

Date Published: 10-1-2007

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Kalyan Chakraborty
Emporia State University

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Recommended Citation

Chakraborty, K. (2007). Hispanic Population and Its Economic Impacts. *Mountain Plains Journal of Business and Technology*, 8(1). Retrieved from <https://openspaces.unk.edu/mpjbt/vol8/iss1/10>

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HISPANIC POPULATION AND ITS ECONOMIC IMPACTS

KALYAN CHAKRABORTY
EMPORIA STATE UNIVERSITY

ABSTRACT

The purpose of this study is to quantify the monetary impact of the expenditures of the Hispanic households and their guests and visitors on the local economy. This study applied input-output procedures and estimated output, income, and employment impacts of the Hispanic expenditure on the local economy of the Emporia area, Kansas. The Emporia area is defined in this study as a seven-county region consisting of Chase, Coffey, Greenwood, Lyon, Morris, Osage, and Wabaunsee counties and together they constitute 27 percent of the Hispanic population in the area. The multiplier impact of \$38 million direct expenditure by the local Hispanic community is impressive. These expenditures generate an additional \$56 million spent locally on consumption of goods and services and \$13.5 million in household earnings. Consumer spending also creates 630 additional jobs which are shared by both the Hispanic and non-Hispanic populations. For every dollar of direct expenditure by the Hispanic population, there is an additional \$1.52 of output and \$0.36 of household earnings in the local economy. For every Hispanic employment there is an additional 0.18 employment generated in the local economy. The study found that the presence of a vibrant Hispanic population is becoming an ever-increasing economic factor in the Emporia area. With the current Hispanic population growth rate in the U.S. and anticipated new immigrants, this impact will only continue to increase and would become more prominent in the region's overall economic prosperity.

I. INTRODUCTION

Over the past two decades, the unprecedented growth of the Hispanic² population in the United States has played a significant role in the labor force across the country. According to the Census 2000, Hispanics constitute the largest minority group in the United States. Currently one in seven people in the U.S. is a Hispanic. Given the existing birth and immigration rates, their share of buying power is being felt throughout the nation. A recent study found between 1999 and 2007 spending power of the Hispanics have grown by 300 percent while the spending power of the non-Hispanics have grown by only 125 percent (Kelleher, 2007). Between 1990 and 2000, when U.S. overall population increased by 13 percent, the Hispanic population

increased by 58 percent. According to a report from the Bureau of Census (June 2005), the Hispanic population grew from 35.3 million in 2000 to 41.3 million in 2004, and the growth rate for Hispanic population was 3.6 percent in 2004. Most of the states would have had little or no growth had it not been for the increase of the Hispanic population in the last decade (Carranza and Gouveia, 2002). Migration from the Southern states as well as new international immigrations brought new residents to the Northern Plains States between 1990 and 2000. The Hispanic population in Kansas and Missouri increased by 100 percent in the last decade and the population in Lyon County, in particular, increased by 184 percent (Census, 2000). The Hispanic population in the Emporia area, defined in this study as a seven-county region consisting Chase, Coffey, Greenwood, Lyon, Morris, Osage, and Wabaunsee counties, constitutes 8 percent of the total population.

Whereas in the past most of the Hispanic workers tended to concentrate in agriculture, today they are often employed in meat packing, food processing, landscaping, construction, manufacturing, and semi-skilled jobs. The social, economic, and demographic impact of the local Hispanic population is substantial for a small town in rural America such as the Emporia area. The purpose of this study is to quantify the monetary impact of the expenditures of the Hispanic households and their guests and visitors on the local economy. Although the study estimates the direct and indirect effect of household expenditures of the Hispanic population, it does not provide any estimates for the beneficial social and cultural contributions that this population brought into this regional economy.

Since the local and state policy makers decide on resource allocations to provide various assistances to the Hispanic and other immigrant population in the region, it is essential to evaluate the costs of providing these essential services (i.e., English as a Second Language program; bilingual staff; language specific materials) with the economic benefits such population provides (Kielkopf, 2000b). Using Hispanic household survey data, this study provides a more direct and accurate picture of the economic impact of the Hispanics. The arrangement of this report is as follows: the next section discusses the background for this study the survey method is discussed in the third section, followed by a section on survey findings. Methodology is discussed in section five, results from the impact estimates are discussed in section six, and the summary and conclusions are in the last section.

II. BACKGROUND

The Hispanic population in the Emporia area has been increasingly attracting the attention of local retailers and national marketers. The Hispanic market has become a focus of local and regional financial services institutions, car dealers,

supermarkets, school districts, higher educational institutions, healthcare providers, and service providers in telecommunications, cable televisions, and internet services (Montuori, 2003). According to the 2000 Census, Lyon county has the sixth largest Hispanic population in Kansas which has grown from 4.4 percent of population in 1980 to 17 percent in 2000 (Middleton, 2002). New census data revealed that the Hispanic population in non-metro counties grew 70.4 percent from 1990 to 2000, while the Non-Hispanic (Whites) grew by 8.6 percent.

Most of the Hispanic residents in Kansas are of Mexican or Mexican American descent. Historically, Hispanic immigrants mostly came to Kansas to build railroads, work as farm laborer in agriculture, or work for meat packing plants. The most common reason for Hispanic to come to the U.S. is employment opportunities and for some to reunite with their families. As a consequence, Hispanic residents tend to locate near employment opportunities and family members (Kielkopf, 2000a). The Hispanic population in 2000 concentrated in the top five metro areas of Los Angeles, New York, Miami, Chicago, and San Francisco. Together they constituted 42.2 percent of the total Hispanic population in the U.S. (Montuori, 2003). In a study of the Hispanics in the Kansas City area, Lewis (2004) found 90 percent of the respondents came to the area seeking employment and 67 percent had a family member or friends already living in that area.

Table 1: Hispanic Population Demographics, Emporia Area, 2003

County	Total Population	Hispanic Population	Percent Hispanic	Number of Households*
Lyon	35,805	5,987	16.7	1,901
Chase	3,107	53	1.7	17
Coffey	8,815	132	1.5	42
Greenwood	7,485	127	1.7	40
Morris	5,995	132	2.2	42
Osage	16,784	252	1.5	80
Wabaunsee	6,767	128	1.9	41
Emporia Area	84,758	6,811	8.03	2,163
Kansas	2,723,507	190,645	7.0	40,624

*From the survey, the average family size for Hispanic households in Lyon county is 3.15; the same number is assumed for adjacent counties in the Emporia area. Source: Capweb, Kansas Government Census Agencies & Political Information, U.S. Census Records, 2003

A study by the Pew Hispanic Center (Kochhar, 2005) found that throughout 2004 Hispanics maintained the role as a primary force of change in the U.S. labor market. The demand for immigrant labor remained high and about one million new

jobs in 2004 were filled by the foreign-born Hispanic. The vast majority of them are in low-skill occupations that require less than a high school education. A study by Newman (2003) found the growth of the rural Hispanic population reduced wages of male skilled workers in rural areas. Also, increased supply of unskilled Hispanic laborers in parts of the manufacturing and service industries caused a lower demand and lower wages for skilled labor in those industry sub-sectors.

In the past, studies have estimated the economic impact of the Hispanic/Latino population on the local economy using input-output models. However, most of the studies used indirect methods to assess the household consumption/expenditure pattern of the Hispanics and estimated economic impact based on such expenditures. For example, Mendoza et al. (2001), used census data for the Hispanic population in the Memphis area and assessed the household income and expenditure based on the proportion of Hispanic employment in specific occupations in the area and average earnings for those occupations. Information on the percentage of Hispanic employment in the local area industries was collected from an employer survey. Kielkopf (2000a) in his study on South Central Minnesota counties used Latino employment data from the U.S. Equal Employment Commission (EEC) Survey of firms and estimated economic impact of expenditures of the Latino workers applying the standard IMPLAN-industry database. The major limitation of the EEC survey is that it does not cover establishments that employ less than 100 employees. The study estimated economic impact for selected two-digit SIC industries in the regional economy. In estimating economic impact of the Hispanic population in Eastern North Carolina counties, Simpson et al. (1999), used a direct questionnaire survey for collecting some demographic information of the Hispanic population in the area but no information was obtained on the pattern of household expenditure. As a result, their study applied average spending pattern of a native U.S. citizen from consumer price index (CPI) data and applied RIMS multipliers to estimate economic impacts.

The common drawback for all of these studies is that the economic impact of the Hispanic population was estimated without collecting the detail information on how the Hispanic households spend their money on goods and services including sending money abroad. An important aspect of economic impact analysis using input-output models is access to information on direct expenditure for the relevant unit of analysis, in this case the Hispanic households. The differences in social, cultural, and economic backgrounds between the Hispanics and the average non-Hispanic-native Americans are reflected in the spending behavior for these two ethnic groups. For example, consumer spending survey (CES) conducted by bureau of labor statistics (BLS) found on average Hispanics spend more than non-Hispanics on groceries, telephone services, appliances, vehicles, clothing and housing (Kelleher, 2007). Hence, the use of any indirect method assessing expenditure patterns of the Hispanics

would be inappropriate or inaccurate. If such information is used for economic impact analysis, the estimated impacts would either under or overestimate the true impacts (explained in detail later in this paper).

Unlike the studies discussed above, the current study used a direct mail-in questionnaire survey for collecting information on monthly household expenditures of the Hispanic families in the region and estimated the economic impact of their expenditure on the local economy using RIMS-II (Regional Input-output Modeling System) multipliers supplied by the Bureau of Economic Analysis (BEA). The economic impacts from this study are more accurate, robust, and reliable than any other study in the past. This is the greatest contribution of this study. However, the study specifically assumes that the Hispanic labor force (legal and illegal) in the Emporia area are mostly engaged in the meat packing industry (i.e., Tyson Foods) and some other service occupations which are generally not substitutable by the domestic workers. Hence, the impact analysis in this study indirectly answers the hypothetical question: what would be the economic effect of closing down the Tyson Foods in Emporia?

III. SURVEY METHOD

During the Fall of 2004, a survey instrument was developed containing fifty-one questions grouped into three distinct sections. The first section included 11 demographic questions, the second section contained 22 questions on economic information, and the third section contained 18 questions related to the respondents' perceptions on higher education and the local public-school system. The Spanish version of the survey was created with assistance from a professional translator. To achieve the maximum clarity for the questions in the Spanish version, appropriate revisions were made on the language using bilingual student and faculty resources from several Spanish-speaking nations available at Emporia State University.

Due to non-availability of mailing lists for Hispanic households in the Emporia area, it was decided that each Hispanic family with at least one child enrolled in any of the public schools in the area would be mailed a survey.³ Further, it was also decided that since Lyon County has the largest Hispanic population (16.7 percent) within the seven-county region, families of the Hispanic students in Lyon county public schools would be the major target sample. According to the Kansas State Department of Education (KSDE, 2003-04), in the Fall 2004, Lyon County had the largest population of self-declared Hispanic students (40 percent of the total enrollment in the county). It is assumed that the number of Hispanic students enrolled in Lyon County public schools is a reasonable reflection of the presence of Hispanic families in the Emporia area.

In order to encourage local Hispanics to participate in the survey, proposed benefits from this study were announced via local radio ads and newspaper reports such as *La Voz* and the *Emporia Gazette* in both Spanish and English two weeks before the actual mailing of the survey. Although the Hispanic families whose children are enrolled in the local public schools are the primary target group for the survey, to enlarge the sample size the study also included Hispanic households who are not associated with the public-school system. In order to be certain that the sample drawn is a true representative of the Hispanic population in the local area three different methods were adopted for collection information from the samples. They are as follows:

(1) *First method* - The Emporia School District administrators mailed 1,100 questionnaires to the self-declared Hispanic families who had at least one child enrolled at any of the local schools. Each survey contained a cover letter explaining the research project, the ESU Informed Consent Document, the four-page questionnaire, target population specific cartoon pamphlets advertising the study, and two postage-paid return envelopes. To maintain anonymity, respondents were asked to mail the questionnaire and the consent form separately through the ESU postage-paid envelopes.

(2) *Second method* - Trained researchers filled out the survey while conducting on-site personal interviews with the Hispanic subjects. For example, researchers visited the Flint Hills Learning Center, Flint Hills Community College Adult Education Center (where English is taught as a second language), Catholic churches, and other places to conduct personal interviews with the target population. In addition to the above, bilingual student assistants and volunteers from Emporia State University visited several other places to administer the surveys where Hispanic families regularly gather for social occasions and to celebrate festivals. Direct personal interviews were also conducted at various Hispanic stores in town, the Flint Hills Community Health Center, Flint Hills Mall, Wal-Mart, and a downtown laundromat.

(3) *Third method* - Drop boxes with survey instruments and Informed Consent Document Forms were placed for about three weeks at convenient locations in town such as Social and Rehabilitation Services (SRS), Flint Hills Community Health Center, and several other Hispanic business locations. After the expiration of the deadline, those boxes were collected, and surveys were gathered. This method was mainly designed to collect responses from those households who were not covered by the first two methods.

Out of 1,100 surveys mailed to Hispanic families by the school administrators in Emporia (USD 253), Lyon County, one hundred surveys were returned with valid and complete responses. Twenty-five surveys were returned unopened with a note either 'invalid address,' or 'unwilling to participate.' From the 700 personal interviews conducted by the researchers, 650 surveys were found complete. Further, 60 surveys were collected from the drop boxes around the town. From a total of 810 filled out surveys, eliminating surveys that had either wrong or incomplete information, a total of 664 surveys were used for the economic impact study. As a result, overall response rate is 36 percent which includes mail-in surveys, personal interviews, and the drop-box collections.⁴

IV. SURVEY FINDINGS

As mentioned earlier, the survey questionnaire was designed to collect information from Hispanic households under three distinct categories, e.g., demographic, economic, and perception on higher education and the public-school system. Information was also collected on the number of visitors/guests visited these families, days of stay, and the amount spent by each visitor during their stay in the previous year. The detail analysis based on information collected in the last section of the survey is beyond the scope of this study. However, interested readers may consult Grandon et al. (2005), for an overview of the data analysis for the entire survey. Some of the important findings from the demographic and economic information obtained from the survey are discussed below.

1. AGE COMPOSITION AND FAMILY SIZE

Thirty-two percent of the respondents are in age group 21-30, 35 percent are in age group 31-40, and 19 percent are in age group 41-50. Overall, 67 percent of the respondents are between the ages of 21 and 40, the prime age for the working population. The mean age for the Hispanics for the nation is 27 years (Kelleher, 2007). Past studies have also found that the new generation of Latino workers, especially the new immigrants, are younger, more skilled, and more educated than those who arrived in the last two or three decades. Lewis (2004) found 62 percent of the Hispanics in the Kansas City metropolitan area are between 25 and 40 years of age. The Hispanic population surveyed in this study typically lived in households with more persons than the native population. Fifty-eight percent of the respondents indicated 0-3 family members or friends living with them, 37 percent with 4-6 members, and the rest with 7-11 members. This brings the average household size to 3.15 for this study. The national average for Hispanic household size is 3.5 (Kelleher, 2007).

2. COUNTRY OF ORIGIN AND LENGTH OF STAY IN THE AREA

The Hispanic/Latino population from nineteen countries represents the entire sample for this study. Dominance of Mexican origin (55.4 percent) is clearly representative of the national demographic composition of the Hispanic population in the United States. According to the Census Bureau (2003), Mexicans represent 66.9 percent of the Hispanics in the U.S. followed by Central and South Americans, 14.3 percent. In the current study, 18 percent of the respondents are from El Salvador, 3.5 percent from Cuba, and 14 percent migrated to Emporia from other parts of the U.S. The majority of the respondents (85 percent) had lived in Lyon County for a year or more and only 15 percent had been in Lyon County for less than a year. Sixty-four percent of the respondents are living in the U.S. for over five years.

3. EDUCATIONAL ATTAINMENT

Forty-two percent of the respondents completed 'high school and above' which is lower than the national average (according to Census Bureau 2002, 57 percent completed high school or above). The majority of the respondents in this study had a low English proficiency level, i.e., 44.4 percent can speak 'a little' and 18.5 percent 'not at all.' However, 36.7 percent of the respondents can speak English from 'good' to 'very well.' Similar findings were obtained from several studies on the Hispanic population where the majority spoke 'a little or no English' (Arpan and Arpan, 2001).

4. STATUS OF EMPLOYMENT AND OCCUPATIONAL DISTRIBUTION

Eighty-four percent of the respondents are employed, and 41 percent had working spouses. The unemployment rate for this study is relatively high (16 percent) compared to a study by Lewis (2004) which had a 7 percent unemployment rate for Hispanics living in the Kansas City metro area. The national unemployment rate for Hispanics for 2004 is 6.9 percent (BLS 2004). The occupational distribution of the Hispanic labor force in this study is as follows: skilled and semi-skilled jobs, 68 percent (i.e., factory, warehouse, auto-repair, animal slaughter/processing); services, 14 percent (i.e., janitor, restaurants, hotel/motel, retail sales); seasonal jobs, 7 percent (i.e., roofing, construction, landscaping, picking crops, haying, custom combining); professional jobs, 11 percent (i.e., education, healthcare, legal services). The survey did not ask for any information on the legal status or work authorization for their employment. The major employer for the Hispanic workforce in the Emporia Area is Tyson Foods, Inc., an animal slaughter/processing industry. According to the U.S. Equal Employment Opportunity Commission Report (EEO, 2003), Hispanic employment in animal slaughter/processing is 43 percent nationwide.

However, the occupational distribution of the respondents in this study is in sharp contrast to the national occupational distribution for Hispanics for 2001. For example, according to EEO (2001) the top three industries with the highest percentage of Hispanic workers are all in agricultural industries. But the scenario for Hispanic occupational distribution is changing rapidly. A Census Bureau (2003) study found Hispanics are more likely than non-Hispanic whites to work in service occupations (22.1 and 11.6 percent, respectively) and only 14.2 percent of the Hispanics were in managerial or professional occupations, compared to 35 percent of non-Hispanic whites.

5. HOUSEHOLD EARNINGS AND EXPENDITURES

The average household income in this sample is \$2,106 per month or \$25,272 per year which is far above the median household earning for Hispanics living in the Kansas City metro area, \$18,000 annually (Lewis, 2004). Based on the estimates by 2003 Census the average annual household income for the 7-county region is \$36,579 and for Kansas it is \$43,113. Nationally, among full-time, year-round workers in 2002, 26.3 percent of the Hispanics and 53.8 percent of the non-Hispanic whites earned \$35,000 or more per year. On investigating the causes of low wages among Hispanic households, Fix and Passel (2003) found 62 percent of the low-wage immigrant workers are Limited English Proficient and 40 percent are undocumented (without a valid work authorization). These two groups of immigrant workers contributed heavily to the cause of low wage for the immigrants as a whole.

The information on total monthly expenditures in various categories is presented in Table 2. The average monthly household expenditure is \$1,754, which does not include the amount of money being sent to the family members living outside the Emporia area and the amount of saving. Forty percent of the respondents own a house and 54 percent did send money to their family and friends for an average sum of \$249 a month during last the 12 months. Although, one single remittance might appear to be a very small amount, but nationwide 8 million migrants from Latin America and the Caribbean sent home \$45.8 billion in 2004 (20 percent increase from 2003), Mexico received the most from remittances with \$16.6 billion (25 percent increase from 2003) (Lapper, 2005).

Table 2^a: Summary of Average Hispanic Household Expenditures by Category from Survey

Expenditure Category	Based on 644 Observations
1. House Rent	179.43
2. House Payment	196.02
3. House Repairs	40.42
4. Real Estate and Other Taxes	42.89
5. Electricity/Phone/Gas	166.74
6. Water/Garbage/Cable	68.74
7. Food at Home (groceries)	327.66
8. Food Away from Home (restaurants)	77.79
9. Automobile Payments/Maintenance	151.87
10. Automobile Gasoline	85.99
11. Car Insurance	88.07
12. Health Insurance	53.39
13. Healthcare Expenses	45.31
14. Personal Items (clothes etc.)	112.71
15. School/College Tuition	31.34
16. School/College Books and Supplies	17.28
17. Child Care	30.36
18. Entertainment (video rental, sport, concert etc.)	27.87
19. Other Expenses 1	6.51
20. Other Expenses 2	4.06
Monthly Total Expenditure	1,754

^a Table does not include \$249 per month an average Hispanic family sends abroad as transfer of fund regarded as leakage and not contributing to the local economy.

Among those who sent money in this survey, 29 percent used Western Union, 24 percent used Moneygram, 5 percent used Bank of America, and 42 percent used other means of money transfer which includes Ria Envios, U.S. mail, and through friends and families who traveled abroad. According to a study by Pew Hispanic Center (Orozco, 2004), in 2003 about 40 million remittance transactions carried money from the United States to Mexico. The four largest banks in this field – Citibank, Wells Fargo, Harris Bank, and Bank of America captured only 5 percent of that market.

6. INFORMATION ON VISITORS/GUESTS

With a significant size of the Hispanic population, Lyon County is the home of year-round Hispanic festivities and cultural events that attracts visitors from surrounding areas and out-of-state. For example, events such as Cinco de Mayo, La

Fiesta, Super Custom Car Show and Emporia State University's special events such as, Noche de Bolero Gala Night and Bonner and Bonner Diversity Lecture bring in huge numbers of Hispanic visitors to the Emporia Area. Collectively, the money spent by the visitors and guests while they are in the Emporia Area has a significant impact on the local economy. Visitors spend money buying goods and services from the local retailers, visit museums, shows, and exhibits, and participate in local area recreational activities.

Table 3: Visitor Expenditures: Local, Out-of-State, and Abroad, 2004

Description	Kansas	Out of State	Abroad
Total Number of Visitors	531	622	279
Total Visitor Days	765	1511	4,433
Average Stay Per Visit (days)	1.44	2.43	15.89
Average Expenditure Per Day (\$)	57.25	118.45	81.86
Total Expenditure (\$)	43,739	178,860	362,803

Table 3 presents visitors information in detail based on information collected from the survey. During 2003-04, there were 531 visitors from the state of Kansas, 622 from out-of-state, and 279 from abroad who visited 644 families in the Emporia area. These 1,432 visitors together they spent \$585,402, mainly on transportation, accommodation, eating and drinking, recreation and entertainment, and buying personal items. It is noticeable that the average amount spent per day by out-of-state visitors is much higher than the visitors from abroad. The reason is simple, disposable income of a Hispanic visitor from any part of the nation generally would be higher than a visitor from Mexico or El Salvador and thus the spending capacity would be higher for the domestic visitors. However, visitors from abroad on average tended to stay much longer with the host family than the other two categories of visitors.

V. METHODOLOGY

Regional impact analysis estimates the total economic impact of a given region due to changes in various economic sectors in the local economy. It measures the direct, indirect, and induced effects of spending by the Hispanic population in terms of generating output, earnings, and employment on the local economy. Direct effect is the direct spending of dollar amounts assigned to the categories that best indicate the type of industry/business to be affected. Indirect effects are for those industries that sell products/services to the directly affected industries. The induced effects are mostly the changes in the economy caused by changes in spending by the workers in both directly and indirectly affected industries (Kielkopf, 2000a). The use of input-output models for estimating economic impacts are common in regional economics

literature (Chakraborty and Edmiston, 2003) but the use of such models for Hispanic economic impact analysis is not very common in the literature (Kielkopf, 2000a, b; Mendoza, 1999; Simpson et al. 1999). The input-output model breaks down the total Hispanic expenditure into detailed economic sectors. Each sector is dependent to some degree upon other sectors. If there is a change in the level of activity in one sector, this will directly or indirectly cause a change in the level of production in other regional sectors. The amount of economic activity among different economic sectors measures the degree of interrelationship between sectors. These interdependencies among regional economic sectors can be estimated through interindustry or input-output analysis based on a transaction matrix and direct requirement matrix. A simple input-output model is produced in Appendix A-1.

The Hispanic population living in the Emporia area (6,811) directly affects the economic activity in the local area spending \$46 million each year on goods and services which creates an indirect economic 'multiplier' effect on the local economy (see Table 4 for detail). These local purchases generate additional income for local residents, leading to further spending and income for all residents. Thus the spillover effect of Hispanic expenditure continues after the initial money is spent as it generates further income and employment for all residents living in the local area.

1. TRANSACTIONS MATRIX

The transactions matrix shows the monetary flow of goods and services between all individual sectors of the economy in a given year. The columns of the transactions matrix depict the composition of inputs required by a given industry to produce its output. The rows of the transactions matrix reflect the distribution of a given industry's output throughout the economy. In other words, columns show the purchases by a given industry from all other industries, and rows show sales by a given industry to all other industries (Pogue et al. 1994; Harris et al. 1993). The goods and services used in the processing sector are intermediate goods which are used in the production of goods and services that are finally sold to the final consumers. A transaction table is presented in the Appendix A-2.

2. DIRECT REQUIREMENTS MATRIX

The direct requirements matrix establishes the relationship among the processing sectors of the model. Direct requirement coefficients are calculated only for the processing sectors of the transaction table. It shows the requirements for a given industry to produce an average of \$1 of output. These direct requirement coefficients are obtained by dividing purchase data in each industry column of the transactions matrix (value in a column cell) by the corresponding output value for the

industry (total output of the column). The column sum of the direct coefficients for a given industry shows the direct effect of changes in the volume of output of a given industry upon other industries of the economy. (Sector and industry have been used interchangeably throughout the study.) (See Appendix A-2)

VI. ECONOMIC IMPACT OF THE HISPANIC POPULATION

Economic impacts are translated through the effect of multipliers. Expenditures on economic sectors associated with high multipliers would transmit higher economic impact than sectors with low multipliers. Multipliers used in this study are provided by the RIMS-II, Bureau of Economic Analysis, Washington D.C.⁵ The RIMS-II multipliers were generated based on the Input-Output model of Kansas' economy linked to the national economy. Of the two sets of multipliers provided by RIMS-II, this study uses final demand multipliers for output, earnings, and employment aggregated for 20 row and 60 column industries. Multipliers obtained for the Emporia Area (seven-county region) are used for this study. In order to apply RIMS II multipliers (using 'changes in the bill-of-goods' method) all purchases/expenditures were converted into regional purchases in producers' prices and then multiplied by the final demand multipliers for output, earnings, and employment to yield the impacts.⁶

Table 4, column 2 displays the disaggregation of the total Hispanic spending into 13 economic sectors, which is derived from an aggregation of 60 regional economic sectors (RIMS II). At first, the nature and amount of each item of expenditure were assigned to one of the 126 industry sub-groupings listed in Appendix B of RIMS-II (not reported here). These expenditures were then further identified with the 60 industry groupings (also called economic sub-sectors) based on the Standard Industrial Classification (SIC) code as per the detailed list provided by BEA for their input-output model in Appendix C of RIMS-II (not reported here). Once all expenditures are assigned to one of those 126-industry groupings, they were aggregated to 60 sectors for which multipliers are available. However, before applying multipliers (now disaggregated to 60 economic sub-sectors), these sectors were further aggregated to 20 sectors based on Appendix-D of RIMS-II and reported in column 2 of Table 4. Since no expenditure was reported for seven economic sectors from the respondents' survey, total economic sectors reported in Table 4 are 13-row industry aggregation.

Table 4: Direct Expenditures by Economic Sectors, 2004

Economic Sectors ^a	Total Direct (millions \$)	Emporia Area (millions \$)
1. Utilities	6.1121	5.0119
2. Manufacturing	7.2202	5.9205
3. Wholesale Trade	0.9292	0.7619
4. Retail Trade	3.6015	2.9533
5. Transportation and warehousing	6.6024	5.4140
6. Finance and insurance	3.9509	3.2398
7. Real estate and rental and leasing	11.9076	9.7642
8. Educational Services	0.8135	0.6670
8. Health care and social assistance	1.1761	0.9644
10. Arts, entertainment, and recreation	0.8809	0.7223
11. Accommodation and food services	2.1677	1.7775
12. Other services	0.1054	0.0864
13. Households	0.7880	0.6462
Total	46.2554	37.9294

^aOut of twenty aggregated economic sectors from BEA Appendix-C Table, survey responses reported expenditure for thirteen economic sectors in this study.

Not all Hispanic expenditures remained within the local area because some goods and services were purchased or taxes and fees were paid outside of the local area. Hence, those expenditures would not have any impact on the local economy (7-county region). After allowing for spending leakage consistent with some of the past studies in the literature, it is assumed that 82 percent of the expenditures remained in the local economy (Simpson, 1999). The percentage of expenditure (18 percent) that leaked out of the region a part of which stayed within the boundaries of the state and part further leaked out of state. Since the study is restricted to the estimates of economic impact on the 7-county region (Emporia area), the impact of such leakages are not considered here. Column 2 of Table 4 reports total expenditures disaggregated to 13 economic sectors and Column 3 shows the proportion of expenditures that remained in the Emporia Area (no expenditure were reported for seven economic sectors). In FY 2004, 2,163 Hispanic households directly spent a total of \$46 million of which \$38 million (82 percent) were expended in the Emporia Area. The initial total expenditures of \$46 million include the cost of remitting \$2,988 per year per household for 1,168 households (from the survey 54 percent sent money back home). In other words, Hispanic workers sent a total of \$3.49 million to their families residing abroad. While remittance is a leakage for the local economy, the commission paid to the local micro finance agencies for money transfer stays in the economy and would affect the economic activities. Using the nationwide average commission rate for micro finance agencies as 8 percent, a total of \$279,199 was spent last year by the Hispanic workers to send their money abroad.

Using the final demand interindustry coefficient matrix, the indirect and induced impacts of Hispanic expenditures were calculated. These indirect and induced impacts are the result of re-spending of businesses and households. The re-spending would continue to impact the local economy by creating employment, increasing economic output, and increasing household incomes. Table 5 shows the estimated impacts of final demand multipliers for output, earnings, and employment for the Emporia Area due to Hispanic expenditures in the Emporia Area. The aggregation of expenditures from 60 sectors to 13 sectors was done after multipliers were applied to each of those 60 sectors.

The Hispanic direct expenditures of \$38 million in the Emporia Area (Table 5) generate an indirect and induced effect of \$56 million output, \$13 million earnings, and 630 jobs locally. These indirect and induced impacts, when added to the initial changes, yielded \$94 million in output, \$14 million in earnings, and 4,150 jobs in the Emporia Area. As suggested by one of the reviewers, this study made an effort to estimate the output, earnings, and employment effects of Hispanic expenditure using national/census data. For example, from consumer expenditure survey (CES, 2004) nation wide an average Hispanic family spent \$37,677 per year however, the sample average for this study is \$21,048. Assuming Hispanics in the Emporia area spend as the national average and their expenditure pattern is identical to national CES survey for an average Hispanic family, it generates a total direct expenditure of \$66.8 million in 2004. When RIMS-II multipliers are applied to this data, it generated an indirect and induced impact of \$89.3 million output, 22.6 million earnings, and 1,014 jobs in the local economy. These impact estimates far exceed the impact estimated using sample information. Thus it is argued in this study that most of the studies in the past either over or under estimated the actual economic impact because they used national or census data for assessing local economic impact (Simpson, 1999; Kielkopf, 2000a).

Table 5: Output, Earnings, and Employment Effect of Hispanic Expenditures in the Emporia Area, FY 2004

Economic Sectors	Direct Exp (mill \$)	Impacts		
		Output (mill \$)	Earnings (mill \$)	Employ (jobs)
1. Utilities	5.0119	6.9636	1.5121	35.4
2. Manufacturing	5.9205	12.6131	1.7898	89.2
3. Wholesale Trade	0.7619	1.0646	0.3356	9.6
4. Retail Trade	2.9533	4.2196	1.3718	72.4
5. Transportation and warehousing	5.4140	8.2898	2.9626	174.8
6. Finance and insurance	3.2398	4.3580	1.3403	39.3
7. Real estate and rental and leasing	9.7642	11.7290	1.6874	73.7
8. Educational Services	0.6670	1.0208	0.4177	22.2
8. Health care and social assistance	0.9644	1.4916	0.6268	25.0
10. Arts, entertainment, and recreation	0.7223	1.0649	0.3875	25.8
11. Accommodation and food services	1.7775	2.7840	0.9592	54.5
12. Other services	0.0864	0.1285	0.0424	2.1
13. Households	0.6462	0.4469	0.1301	5.7
Sub-total	37.9294	56.1744	13.5633	629.9
Add Initial Change		37.9294	0.6462 ^a	3,520 ^b
Total Impact		94.1038	14.2095	4,150

^aDirect household earnings

^bHispanic employment rate in Lyon County in 2004 is 83.5 percent assuming same employment rate for 7-county region generates 3,520 employed Hispanic residents in the Emporia Area.

The three most important economic sectors in the Emporia Area are manufacturing, transportation and warehousing, and real estate and rental and leasing. These sectors together generated \$33 million in output, \$6 million in earnings, and 338 jobs in the Emporia Area. The output multiplier for Hispanic expenditures is calculated as 2.47 and the household income multiplier is 1.06. This implies that for every dollar of direct expenditure by the Hispanic population, there will be an additional \$1.52 output and \$0.36 household earnings in the local economy. Table 5 also reveals that direct employment of 3,520 Hispanics would generate an additional 630 jobs in the local economy leading to an employment multiplier of 0.18. This implies that for every Hispanic employment, there will be an additional 0.18 employment in the local economy. It is to be noted that these additional jobs will be occupied by both Hispanic and non-Hispanic population living in the Emporia Area.

VII. SUMMARY AND CONCLUSIONS

This study applied input-output procedures and estimated output, income, and employment impacts of the Hispanic expenditures on the local economy. The

multiplier impact of \$38 million direct expenditures by the local Hispanic community is impressive. These expenditures generate an additional \$56 million spent locally on consumption of goods and services in the Emporia Area. Consumer spending also creates 630 additional jobs which are shared by both the Hispanic and non-Hispanic population. For every dollar of direct expenditure by the Hispanic population there is an additional \$1.52 output and \$0.36 household earnings in the local economy. For every 100 Hispanic employment there are additional 18 jobs created in the local economy which is shared by both the Hispanic and non-Hispanic population.

However, considering the number of undocumented Latino workers in the United States, economic impact estimates based on Census data on the population clearly underestimates the true impacts. The Pew Hispanic Center estimates there are around 7 million undocumented labor force in the U.S. in 2004 which is 5 percent of total U.S. workers (Passel, 2005). About 80 percent of the undocumented workers are of Hispanic origin, Mexican being the majority. Studies have also found these undocumented workers with fake Social Security numbers not only paid taxes, but also contributed to Social Security and will never collect. Maceri (2005) reported in his study that these workers contributed \$7 billion per year to Social Security. If the expenditure of the undocumented Latino workers living in the Emporia Area is included in the estimation, the total economic impact would have been much higher than the current estimates. For example, Kielkopf (2000b) found that if undocumented workers were removed from Minnesota, the growth of the state economy would have been 40 percent less in 1997. Those undocumented workers spent \$1.3 billion in direct expenditures and the employment multiplier showed every undocumented worker produced enough to provide at least one more job to a citizen or legal resident in Minnesota.

In sum, the Hispanic population plays an ever-increasing role in social life and regional economy of the Emporia Area. This community contributes a new element of cultural diversity in the city's schools and colleges, churches, and neighborhoods. Research findings on collective assessment of their work are highly favorable. Hispanics are known to work diligently, for long hours, produce high quality work and are highly recognized for their craftsmanship and creativity (Arpan & Arpan, 2001). In conclusion, the current study found that the presence of a vibrant Hispanic population is becoming an ever-increasing economic factor in the Emporia Area. With the current Hispanic population growth rate in the U.S. and anticipated new immigrants, this impact will only continue to increase and would become more prominent in the region's overall economic prosperity.

ENDNOTES

1. Associate Professor, Box 4057, School of Business, 1200 Commercial Street, Emporia, KS66801-5087, email at chakrabk@emporia.edu, telephone 620-341-5913, fax 620-341-6346. The author gratefully acknowledges the contribution of Elizabeth E. Grandon, Department of ACIS, and Marco Polo Hernandez Cuevas, Modern Languages Department, Emporia State University (ESU) for developing the survey instrument and collecting the dataset for this study. The entire dataset for this study was arranged by Karina Casas Gil, Graduate Assistant in the Department of ACIS. The author would like to thank Eswin Rios of the Friend in Faith, Liz Martell of Emporia Chamber of Commerce and Visitors Bureau, Elizabeth Nelson, Coordinator, Multicultural Program and Services at ESU, and Glenda Estes in the School of Business Dean's Office, ESU, for providing valuable information and assistance for this study. Special thanks to the Emporia Public School District (USD 253) for providing logistical and other support for conducting the survey. The author has greatly benefited from several constructive comments and suggestions by Kay Schallenkamp, President, and John Schwenn, Vice President (Academic Affairs), Emporia State University, on the preliminary version of a report prepared Grandon et al. in May 2005. Partial funding for this study was provided by Graduate Studies and Research, School of Business, and College of Liberal Arts & Science at Emporia State University.
2. Consistent with the U.S. Census Bureau, 2000 the term "Hispanic" is used to represent both "Hispanics" and the "Latino" population in this paper. The Office of Management and Budget (OMB) defines Hispanic or Latino as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race." Origin can be considered as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States.
3. The study recognizes the fact that the samples collected for the analysis are not random. The primary reason for using non-conventional methods for the sample survey is non-availability of exclusive Hispanics mailing list from both random digit dialing (RDD) and INFOUSA sample providers. When contacted by the author both sample providers expressed that the mailing lists are compiled from the last names generally belong to Hispanics however, they would not guarantee that the purchased list contains 95 or higher percent of Hispanic individual.

4. Out of 1,860 survey responses received only 664 were actually used for this study, a 35.7 percent response rate. As suggested by a reviewer the study performed a formal sample size test. Since this study measures the economic impact of Hispanic expenditure the crucial variable in the annual expenditure by an average Hispanic household. Assuming the margin of error as \$100 this implies the study can tolerate a maximum difference between the sample mean (\$21,048) and population mean as \$100. The question is how many samples must be randomly selected to be 95 percent sure that the sample mean is within \$100 of population mean. Using a 95 percent confidence (z-statistics as 1.96), and the standard deviation of the sample as 797.28, the minimum sample size is calculated as:
$$n = \frac{(z^2)(SD^2)}{E^2} = \frac{(1.96 * 797.28)^2}{100^2} \approx 244$$
5. Benchmark Input-output Accounts of the US-1997 and 2001 Regional Accounts Data, US Dept. of Commerce, Economics and Statistics Administration, Washington, D.C. 20230. Final demand multipliers obtained from BEA, RIMS-II measure the impact of an industry output and earning from a one dollar increase in spending in that industry. Employment multiplier measures the impact in terms of increase in the number of jobs due to a one million dollar increase in spending in that industry. The unit of analysis in this study is expenditure incurred by the households in different economic sectors instead of income earned from an occupation. Thus, based on detail information on each item of expenditure they were disaggregated, at first, into 473 detail industries (NAICS – Appendix-A), then to 126 sub-groups (Appendix-B), to 60 sub-sub-groups (Appendix-C) and finally to 20 major industry groups (Appendix-D). These appendices are not reported in the paper.
6. Regional Multipliers – A User Handbook for the Regional Input-output Modeling Systems (RIMS II), Third Ed.

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APPENDIX A-1: SIMPLE INPUT-OUTPUT MODEL

Let X_j = Total output of sector j

x_{ij} = Flow of input from sector i to sector j

Y_j = Total final demand or consumption for j 's product such that we can write:

$$X_j = x_{j1} + x_{j2} + x_{j3} + \dots + Y_j$$

$$X_j = \sum_{i=1}^n x_{ji} + Y_j \quad j = 1, \dots, n \quad (1)$$

Let $a_{ij} = \frac{x_{ij}}{X_j}$

Where a_{ij} is the direct requirement coefficient i.e. purchase by sector j from sector i to produce \$1 worth of output by sector j , and X_j is the value of total output by sector j .

$$X_j = \sum_i \left(\frac{x_{ji}}{X_i} * X_i \right) + Y_j \quad j = 1, \dots, n \quad (2)$$

$$X_j = \sum_i a_{ji} X_i + Y_j \quad j = 1, \dots, n \quad (3)$$

$$X_j = \sum_{i=1}^n a_{ji} X_j + Y_j \quad j = 1, \dots, n \quad (4)$$

Let $A = (n \times n)$ matrix of direct requirement coefficient of a_{ij} ,

$X = (n \times 1)$ vector containing total output of n sectors,

$I = (n \times n)$ identity matrix

Then, $(I - A)X = Y$ (5)

$$X = (I - A)^{-1}Y \quad (6)$$

Matrix X shows the effect on the regional economy from changes in sales to final demand.

APPENDIX A-2: TRANSACTION TABLE

Output Input	Sectors 1..... <i>j</i> <i>n</i>	Final Demand	
1 - - - <i>i</i> - <i>n</i>	X_{ij} Quadrant I (Processing Section)	Quadrant II (Final Demand Section)	X_i
Final Payments	Quadrant III (Final Payment Section)	Quadrant IV (Final Demand and Payment Section)	
	X_j		

Quadrant I is the processing sectors that produce and buy goods and services from other processing sectors for their own production of intermediate goods. Quadrant II includes sales to final demand of goods and services. Final demand section includes net inventory change, exports, government purchases, capital formation and purchases by households. Quadrant III is the final payment section that includes non-processing supply sectors such as imports, depreciation, and households. Quadrant IV represents direct inputs of final demand which are not produced by industries in the processing sector. Reading down columns imply input costs required by a given sector to produce its output and across row implies sale of given sector to all other sectors. A total of n industries are listed across the top and left hand side of Quadrant I. For a given industry i , reading across the row gives the sales of that sector to all other sectors in the regional economy. For example, the values in cell where row i intersects with column j (x_{ij}) represents the sales of sector i to sector j which is also the purchase of sector j from i . (Pouge et al. 1994)