also research if Wal-marts and Targets are better located than K-mart and Sears by looking at factors other than proximity to highways or cities. Because according to ESRI, 2007 and Marros, 2005, the success of a retail industry depends on finding the right location.
REFERENCE


http://online.wsj.com/article/SB110068961640976558.html

