

Feasibility Analysis IV: Preparing the Marketing Package

Objective: The goal of this assignment is to reevaluate the marketing strategy for the Mekong Plaza. In case 2, we already looked at the site’s DNA - demographic neighborhood analysis.

Assignment: This is an individual project. Please note that this analysis should not necessarily be limited to an “Asian” theme since we are trying to find other opportunities to exploit as well in terms of other ethnic groups.

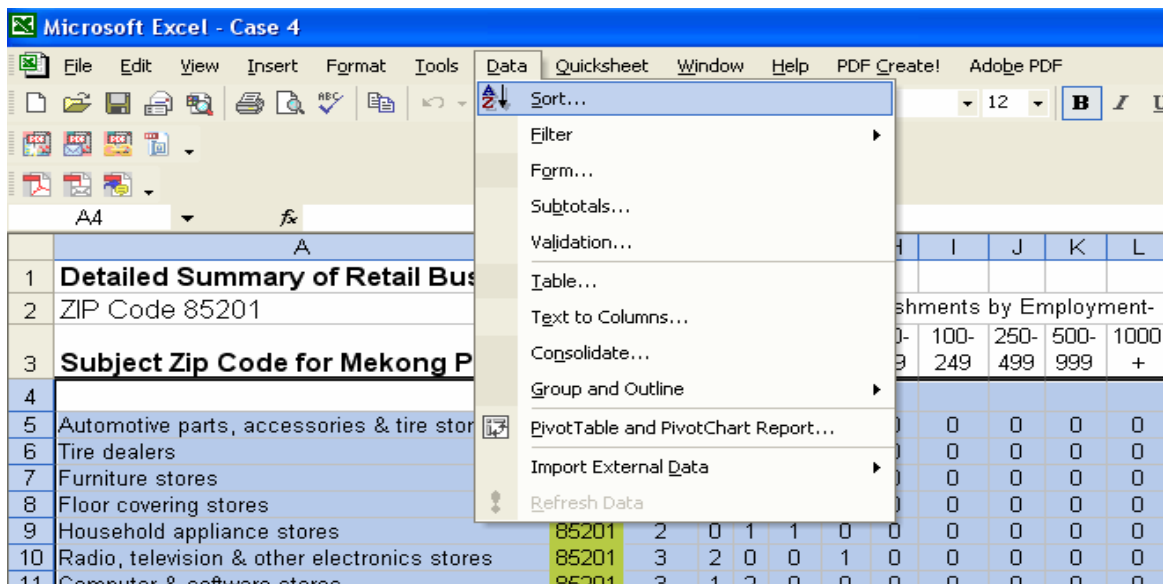
1. Prepare a “**void analysis**” to determine what categories are missing (if any) for the zip code 85201 that Mekong Plaza is located in based on looking at the Detailed Summary of Retail Businesses (Activity for 2001) for all zip codes in the Mesa and Chandler area from the U.S. Census Bureau ZIP Code Business Patterns. To make your job easier, I have already downloaded this data from the website <http://www3.uwm.edu/Dept/ETI/Etizip.cfm>. There is one worksheet per zip code e.g. “Num Establishments (XXXXX)”. As a starting point, first add a column to each Num Establishments worksheet that contains the zip code as shown in the yellow highlighted area below:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Detailed Summary of Retail Businesses (Activity for 2001)											
2	ZIP Code 85202			Number of Establishments by Employment-								
3				1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+
4	Automotive parts, accessories & tire stores	85202	10	0	5	2	3	0	0	0	0	0
5	Tire dealers	85202	2	0	0	2	0	0	0	0	0	0
6	Furniture stores	85202	15	5	5	1	3	0	1	0	0	0
7	Floor covering stores	85202	4	1	3	0	0	0	0	0	0	0
8	All other home furnishings stores	85202	8	3	3	1	1	0	0	0	0	0
9	Household appliance stores	85202	1	0	0	1	0	0	0	0	0	0
10	Radio, television & other electronics stores	85202	9	6	1	0	1	1	0	0	0	0
11	Computer & software stores	85202	5	4	1	0	0	0	0	0	0	0

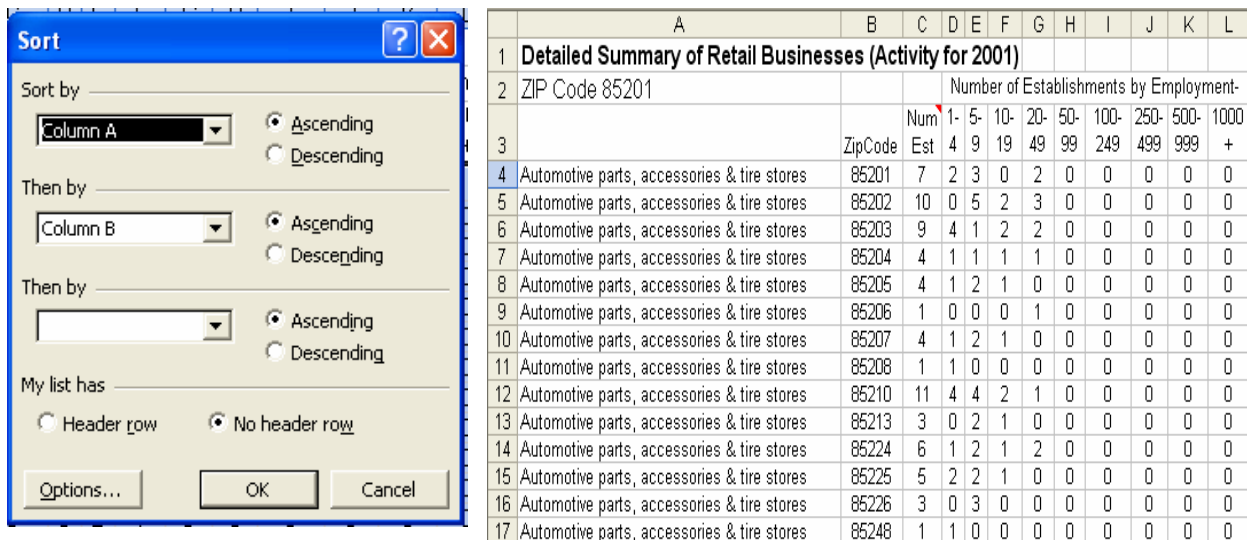
Next, combine the worksheets into a giant spreadsheet with the various spreadsheets “stacked” one on top of the other with the copy and paste command and then using your cursor, highlight the area from cell A5 through cell L5 downwards.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Detailed Summary of Retail Businesses (Activity for 2001)											
2	ZIP Code 85201			Number of Establishments by Employment-								
3	Subject Zip Code for Mekong Plaza			1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+
4												
5	Automotive parts, accessories & tire stores	85201	7	2	3	0	2	0	0	0	0	0
6	Tire dealers	85201	6	1	4	1	0	0	0	0	0	0
7	Furniture stores	85201	4	2	1	1	0	0	0	0	0	0
8	Floor covering stores	85201	2	2	0	0	0	0	0	0	0	0
9	Household appliance stores	85201	2	0	1	1	0	0	0	0	0	0
10	Radio, television & other electronics stores	85201	3	2	0	0	1	0	0	0	0	0
11	Computer & software stores	85201	3	1	2	0	0	0	0	0	0	0

Finally, use the Sort command in Excel to sort the cells



You will need to sort using Column A and then column B so that the finish product is each business type by zip code for easier comparison of what's missing.



Observe that Automotive parts, accessories & tire stores are well represented in our subject zip code in terms of the number of stores. In contrast, there is limited representation e.g., a strong opportunity exists for this type of store in zip codes 85206, 85208, 85248, and 85249. However, this still doesn't suffice since we haven't used the information provided on the total number of employees per establishment. For example, are two stores consisting of 1-4 employees "better" than one store which has 20-49 employees? Consequently, you will need to modify the giant merged spreadsheet that you just created. First, insert a row by highlighting row 3 (right click on the third row → select Insert) as shown below:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Detailed Summary of Retail Businesses (Activity for 2001)											
2	ZIP Code 85201		Number of Establishments by Employment-									
		ZipCode	Num Est	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+
3												
4	Accessories & tire stores	85201	7	2	3	0	2	0	0	0	0	0
5	Accessories & tire stores	85202	10	0	5	2	3	0	0	0	0	0
6	Accessories & tire stores	85203	9	4	1	2	2	0	0	0	0	0
7	Accessories & tire stores	85204	4	1	1	1	1	0	0	0	0	0
8	Accessories & tire stores	85205	4	1	2	1	0	0	0	0	0	0
9	Accessories & tire stores	85206	1	0	0	0	1	0	0	0	0	0
10	Accessories & tire stores	85207	4	1	2	1	0	0	0	0	0	0
11	Accessories & tire stores	85208	1	1	0	0	0	0	0	0	0	0
12	Accessories & tire stores	85210	11	4	4	2	1	0	0	0	0	0
13	Accessories & tire stores	85213	3	0	2	1	0	0	0	0	0	0
14	Accessories & tire stores	85224	6	1	2	1	2	0	0	0	0	0
15	Accessories & tire stores	85225	5	2	2	1	0	0	0	0	0	0
16	Accessories & tire stores	85226	3	0	3	0	0	0	0	0	0	0
17	Automotive parts, accessories & tire stores	85248	1	1	0	0	0	0	0	0	0	0
18	Automotive parts, accessories & tire stores	85249	1	1	0	0	0	0	0	0	0	0

After you have insert a new row, highlight column D and insert a new column by using the same logic process.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Detailed Summary of Retail Businesses (Activity for 2001)											
2	ZIP Code 85201		Number of Establishments by Employment-									
3												
4		ZipCode	Num Est	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+
5	Automotive parts, accessories & tire stores	85201	7	2	3	0	2	0	0	0	0	0
6	Automotive parts, accessories & tire stores	85202	10	0	5	2	3	0	0	0	0	0
7	Automotive parts, accessories & tire stores	85203	9	4	1	2	2	0	0	0	0	0
8	Automotive parts, accessories & tire stores	85204	4	1	1	1	1	0	0	0	0	0
9	Automotive parts, accessories & tire stores	85205	4	1	2	1	0	0	0	0	0	0
10	Automotive parts, accessories & tire stores	85206	1	0	0	0	1	0	0	0	0	0
11	Automotive parts, accessories & tire stores	85207	4	1	2	1	0	0	0	0	0	0
12	Automotive parts, accessories & tire stores	85208	1	1	0	0	0	0	0	0	0	0
13	Automotive parts, accessories & tire stores	85210	11	4	4	2	1	0	0	0	0	0
14	Automotive parts, accessories & tire stores	85213	3	0	2	1	0	0	0	0	0	0

In the third row, starting in cell E3 (column E, row 3) and continuing through cell M3 enter the average number of employees for a particular size firm. For example, for a firm that has between 1-4 employees, we will assume that the firm has an average of 2.5 employees $((1+4)/2)$, for a firm with 5-9 workers, it has an average of 7.0 employees $(5+9)/2$, and so on. For firms with more than 1000+ employees simply assume that the average number of employees is 1000. Next, in cell D4 input **Num Emp** which is an abbreviation for the Number of Employees. You might have to format cell D4 in case the text doesn't "wrap around". To do this, simply right click on cell D4 → select **Format Cells...** → click on the tab labeled **Alignment** → select **Wrap text** → click the **OK** button. In cell D5, you will calculate the total number of employees for all stores of a given type in a particular zip code by multiplying the average number of employees by the number of stores of a given employee size. This operation is most

easily performed using the sumproduct command in Excel. The Excel help menu provides the following information about this command:

SUMPRODUCT

Multiplies corresponding components in the given arrays, and returns the sum of those products.

Syntax

SUMPRODUCT(array1,array2,array3, ...)

Array1, array2, array3, ... are 2 to 30 arrays whose components you want to multiply and then add.

Thus, in cell D5 you will enter =SUMPRODUCT(\$E\$3:\$M\$3,E5:M5) where you are using absolute cell reference (\$ sign) for cells E3 through M3.

Using Absolute Cell References¹

When you copy formulas from one cell to another, Excel also copies any cell references in those formulas. But Excel adjusts the cell references in the copy of the formula so that the reference has the same relative relationship to the new formula. See the example shown here.

Usually these relative references are exactly what you want. But suppose you want to copy a formula but maintain the reference to the exact same cells it originally referred to? You can do this using absolute cell references. To create an absolute cell reference, simply place a dollar sign before the row and/or the column. For example, an absolute cell reference to B3 is \$B\$3. (You can create partially absolute references by placing a dollar sign before only the row or only the column. Then, when you copy the formula, the part with the dollar sign stays constant, but the part without the dollar sign is adjusted like a relative reference.)

Tip: To create an absolute reference, first create the relative reference by pointing to the cell. Then select the relative reference in the formula bar and press F4. Excel adds the dollar signs for you.

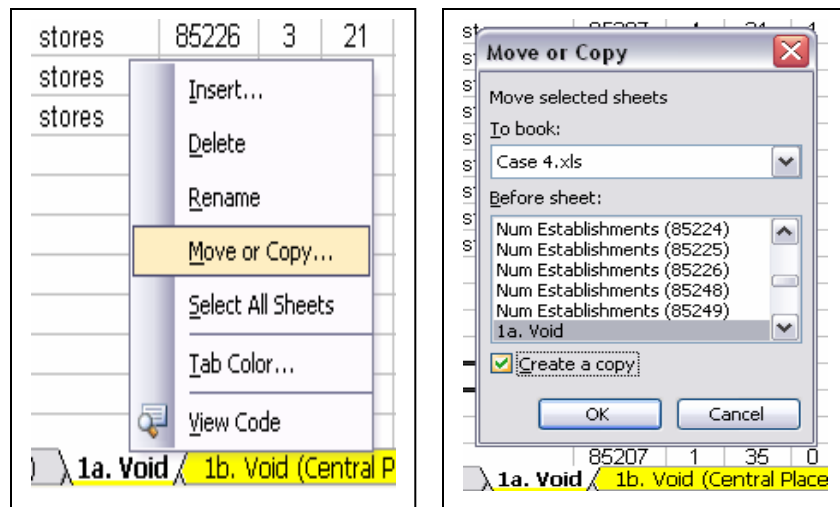
Once you have inputted the formula in cell D5, copy and paste this formula in the column D from cell D6 onwards. To use the copy function in Excel, click on cell D5 then use either CNTRL C (hold down the CNTRL button and type C which is known as CNTRL+C) or go to the **E**dit menu and select **C**opy. Notice that next to the **C**opy option is Ctrl+C. Next, go to the cell that you want to paste the formula in e.g., cell D6 and paste the formula using either CNTRL V (hold down the CNTRL button and type V which is known as CNTRL+V) or go to the **E**dit menu and select **P**aste. Your spreadsheet should resemble the illustration on the next page.

¹Taken verbatim from <http://www.mum.edu/helpdesk/tutorials/formulas.html>

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Detailed Summary of Retail Businesses (Activity for 2001)												
2	ZIP Code 85201			Number of Establishments by Employment-Size									
3				2.5	7.0	14.5	34.5	74.5	174.5	374.5	749.5	1000	
4		ZipCode	Num Est	Total Emp	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1000+
5	Automotive parts, accessories & tire stores	85201	7	95	2	3	0	2	0	0	0	0	0
6	Automotive parts, accessories & tire stores	85202	10	168	0	5	2	3	0	0	0	0	0
7	Automotive parts, accessories & tire stores	85203	9	115	4	1	2	2	0	0	0	0	0
8	Automotive parts, accessories & tire stores	85204	4	59	1	1	1	1	0	0	0	0	0
9	Automotive parts, accessories & tire stores	85205	4	31	1	2	1	0	0	0	0	0	0
10	Automotive parts, accessories & tire stores	85206	1	35	0	0	0	1	0	0	0	0	0
11	Automotive parts, accessories & tire stores	85207	4	31	1	2	1	0	0	0	0	0	0
12	Automotive parts, accessories & tire stores	85208	1	3	1	0	0	0	0	0	0	0	0
13	Automotive parts, accessories & tire stores	85210	11	102	4	4	2	1	0	0	0	0	0
14	Automotive parts, accessories & tire stores	85213	3	29	0	2	1	0	0	0	0	0	0
15	Automotive parts, accessories & tire stores	85224	6	100	1	2	1	2	0	0	0	0	0
16	Automotive parts, accessories & tire stores	85225	5	34	2	2	1	0	0	0	0	0	0
17	Automotive parts, accessories & tire stores	85226	3	21	0	3	0	0	0	0	0	0	0
18	Automotive parts, accessories & tire stores	85248	1	3	1	0	0	0	0	0	0	0	0
19	Automotive parts, accessories & tire stores	85249	1	3	1	0	0	0	0	0	0	0	0

From the preceding output, we can now observe that even though there is one less Automotive parts, accessories & tire store in zipcode 85224 compared to our subject zip code 85201, there are more employees which means that at least one or possibly more of the stores located in 85224 are larger. We use the number of employees as a proxy for store size (square feet)².

Make a copy of your output by right-clicking on the tab and selecting the **Move or Copy ...** option. I have labeled my output worksheet "1a. Void" in this example. Next, scroll down until you find your output worksheet and make sure that it is highlight then click on the box below labeled **Create a copy** then click on the OK button. Notice that a copy has now been created.



² There is a problem however with using number of employees especially for those store types that hire a lot of part-time employees to save on pension and health benefits. As such, using this measure in lieu of square feet is inexact at best. Also, we are using 2001 data. The most complete data for more than the 16 categories can be found at <http://censtats.census.gov/cgi-bin/zbpnaic/zbpdetl.pl>

Label this new output worksheet, "1b. Void (Central Place)". We will use Central Place Theory as the basis in predicting the number of stores (employees) of a given type that a zip code neighborhood should have.

What is Central Place Theory?

Central Place Theory: Walter Christaller developed the Central Place theory to explain the size and spacing of neighborhoods (cities) that specialize in selling goods and services. The theory consists of two basic concepts:

- **Threshold:** is the minimum market (population or income) needed to bring about the selling of a particular good or service. For example, a neighborhood must reach a certain population or income before a given type of store will move into a neighborhood.
- **Range:** the average maximum distance people will travel to purchase goods and services

The result of these consumer preferences is that a system of retail shopping centers of various sizes will emerge. Each retail center will supply particular types of goods forming levels of hierarchy with the following generalizations:

1. The larger the neighborhoods are in size, the fewer in number they will be, i.e. there are many small neighborhoods (villages), but relatively few large neighborhoods (cities).
2. The larger the neighborhoods (settlements) grow in size e.g. population, the greater the distance between them, i.e. villages are usually found close together, while cities are spaced much further apart.
3. As a neighborhood (settlement) increases in size, the range and number of its functions will increase.
4. As a neighborhood (settlement) increases in size, the number of higher-order services will also increase, i.e. a greater degree of specialization occurs in the services.

The higher the pecking order of the goods and services (more durable, valuable and variable), the larger the range of the goods and services, the longer the distance people are willing to travel to acquire them.

Examples for low order goods and services are: newspaper stalls, groceries, bakeries and post offices. They are supported by a relatively smaller threshold population and demand. Examples for high order goods and services are: jewellery, large shopping arcades and malls. They are supported by a much larger threshold population and demand.

The application of central place theory must be tempered by the economic status of consumers in a neighborhood since consumers with higher purchasing power (economic status) are more mobile and bypass retail centers providing only lower order goods. Other factors that can influence the retail trade area include 1) Land use: industrial areas can provide little in the way of a consuming population, 2) Poor transportation accessibility: this can limit the extent of a center's market area, 3) Competition: this limits the extent of market areas in all directions. Hence zoning is important in either increasing or limiting competition; and 4) Technology: high mobility afforded by the automobile allows overlapping of market areas

Point: Purchasing power *and* population density affect the distance between retail centers and hierarchical arrangements.

To implement the Central Place Theory concept, we will use simple ratios rather than a linear regression approach. Using the resulting worksheet that you copied, first make the Total Employees column Values by first copying and then using the Paste Special command (select Value option) since these were originally formulas in the column. Next modify the columns as follows:

	A	B	C	D	E	F	G	H	
1	Detailed Summary of Retail Businesses (Activity for 2001)								
2									
3			<- Average #Employees per Store Size						
4		ZipCode	Pop2000 Census	Num Est	Total Emp	Expected Est	Expected Emp		
5	Automotive parts, accessories & tire stores	85201	49,917	7	95	6	66	Strong representation	
6	Automotive parts, accessories & tire stores	85202	41,290	10	168	5	55		
7	Automotive parts, accessories & tire stores	85203	36,840	9	115	4	49		
8	Automotive parts, accessories & tire stores	85204	63,873	4	59	7	85		
9	Automotive parts, accessories & tire stores	85205	40,980	4	31	5	54		
10	Automotive parts, accessories & tire stores	85206	30,413	1	35	3	40		
11	Automotive parts, accessories & tire stores	85207	26,075	4	31	3	35		
12	Automotive parts, accessories & tire stores	85208	42,476	1	3	5	56		
13	Automotive parts, accessories & tire stores	85210	38,242	11	102	4	51		
14	Automotive parts, accessories & tire stores	85212	10,330	0	0	1	14		
15	Automotive parts, accessories & tire stores	85213	31,906	3	29	4	42		
16	Automotive parts, accessories & tire stores	85215	16,197	0	0	2	21		
17	Automotive parts, accessories & tire stores	85224	43,571	6	100	5	58		
18	Automotive parts, accessories & tire stores	85225	66,102	5	34	7	88		
19	Automotive parts, accessories & tire stores	85226	39,387	3	21	4	52		
20	Automotive parts, accessories & tire stores	85248	34,706	1	3	4	46		
21	Automotive parts, accessories & tire stores	85249	9,258	1	3	1	12		
22	Total		621563	70	825				
23									
24	Tire dealers	85201	49,917	6	45	3	34	Strong representation	
25	Tire dealers	85202	41,290	2	29	2	28		
26	Tire dealers	85203	36,840	3	24	2	25		

where

Pop200 Census is the population for a given zip code (“Mesa ZipCodes (pop)” worksheet).
 Num Est is the number of establishments e.g. stores of a given type in a zip code
 Total Emp is the total number of employees for all stores of a given type in the zip code
 Expected Est is the forecasted number of establishments/stores of a given type in a zip code
 Expected Emp is the anticipated or forecasted total number of employees

To calculate the Expected Est column, you will first need to sum up the Pop2000 Census column as well as the Num Est column. You can do this using the SUM command in Excel. In the example above, the commands will be =SUM(C5:C21) and =SUM(D5:D21) respectively. Next, the $\text{Expected Est}_{\text{ZipCode}} = \text{Population}_{\text{ZipCode}} * (\text{Total Population}_{\text{All ZipCodes}} / \text{Num Est}_{\text{All ZipCodes}})$ is calculated. In our example above, the formula is =C5/(\$C\$22/\$D\$22). Be sure to change the cell reference \$C\$22 and \$D\$22 for each store type. Use a similar logic process for the

Expected Emp column. After you have finished this exercise, you are now in a position to see whether a void exists with respect to a particular store type. Use the following categories

Limited representation = Strong Opportunity

Moderate representation = Moderate Opportunity

Strong representation = Limited Opportunity

in doing your void analysis. In our example above, there is limited opportunity for another Automotive parts, accessories & tire store since according to Central Place Theory based on population alone, the population should be able to support 6 stores and currently there are 7 stores.

An example of a void analysis and also a tenant matrix analysis can be found at <http://cityofpetaluma.net/edr/pdf/reportjune4.pdf> (Petaluma Leakage & Sustainable Retail Strategy Study, June 2004). Another example of void analysis is available at <http://www.downtownfrederick.org/downloads/DowntownFrederickRetailMarketAnalysis11-25.pdf>.

2. Estimating Retail Demand and Leakage/Surplus for Subject Zip Code: A problem with the preceding void analysis based on population is that it doesn't consider purchasing power or the extent to which consumers are traveling outside of their community (zip code) in order to purchase goods and services.

- a. Purchasing Potential Index: Using the "2a. Purchasing Potential Index" worksheet template, calculate the purchasing potential index (PPI) for the various zip codes. PPI is calculated as the trade area's (zip code) per capita income divided by the U.S. per capita income.
- b. Sales per Capita: Calculate the sales per capita for Maricopa County and the United States using the template provided in the "2b. Sales per Capita (Mrcpa US)" worksheet. Sales per capita is computed by dividing sales by the population. The sales column is labeled "Sales, shipments, receipts, revenue". Observe that sales data may not be available for all NAICS industries for Maricopa County which is the reason why we also compute Sales per Capita for the U.S. as a whole. Using your results, fill in column U wherein use Sales per Capita for Maricopa County unless sales data isn't available in which case you will input the Sales per Capita for the U.S. This can be modeled in excel using the IF function. For example, in row 5, column U (cell U5) you can input =IF(H5=0,Q5,H5) which states that if there is no sales per capita for Maricopa county (H5) then use the sales per capita for the nation as a whole (Q5) otherwise use the sales per capita for Maricopa county (H5).
- c. Zip Code Sales per Capita: Calculate the potential sales demand for the subject zip code 85201 where Mekong Plaza is located in using the "2c. ZipCode Sales per Capita" worksheet template. To compute the Sales per Capita for 85201, multiply the Sales per Capita that you did in part 2b. by the Purchasing Potential Index results in part 2a. The intuition for this is that you are adjusting sales per person by their income since consumers in our subject zip code are poorer on average relative to the nation as a whole. Total sales demand in zip code 85201 for a given NAICS category is calculated as ZipCode 85201 Sales per Capita * Population in ZipCode 85201. Finally, the demand in square feet is computed as Total Sales Demand in Zip Code 85201 divided by Sales per Square Foot of Gross Leasable Area (GLA).

- d. Retail Surplus or Leakage for Zip Code 85201: Using the template provided in the “2d. Retail Leakage Surplus (85201)” worksheet, calculate whether a retail surplus or retail leakage exists for a particular Consumer Expenditure Category in zip code 85201 using your results from the “2c. ZipCode Sales per Capita” worksheet. If the Potential Sales of a community does not match what is actually spent (Actual Sales), then business is apparently going elsewhere. This is the “surplus” or “leakage”, which is calculated by finding the difference between Potential Sales and Actual Sales.

If Actual Sales are greater than (>) Potential Sales, the community experiences a retail trade surplus.

If Actual Sales are less than (<) Potential Sales, the community experiences a retail trade leakage.

You can use an IF statement in column E to denote whether a surplus or leakage is present for a given consumer expenditure category e.g. =IF(C6>D6,"Retail Trade Surplus", "Retail Trade Leakage") .

3. Marketing: At present, marketing for the development consists of a website whose URL is <http://www.mekongplaza.com/>. Please discuss and prepare materials on how you would market the site including but not limited to Branding, Print, Advertising, and a 3-D model. For ideas, please visit <http://www.crestnyc.com> for a general overview. For an example of an Asian motif, please look at <http://www.chinatownaustin.com/> , <http://www.lvchinateown.com/>, <http://www.sanfranciscochinatown.com/>, or <http://www.phxchinatown.com/>.