



# Traded Business Clusters Study Charlotte, Collier, and Lee Counties



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## **PREFACE**

### **Traded Business Cluster Study Charlotte, Collier, and Lee Counties**

This document represents an important collaboration between the University and the Economic Development Organizations in Charlotte, Lee, and Collier Counties. Industry cluster analysis adds a new dimension to understanding competition, recruiting, and growing competitive regional clusters of firms, their supporting institutions, and the business environment.

Industry Clusters are geographic concentrations of business suppliers, producers, service providers, and associated institutions that increase productivity and give a competitive advantage to the firms and the overall business or cluster. This research study focuses on traded industry clusters in the Southwest Florida region. Traded industry clusters compete for national and international market share and export a large part of their product or service outside the local regional economy.

The project was administered by Florida Gulf Coast University's Regional Economic Research Institute (RERI) with support from the regional economic development organizations. This is a continuing part of our mission to improve the overall understanding of the regional economy.

*Dr. Gary Jackson*

Director  
Regional Economic Research Institute  
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June 19, 2006

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# RESEARCH TEAM

**Regional Economic Research Institute (RERI)** is part of the Lutgert College of Business at Florida Gulf Coast University, and represents collaboration with local and regional governments to develop regional models and studies.

**Dr. Gary Jackson** (Project Director) is currently the Director of the Regional Economic Research Institute at Florida Gulf Coast University. Dr. Jackson's specialty area is economic analysis and he has conducted extensive research and analysis of numerous industries and organizations. Dr. Jackson earned his Ph.D. in Economics from University of Massachusetts and has been an Assistant Professor of Economics for the University of Tennessee at Chattanooga and is a faculty member of the School of Business at Florida Gulf Coast University. He also had over 23 years experience with the Tennessee Valley Authority in a number of capacities with experience ranging from market analysis and policy, economic forecasting, energy policy, trading and options, to planning and strategic development.

**Dr. Arthur Rubens** (Project Consultant) is an Associate Professor of Management in the College of Business and former Director of Sponsored Projects and Programs in the College of Business, Center for Leadership and Innovation, at Florida Gulf Coast University. Dr. Rubens has over 25 years experience as an educator, administrator and consultant, having worked with both public and private organizations. Dr. Rubens is experienced in qualitative and quantitative research methods, strategic planning, and quality improvement techniques and practices.

**James Breitbach** (IT Consultant) has been on the technical staff of the College of Business for seven years. His responsibilities include web design and data analysis. Prior to joining FGCU, he held a variety of engineering positions at General Motors for 33 years.

# EXECUTIVE SUMMARY

This study is the result of collaboration between Florida Gulf Coast University's Regional Economic Research Institute (RERI) and the economic development organizations in Charlotte, Collier, and Lee Counties. The objective of this study was to obtain, review, and analyze traded industrial cluster data for each county and the region. It is hoped that this research will provide a better understanding of the existing industries and clusters and help economic development organizations and policymakers in their efforts to target certain industries and industry clusters.

This study includes three major components:

1. A review of business sector employment and average annual pay levels for Charlotte, Collier and Lee Counties by two-digit NAICS codes (North American Industry Classification System).
2. A ranking of traded industrial clusters using Michael Porter's cluster analysis available through Harvard University's *Institute for Strategy and Competitiveness* (This provided an initial screening of 40 clusters at the county level).
3. Analysis of ten industry trade clusters. Eight potential traded clusters were selected based on average annual pay levels and presence of firms in the local region for further analysis with the latest 2004 annual employment and annual pay data from Florida's Agency for Workforce Innovation. In addition, Visitor Services (Tourism) and Entertainment were added since the analysis indicates that these two clusters would have sufficient companies and employment to be classified as a traded cluster.

Michael Porter of the Harvard Business School and the *Institute for Strategy and Competitiveness* has studied industry clusters and competition for a number of years and is a well known expert in the field of cluster analysis. Porter's website, [www.isc.hbs.edu](http://www.isc.hbs.edu) provides a good definition and overview of industry clusters:

- *“Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region.”*
- *“Clusters arise because they increase the productivity with which companies compete.”*
- *“The development and upgrading of clusters is an important agenda for governments, companies, and other institutions. Cluster development initiatives are an important new direction in economic policy, building on earlier efforts in macroeconomic stabilization, privatization, market opening, and reducing the costs of doing business.”*

The **FIRST STEP** in the study was to analyze the current industrial mix for each county and the region. The largest employers are retail, construction, lodging and food service, health care, administrative and support services, and agricultural. This analysis showed the following:

- In general, over 50 percent of the employment in the region falls in retail, construction, lodging and food, health care, and agriculture.
- Health care represents about 22 percent of total employment in Charlotte County compared to about 10 percent in Collier and Lee Counties.

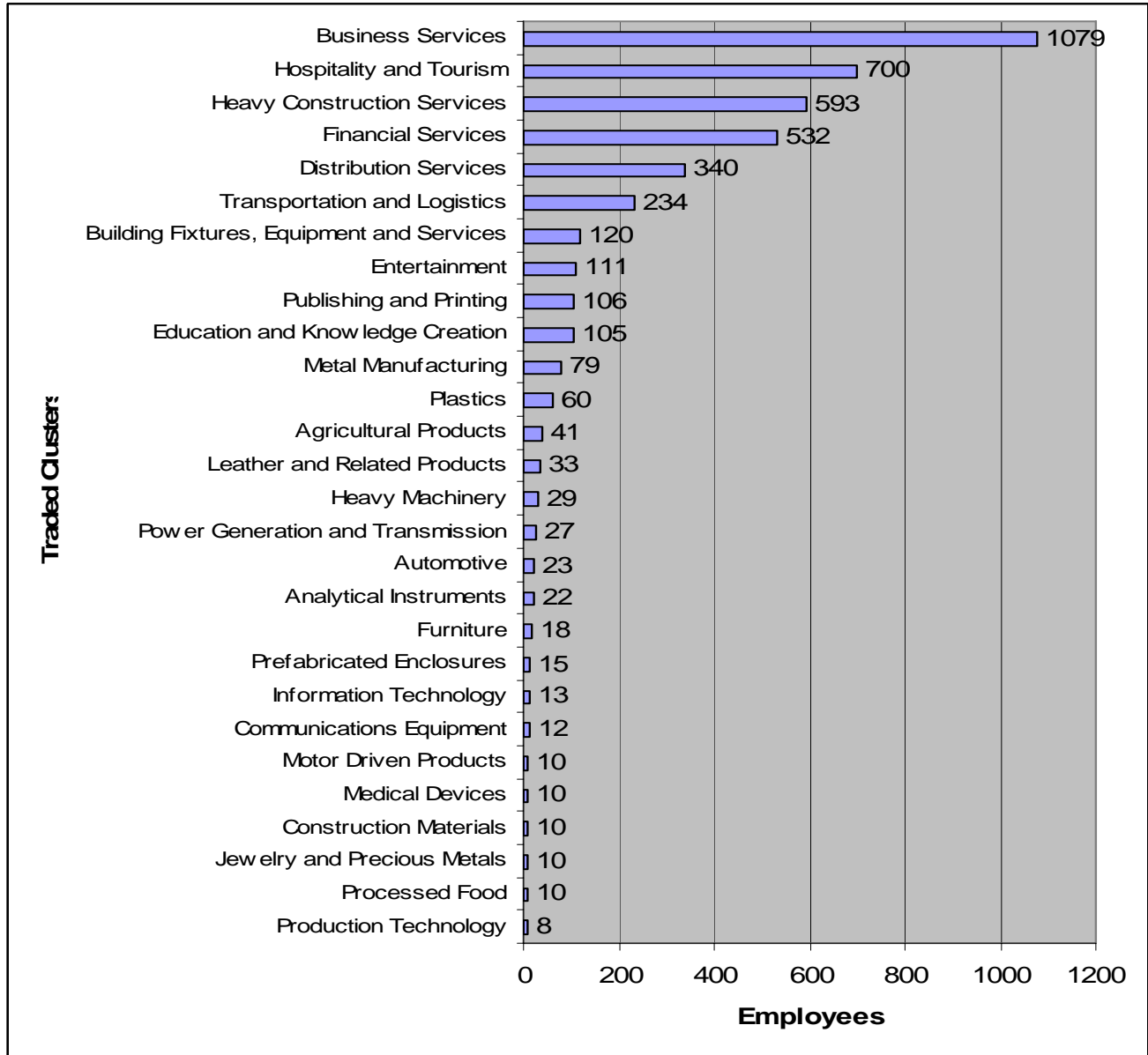
- The highest average annual pay levels were for management of companies, finance and insurance, utilities, mining, wholesale, information services, and health care.

The **SECOND STEP** in the study to use the cluster mapping project information available from Harvard University for each of the three counties. This step ranked traded clusters using 2003 employment. The industry clusters by county are ranked by Michael Porter’s cluster mapping project and illustrated in Figures ES-1, ES-2, and ES-3. The traded cluster definitions are defined nationally so the table shows the employment by industry cluster even if there is general agreement that local economy does not have sufficient companies and employment to be classified as a traded cluster. In general, Visitor Services and Entertainment have employment levels sufficiently above the national average to be classified as a traded cluster. Each of the other clusters ranked by the Porter project would have employment levels close to the percentage employed in that industry in the nation or below, classifying them as potential clusters. The top five traded and potential traded clusters based on employment were:

<b>Cluster</b>	<b>Collier</b>	<b>Lee</b>	<b>Charlotte</b>
Hospitality and Tourism	X	X	X
Business Services	X	X	X
Heavy Construction Services	X	X	X
Financial Services	X	X	X
Entertainment	X	X	
Distribution Services			X

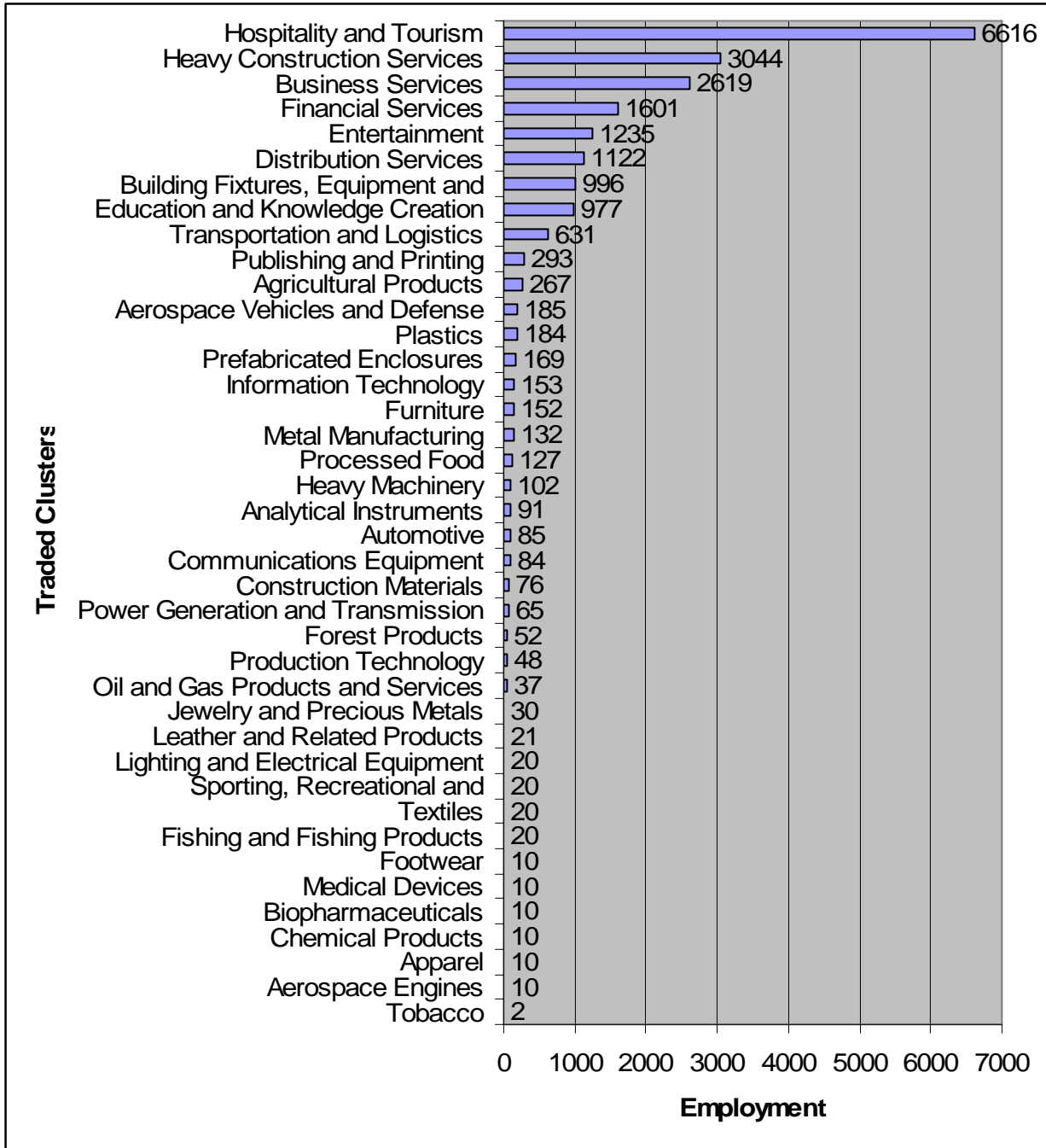
Heavy Construction Services includes engineering and architectural services which are generally used for larger construction projects. Distribution Services includes wholesale businesses that redistribute various products, materials, and parts. Distribution Services in Charlotte County has a fairly large percentage of employment in construction material wholesaling.

**Figure ES-1  
Charlotte County  
Traded Business Cluster Rankings**



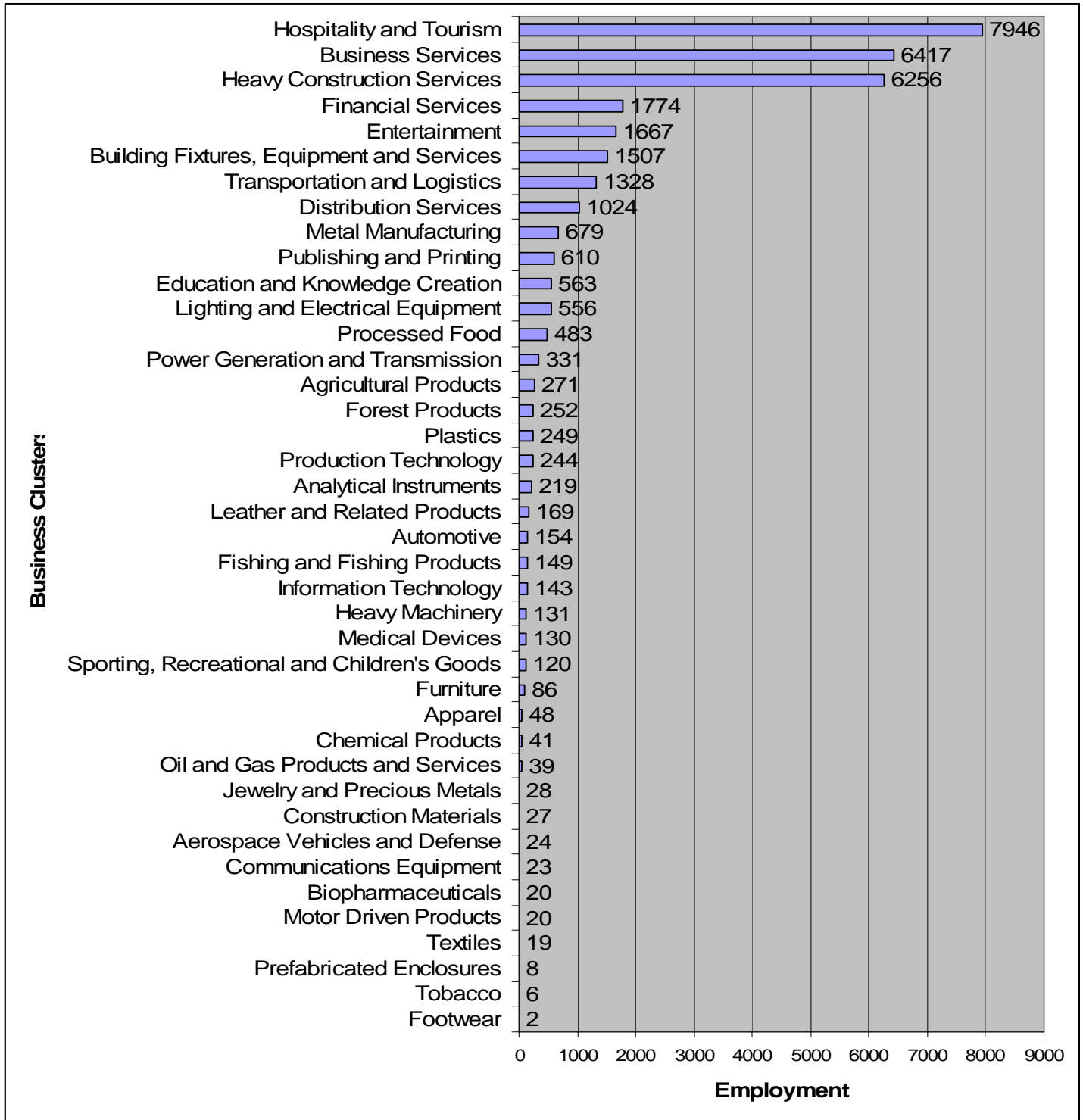
Source: Michael E. Porter Cluster Mapping Project, Harvard Business School, for Punta Gorda, Florida metropolitan area, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

## Figure ES-2 Collier County Traded Business Cluster Rankings



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Naples, Florida metropolitan area, 2003 data.  
[www.isc.hbs.edu](http://www.isc.hbs.edu)

## Figure ES-3 Lee County Traded Business Cluster Rankings



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Fort Myers-Cape Coral, Florida metropolitan area, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

The **THIRD STEP** was to perform additional research on ten selected traded clusters using the 2004 AWI data. This required developing cluster definitions by assigning NAICS codes to each cluster and was done using IMPLAN's input-output structural matrix, reviews of other studies such as the one done in San Diego, and the NAICS codes definitions. We often refer to potential clusters to indicate that additional growth in the number of firms and employment could make one of these cluster categories a true traded cluster for a county or region. The following ten clusters were chosen for further research:

- 1) Building Component Manufacturing and Services
- 2) Business Services
- 3) Distribution (Wholesale) Services
- 4) Entertainment
- 5) Financial Services
- 6) Medical Instruments, Applications, and Services
- 7) Printing and Publishing
- 8) Software and Computer Services
- 9) Transportation and Warehousing
- 10) Visitor Services (Hospitality and Tourism)

A location quotient is reported for each cluster and sub-cluster. The concept behind location quotient is that if the local economy has a higher percentage of employment in the local economy than in the nation, then it is likely to be exporting the product or service outside the local economy. The formula used to determine the location quotients (LQ) is:

$$\frac{(\text{Local employment in the cluster} / \text{Total local employment})}{(\text{National employment in the cluster} / \text{Total National employment})}$$

One of the minimum requirements for a cluster is to have a location quotient substantially above one. The following clusters had a 2004 location quotient greater than 1.3:

Cluster	Location Quotient		
	Charlotte	Collier	Lee
Visitor Services	1.4	3.0	1.7
Entertainment	1.8	3.3	2.0
Distribution Services (Part 1)	1.5		
Business Services		1.4	

Potential clusters with a location factor greater than one but below 1.3 were:

Cluster	Location Quotient		
	Charlotte	Collier	Lee
Printing and Publishing			1.2
Building Component Manufacturing and Services		1.1	
Financial Services		1.1	
Business Services			1.1

As expected there was varied pay levels across the counties and the clusters. The top pay levels by county and cluster were:

Cluster	Average Annual Pay Level		
	Charlotte	Collier	Lee
Medical Instruments, Appliances and Supplies	-	\$65,000	\$48,000
Financial Services	\$51,000	\$54,000	\$47,000
Software and Computing Services	\$46,000	\$57,000	\$51,000
Distribution Services (Part 1)	\$37,000	\$53,000	\$47,000
Printing and Publishing	-	\$38,000	\$43,000

Tables ES 1 through ES-3 on the following page shows ranked 2004 average annual pay levels by each county and cluster.

**Table ES-1**  
**Charlotte County Clusters Ranked by 2004 Average Annual Pay**

<b>Charlotte County Cluster Data</b>	<b>2001 Location Quotient</b>	<b>2004 Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Pay</b>
Financial Services	0.71	0.81	637	\$51,243
Software and Computer Services	0.18	0.20	59	\$45,671
Distribution Services Part 1	-	1.49	516	\$37,387
Distribution Services Part 2	0.22	0.22	62	\$34,003
Building Component Manufacturing and Services	0.91	0.90	489	\$32,601
Business Services	0.94	0.98	2,342	\$32,393
Visitor Services	1.72	1.43	1,598	\$18,874
Entertainment	2.12	1.75	728	\$18,034
Printing and Publishing	0.05	0.09	12	\$18,006
Transportation and Warehousing	0.03	0.03	5	ND
Medical Instruments, Appliances and Supplies	-	-	-	-

**Table ES-2  
Collier County Clusters Ranked by 2004 Average Annual Pay**

<b>Collier County Cluster Data</b>	<b>2001 Location Quotient</b>	<b>2004 Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Pay</b>
Medical Instruments, Appliances and Supplies		0.21	18	\$65,121
Software and Computer Services	0.20	0.46	322	\$56,874
Financial Services	1.10	1.11	2,470	\$53,669
Distribution Services Part 1	0.63	0.59	1,351	\$52,714
Distribution Services Part 2	0.60	0.64	747	\$46,735
Transportation and Warehousing	0.51	0.97	93	\$41,892
Building Component Manufacturing and Services	1.16	1.09	2,499	\$40,169
Printing and Publishing	0.82	0.61	398	\$38,121
Business Services	1.25	1.44	13,176	\$36,010
Entertainment	3.37	3.34	5,629	\$32,964
Visitor Services	3.04	2.99	10,249	\$29,528

**Table ES-3  
Lee County Clusters Ranked by 2004 Average Annual Pay**

<b>Lee County Cluster Data</b>	<b>2001 Location Quotient</b>	<b>2004 Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Pay</b>
Software and Computer Services	0.23	0.23	434	\$50,787
Financial Services	0.79	0.80	3,810	\$48,839
Medical Instruments, Appliances and Supplies		0.36	93	\$47,525
Distribution Services Part 1	0.85	0.93	3,690	\$46,685
Distribution Services Part 2	0.80	0.81	2,141	\$44,523
Printing and Publishing	0.77	1.15	1,034	\$42,579
Building Component Manufacturing and Services	1.07	0.98	3,635	\$36,043
Business Services	1.19	1.13	17,509	\$35,521
Transportation and Warehousing	1.32	0.89	412	\$32,277
Entertainment	1.88	1.97	6,506	\$26,733
Visitor Services	1.59	1.73	10,488	\$25,190

Growing or recruiting higher pay levels that diversify the community's industrial base is one of the goals of economic development organizations. This study has helped define the existing clusters and their pay levels but has not explored the reasons why higher paying industrial clusters have not located in our region. Additional research on the location factors, strengths, barriers, infrastructure needs, weaknesses, and opportunities will need to be undertaken to address the cluster development questions.

## 1.0 INTRODUCTION

The Regional Economic Research Institute of Florida Gulf Coast University has developed a regional traded industry cluster analysis during the spring and summer of 2006 in support of the Southwest Florida Economic Development Offices. The study uses data from Michael Porter's Cluster Mapping Project, San Diego's Regional Employment Clusters Studies, Florida's Agency for Workforce Innovation, IMPLAN's input/output model, and the US Bureau of Labor Statistics to examine the industry clusters present in the Southwest Florida Region.

Michael Porter of the Harvard Business School and the *Institute for Strategy and Competitiveness* has studied industry clusters and competition for a number of years and is a well known expert in the field of cluster analysis. Porter's website, [www.isc.hbs.edu](http://www.isc.hbs.edu) provides a good overview of industry clusters:

- *“Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region.”*
- *“Clusters arise because they increase the productivity with which companies compete.”*
- *“The development and upgrading of clusters is an important agenda for governments, companies, and other institutions. Cluster development initiatives are an important new direction in economic policy, building on earlier efforts in macroeconomic stabilization, privatization, market opening, and reducing the costs of doing business.”*

Industry cluster analysis adds another dimension to company analysis by examining not only at traditional industry strengths, weaknesses, opportunities, and threats but also at the importance of various industries and institutions to each other.

Economic development offices in Southwest Florida and throughout the country have been working to improve the diversity of their region and increase wealth in the region by supporting higher paying occupations and industries. In pursuit of better identifying higher paying occupations and industries within their region several counties have used Industry cluster analysis. For example, San Diego formed industry cluster business groups that have allowed various governmental and private groups to support local and regional changes to improve the overall business environment for the community and to be more effective in recruiting and growing firms that support the traded industry clusters.

The study includes the following components:

1. Industry employment by two-digit North American Industry Classification System (NAICS) Codes: The NAICS coding system provides an overview of the existing industries without grouping them into business clusters. It is clear from the rankings that the regional employment is dominated by retail, construction, tourism, health care, and agriculture industries.
2. Porter's Cluster Mapping: Michael Porter's Cluster Mapping Project has assembled a detailed picture of the location and performance of industries in the United States, with a special focus on the linkages or externalities across industries that give rise to clusters. This provides a good starting point for the cluster analysis since the Porter's Cluster Mapping Project provides

a ranking of 40 traded industry clusters at the county level including Charlotte, Collier, and Lee Counties.

3. Traded Cluster Definitions and 2004 AWI data: This study takes the initial Porter industry cluster analysis further by using the IMPLAN model input- output matrix, San Diego's traded industry cluster definitions, the 2004 Agency for Workforce Innovation employment and average annual pay, and NAICS codes to define 10 industry clusters for further study and analysis. These definitions are subject to change as additional information concerning industry clusters becomes available. The amount of information available for defining clusters varied. Some cluster definitions such as Distribution (Wholesale) Services have initially been set very broadly and includes all the existing 4-digit NAICS codes. This analysis also lends itself to a "targeting" analysis to allow various organizations to review their existing recruitment strategies based on the latest summary and detailed information on the selected cluster groups.

## **2.0 METHODOLOGY**

The first step of the study was to obtain data on employment by NAICS code for Charlotte, Collier, and Lee Counties from Florida's Agency for Workforce Innovation (AWI). The data used for the study was for 2004 and charts were prepared that ranked the industries by employment level for each of the counties. A ranking of the industries by average annual pay is also provided based on the AWI data collections.

Following the initial step of obtaining data and charting employment and average annual pay levels for the three counties, the University subscribed to Harvard University's Cluster Mapping Project in order to obtain their ranking of industry clusters by county. The Cluster Mapping Project defined 40 industry traded clusters and provided employment data for 2003. Employment by industry cluster was obtained for each of the counties included in this study. This provides a starting point for additional industry cluster analysis.

The last step in the project and the major part of the work for this study was reviewing, revising and defining industry cluster definitions and analysis. Based on the previous work for this study including the cluster rankings, the industry review, and a ranking of the average annual pay levels, 10 clusters were defined and analyzed using the latest employment and average annual pay data. The criteria for selection of eight of these industry clusters was above average annual pay and existing employment in at least one of the three counties under study. Visitor Services and Entertainment were also analyzed since they had very high location quotients which indicated that these clusters would have sufficient employment to be classified as traded clusters. The AWI data was for 2001 and 2004 so that we could analyze the change in Location quotients over only three years. The study

was limited to the 2001 to 2004 change since 2001 was the first year for the new NAICS definitions and 2005 annual data was not available.

IMPLAN's national input-output matrix was used to define Business Services, Financial Services, Software and Computer Services, and Publishing and Printing. Entertainment, Financial Services, Visitor Services, Software and Computer services, and Business Services were also defined by a San Diego Regional Study (August 2001). This study reinforced the definitions obtained using IMPLAN and were used to help define Visitor Services, and Entertainment. In addition, Building Component Manufacturing and Services and Medical Instruments, Applications and Services were defined by reviewing the AWI data, and using the NAICS definitions to obtain an initial traded cluster definitions for further study.

## 3.0 STUDY FINDINGS

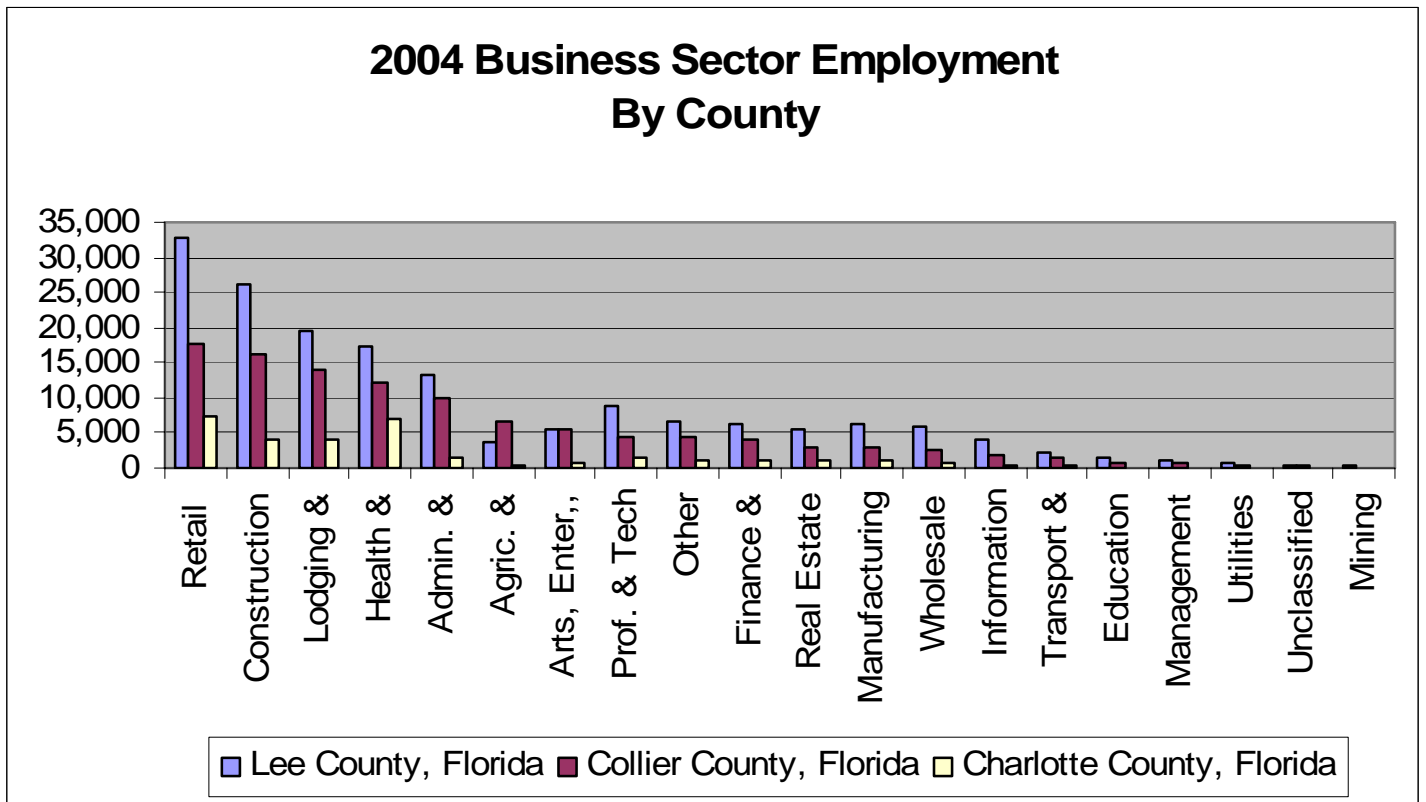
The study findings are divided into three distinct but interrelated sections.

- Industry Analysis
- Industrial Cluster Review
- Analysis of selected clusters by county (2004 AWI data) which includes location quotients by industry cluster and sub-cluster for 2001 and 2004

### 3.1 Industry Analysis by County

The industry or sector employment for each county is shown in Figure 1. This table shows the size of the employment by county and the different levels of employment by business sector.

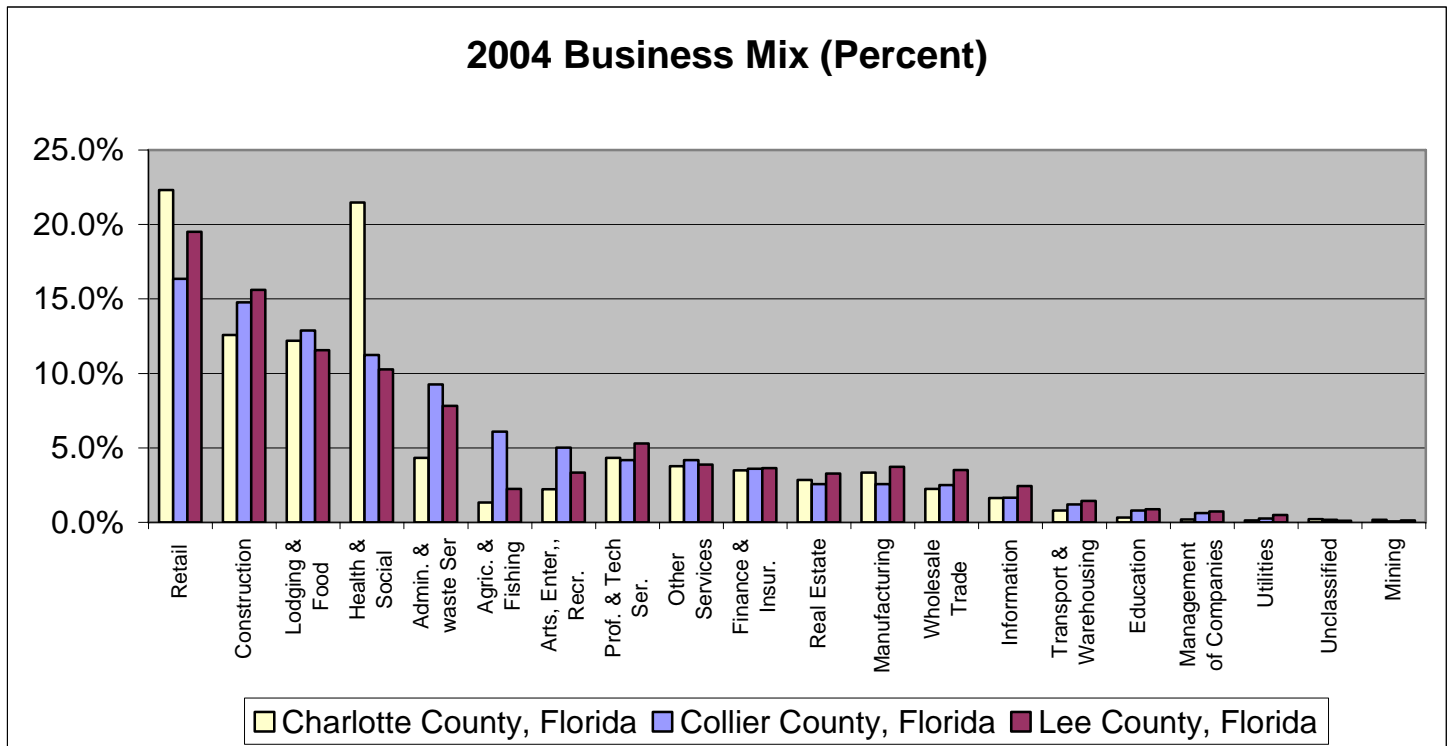
**Figure 1**



Source: Agency for Workforce Innovation, 2-digit NAICS, 2004 annual data

The existing mix of businesses are ranked by the percent of total employment and defined by the 2-digit NAICS Codes is shown in Figure 2 for Charlotte, Collier, and Lee Counties.

**Figure 2**

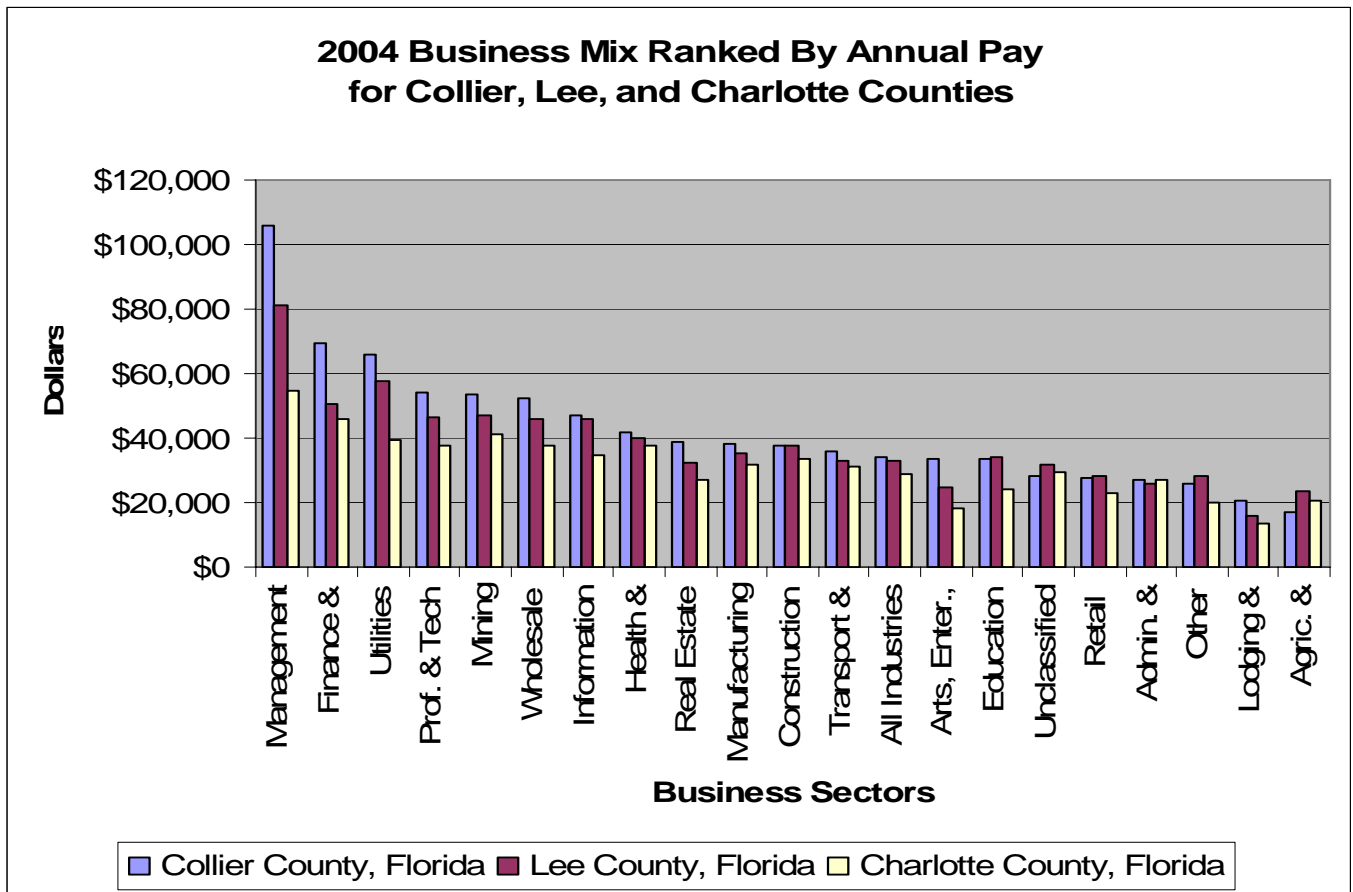


Source: Agency for Workforce Innovation, 2004 annual data

The primary industries as defined by 2-digit NAICS codes are Retail, Construction, Lodging and Food Service, Health and Social Assistance, Agriculture and Fishing, Arts, Entertainment, and Recreation, and Professional and Technical Services make up the bulk of employment. The remaining business sectors have less than five percent of the employment in any of the southwest Florida coastal counties. These business sectors form the basis for looking at business clusters. The study uses the NAICS codes at a more detailed level to define the industry clusters. The data on employment and the average annual pay for each NAICS code were obtained from the United States Department of Labor’s Bureau of Labor Statistics and the Florida’s Agency for Workforce Innovation.

An important objective in economic development is to create wealth by recruiting and assisting the growth of better-paying jobs in the community. The economic development organizations will look to diversify the economy and bring in higher paying business sectors and clusters. Part of the preliminary work for this study was to obtain annual pay levels by major business sector. Each of the business sector's (two-digit NAICS) average annual pay for 2004 is shown in Figure 3. Employers in Collier and somewhat in Lee Counties are expected to pay higher annual pay levels due to low unemployment levels and higher costs of living compared to Charlotte County.

**Figure 3**



Source: BLS, QCEW, 2-digit NAICS, 2004 annual data

Management of companies and enterprises had the highest average annual pay ranging from about \$55,000 in Charlotte County to \$105,000 in Collier County. Finance and insurance was the second highest followed by utilities, professional and technical services, mining, wholesale trade, information services, health care, real estate, manufacturing, and construction. The average annual pay across all industries varied by county but was generally around \$30,000 to \$35,000. Some of the lowest average annual pay industries included lodging, food, and agriculture, with pay levels of \$15,000 to \$24,000 per year.

### **3.2 Michael Porter's Cluster Mapping Project Rankings**

Michael Porter initiated a Cluster Mapping Project to gather and provide information about various regions of the nation and to share information about business clusters. Table 1 provides a list of traded business clusters identified by his project. These are defined as groups of businesses and other institutions that are interrelated and export products or services outside the local economy.

# Table 1

## Traded Business Clusters

### Defined by Harvard's Cluster Mapping Project

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Aerospace Engines</li> <li>2. Aerospace Vehicles and Defense</li> <li>3. Agricultural Products</li> <li>4. Analytical Instruments</li> <li>5. Apparel</li> <li>6. Biopharmaceuticals</li> <li>7. Building Fixtures, Equipment and Services</li> <li>8. Business Services</li> <li>9. Chemical Services</li> <li>10. Communications Equipment</li> <li>11. Construction Materials</li> <li>12. Distribution Services</li> <li>13. Education and Knowledge Creation</li> <li>14. Entertainment</li> <li>15. Financial Services</li> <li>16. Fishing and Fishing Products</li> <li>17. Footwear</li> <li>18. Forest Products</li> <li>19. Furniture</li> <li>20. Heavy Construction Services</li> </ol> | <ol style="list-style-type: none"> <li>21. Heavy Machinery</li> <li>22. Hospitality and Tourism</li> <li>23. Information Technology</li> <li>24. Jewelry and Precious Metals</li> <li>25. Leather and Related Products</li> <li>26. Lighting and Electrical Equipment</li> <li>27. Medical Devices</li> <li>28. Metal Manufacturing</li> <li>29. Motor Driven Products</li> <li>30. Oil and Gas Products and Services</li> <li>31. Plastics</li> <li>32. Power Generation and Transmission</li> <li>33. Prefabricated Enclosures</li> <li>34. Processed Food</li> <li>35. Production Technology</li> <li>36. Publishing and Printing</li> <li>37. Sporting, Recreational and Children's Goods</li> <li>38. Textiles</li> <li>39. Tobacco</li> <li>40. Transportation and Logistics</li> </ol> |
|--|---|

Source: Michael E. Porter Cluster Mapping Project, Harvard Business, [www.isc.hbs.edu](http://www.isc.hbs.edu)

Porter also defines local business clusters that primarily serve the local community. These are listed in Table 2 below. The cluster groupings are generalizations and specific subgroups or sectors may produce products or services that also serve customers beyond the local region.

## **Table 2**

### **Local Business Clusters**

#### **Defined by Harvard's Cluster Mapping Project**

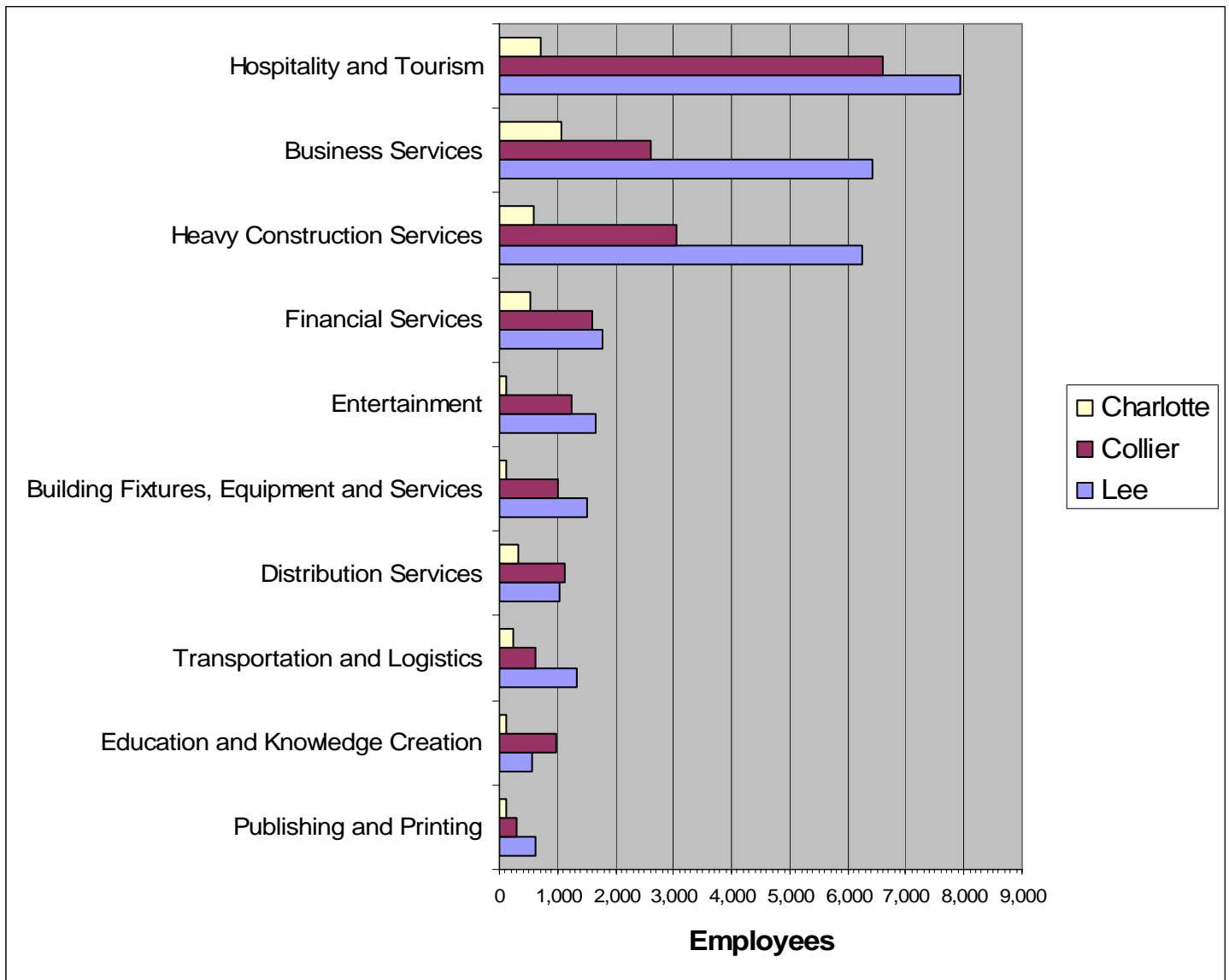
1. Commercial Services
2. Community and Civic Organizations
3. Education and Training
4. Financial Services
5. Food and Beverage Processing and Distributions
6. Health Services
7. Hospitality Establishments
8. Household Goods and Services
9. Industrial Products and Services
10. Logistical Services
11. Motor Vehicle Products and Services
12. Personal Services (Non-Medical)
13. Real Estate, Construction, and Development
14. Retail Clothing and Accessories
- 15. Utilities**

Source: Michael E. Porter Cluster Mapping Project, Harvard Business, [www.isc.hbs.edu](http://www.isc.hbs.edu)

The following graphs provide Michael Porter's employment ranking of traded clusters for the Southwest Florida Region of Charlotte, Collier, and Lee Counties. Hospitality and Tourism, Business Services, Heavy Construction Services, Financial Services, and Entertainment make up the top five traded business clusters in the region. The rankings are based on a national definition of business clusters and even though the region may have employment within the definition of a traded business cluster that does not mean that the region has a higher concentration of employment relative to the nation. Certainly by most standards, the region would have a higher concentration of employment in Hospitality and Tourism, Heavy Construction Services, Entertainment and most likely

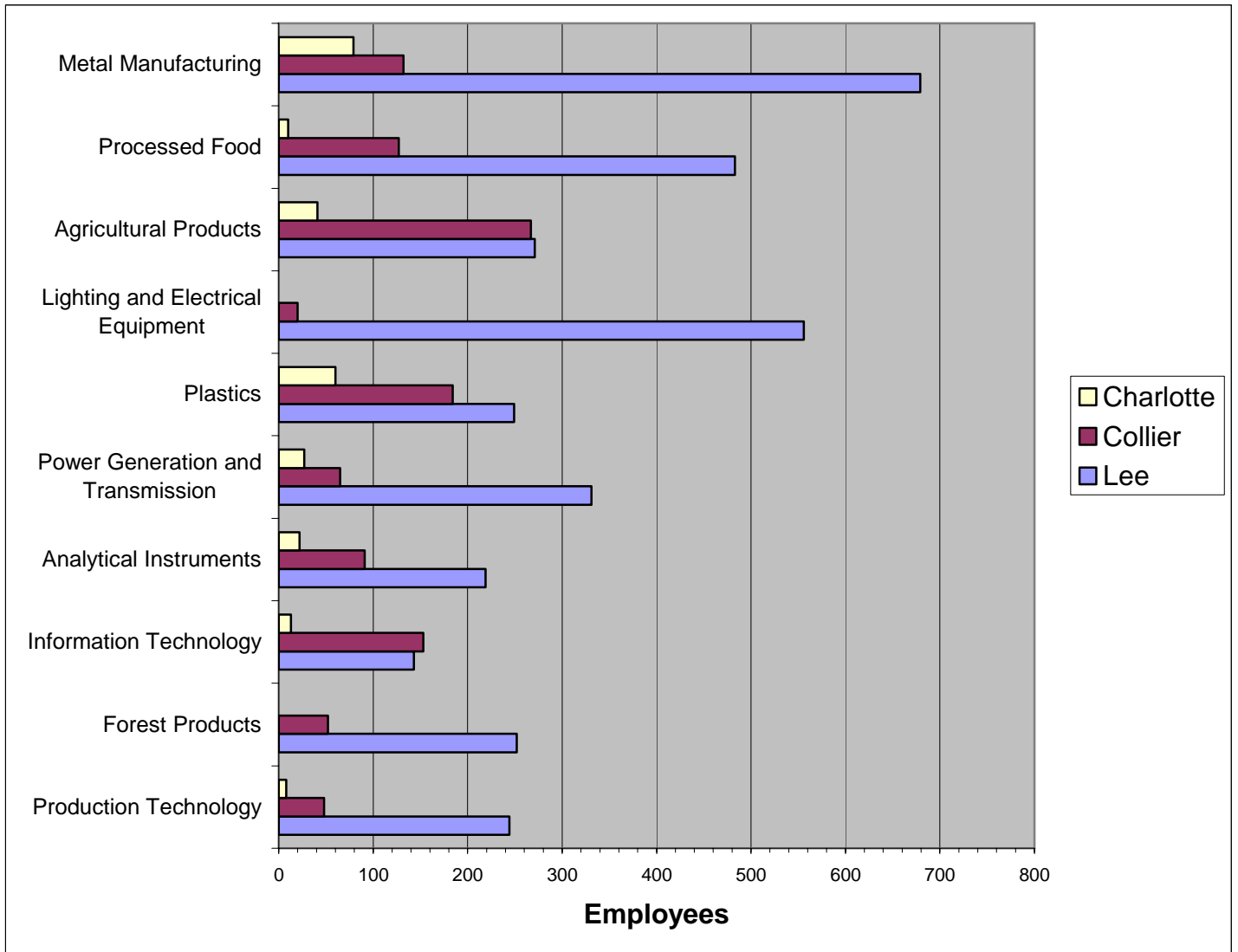
Business Services and Financial Services. The remaining clusters are generally not of sufficient size and scope to be considered a traded business cluster at the present time but may offer opportunities for creating an environment to attract and grow potential traded clusters. Figures 4, 5, 6, and 7 provide a ranking of existing employment by the Porter defined traded business clusters.

**Figure 4  
Traded Business Cluster Rankings  
Top 10 by Region**



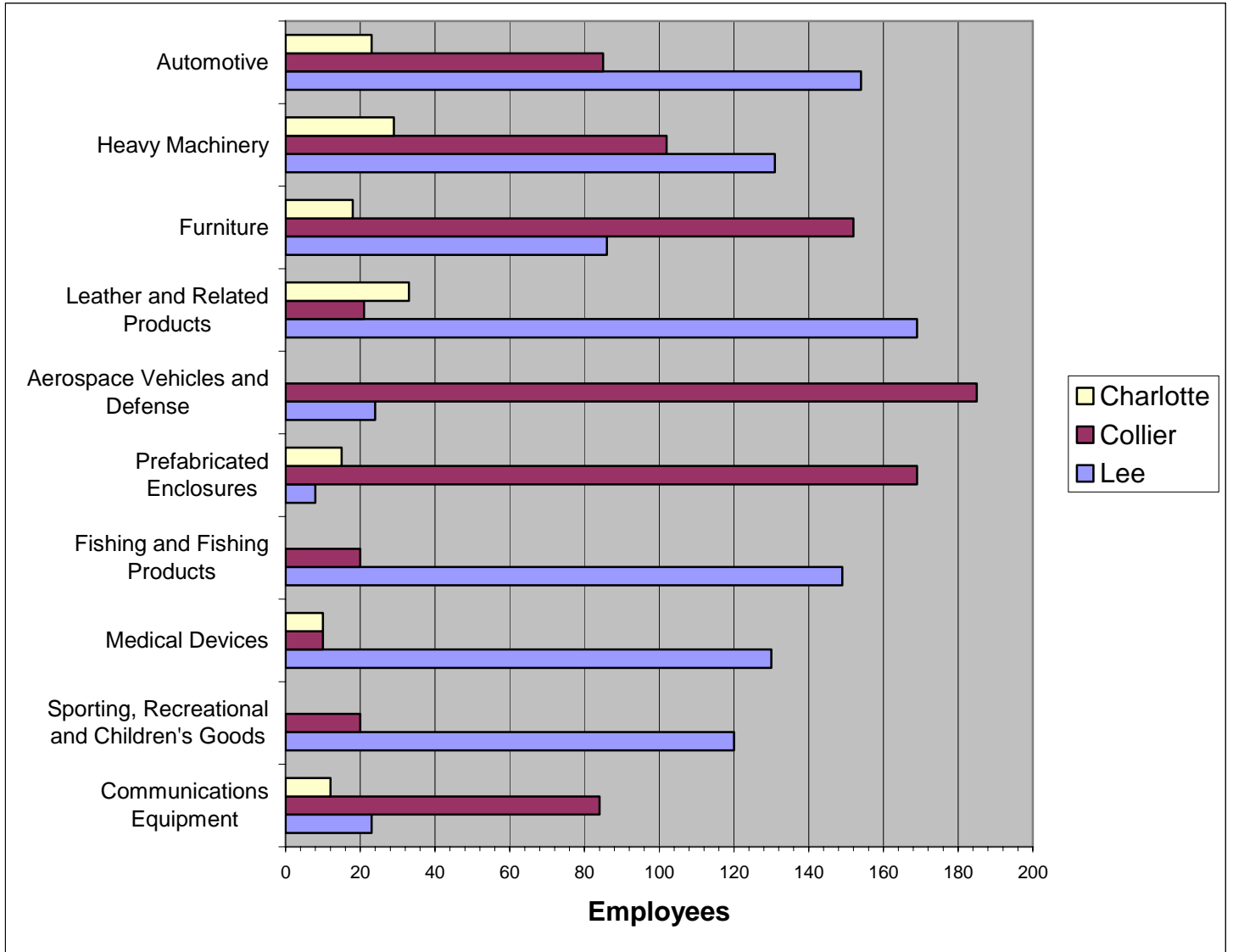
Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Charlotte, Collier and Lee Counties, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

**Figure 5  
Traded Business Cluster Rankings  
11 to 20 by Region**



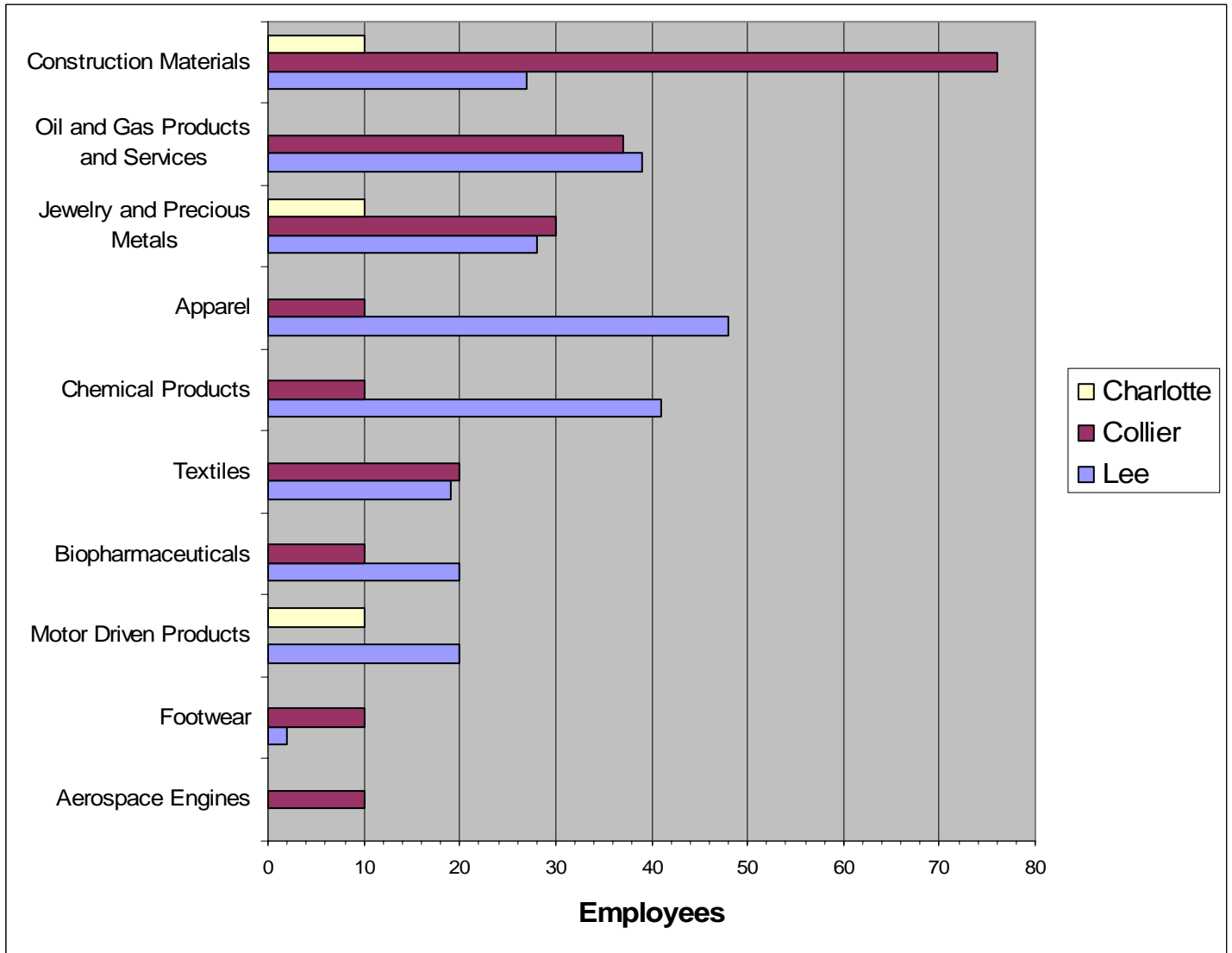
Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Charlotte, Collier and Lee Counties, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

**Figure 6**  
**Traded Business Cluster Rankings**  
**21 to 30 by Region**



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Charlotte, Collier and Lee Counties, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

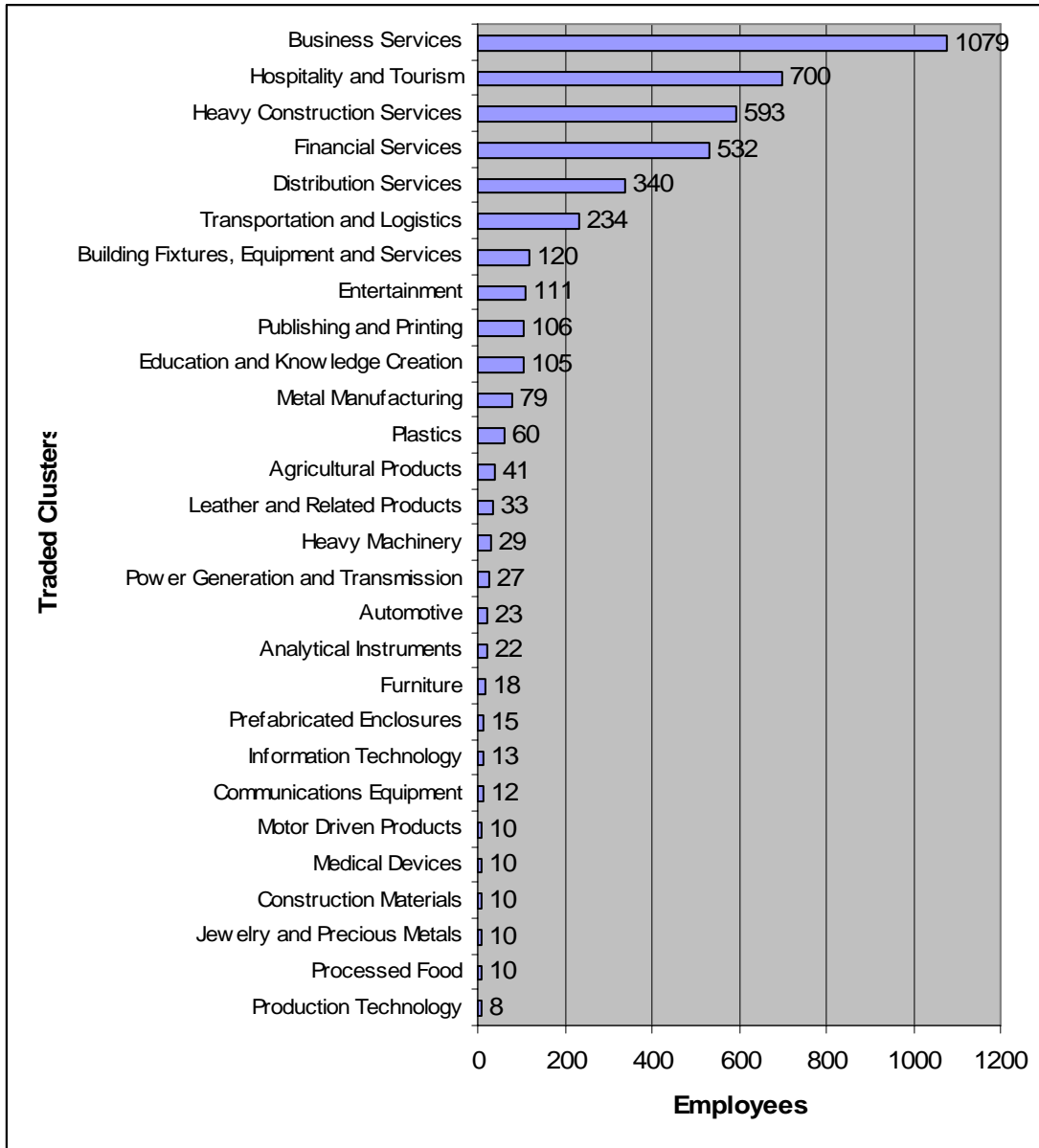
**Figure 7  
Traded Business Cluster Rankings  
31 to 40 by Region**



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Charlotte, Collier and Lee Counties, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

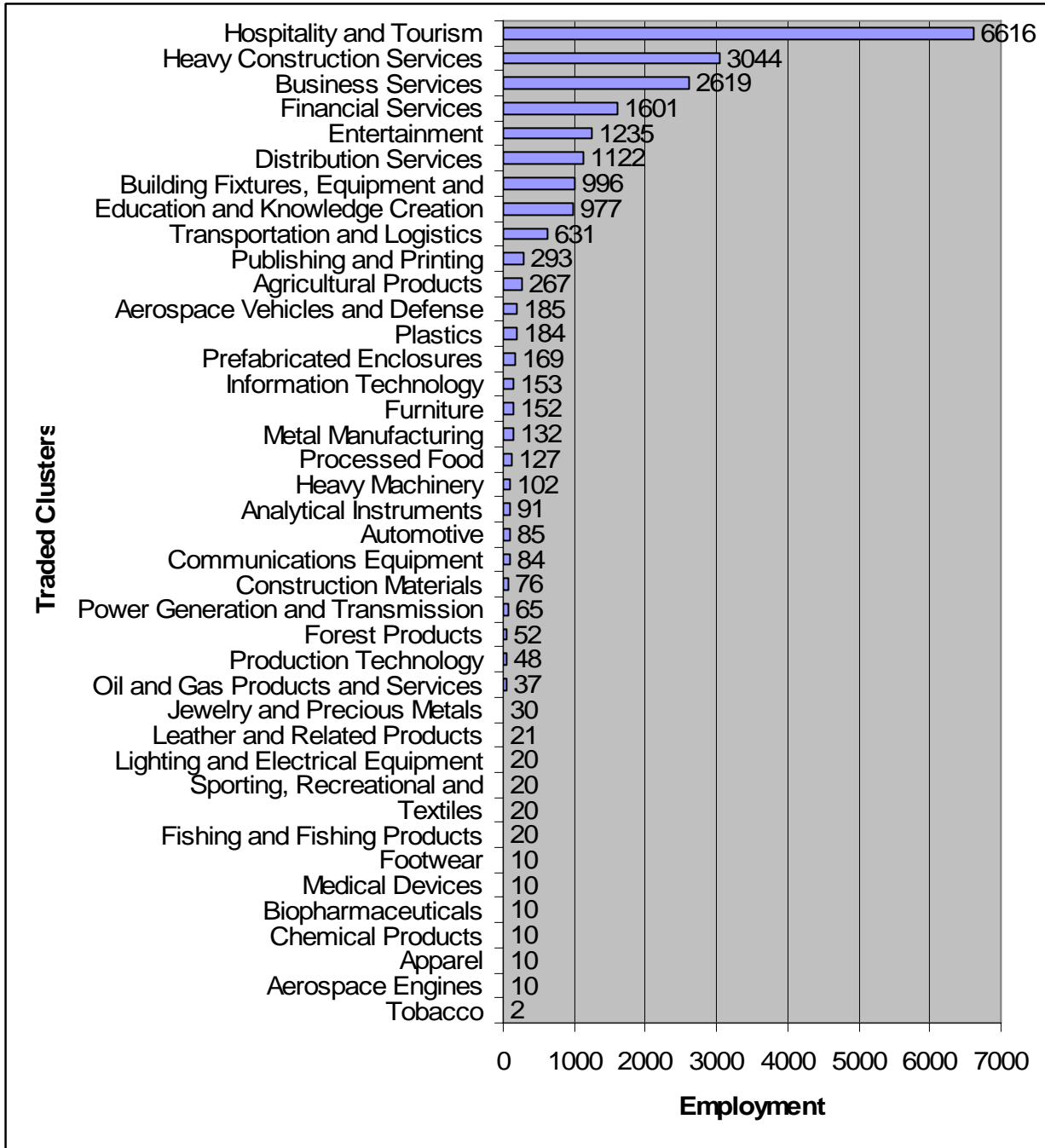
In addition to looking at the Southwest Florida Coastal Region, Figures 8, 9, and 10 provide the individual county rankings based on employment in each of the Porter traded business clusters. Each county has a slightly different ranking but overall, each county has a high ranking for Hospitality and Tourism, Business Services, Heavy Construction Services, and Financial services.

**Figure 8  
Charlotte County  
Traded Business Cluster Rankings**



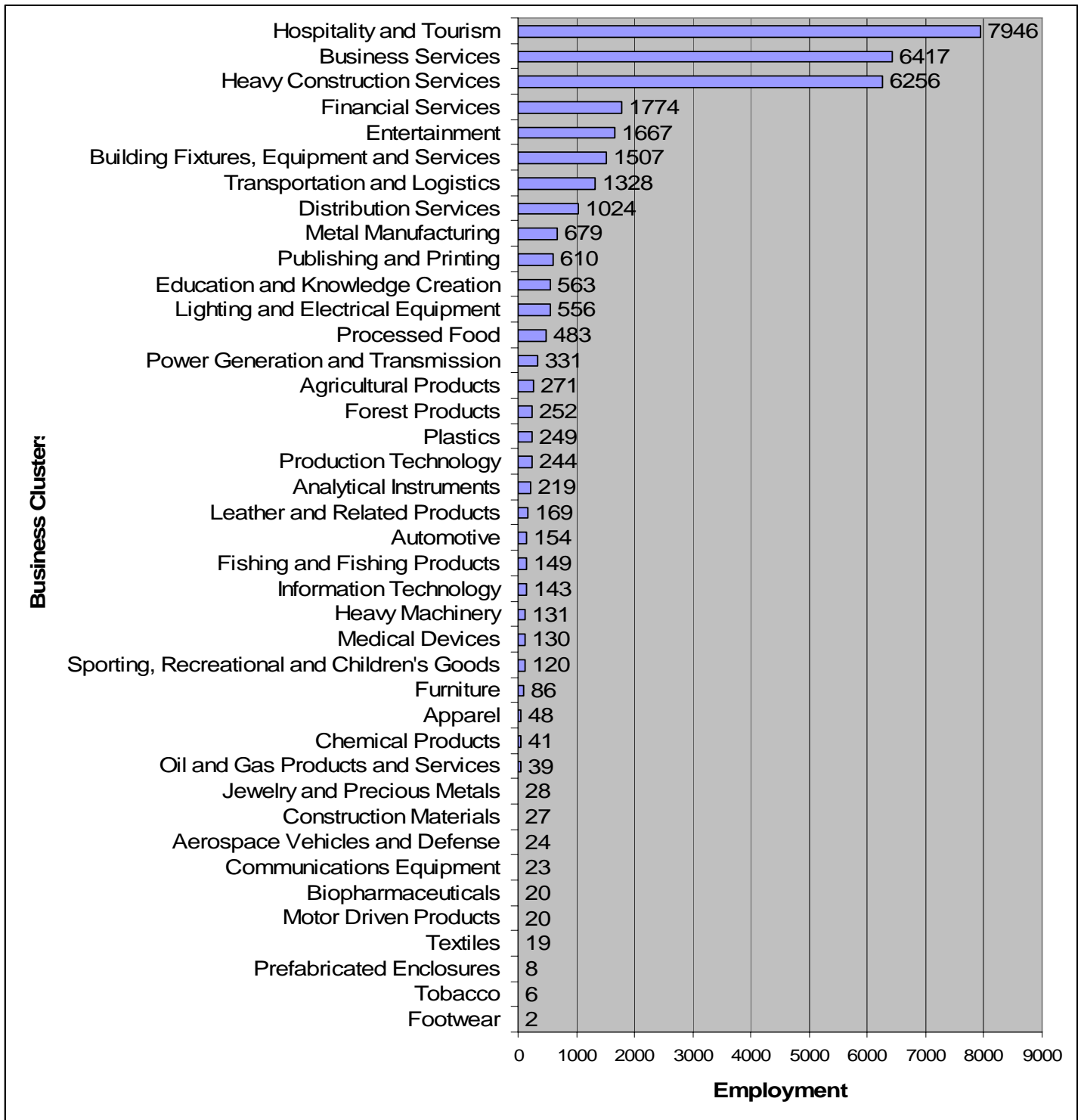
Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Punta Gorda, Florida metropolitan area, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

**Figure 9  
Collier County  
Traded Business Cluster Rankings**



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Naples, Florida metropolitan area, 2003 data.  
[www.isc.hbs.edu](http://www.isc.hbs.edu)

**Figure 10**  
**Lee County**  
**Traded Business Cluster Rankings**



Source: Michael E. Porter Cluster Mapping Project, Harvard Business School for Fort Myers-Cape Coral, Florida metropolitan area, 2003 data, [www.isc.hbs.edu](http://www.isc.hbs.edu)

### 3.3 Selected Business Clusters for Additional Study using 2004 AWI County Data

Based on the initial screening of Porter's business clusters, business sectors, and a review of the literature, it was decided that additional research should focus on the following ten clusters:

1. Building Component Manufacturing and Services
2. Business Services
3. Distribution (Wholesale) Services
4. Entertainment
5. Financial Services
6. Medical Instruments, Applications, and Services
7. Printing and Publishing
8. Software and Computer Services
9. Transportation and Warehousing
10. Visitor Services (Hospitality and Tourism)

It is important to note that Education and Research was also considered a very important cluster for further study of the three counties. This report does not discuss this potential cluster or its importance to the infrastructure of the economy due to limited data availability and disclosure limitations. An initial analysis of Heavy Construction was also completed but this cluster was not selected as one of top 10 clusters for further analysis.

The purpose of this section is to provide more detailed information by county and region for each of the clusters using the AWI database. Key to this analysis is the determination of the location quotient which is reported for each cluster and sub-cluster. Location quotients (LQ) are defined as:

$$\frac{(\text{Local employment in the cluster} / \text{Total local employment})}{(\text{National employment in the cluster} / \text{Total National employment})}$$

The concept behind location quotient is that if an industry or cluster has a higher percentage of employment in the local economy than the nation, it is likely to be exporting the product or service outside the local economy.

In pursuit of conducting this phase of the study, the university and the economic development organizations in Charlotte, Collier, and Lee have signed agreements that allow them to use the confidential AWI firm data for in-house studies but this information cannot be disclosed in this public document. Therefore it is important that the reader of the study and this section understand the varied notes and items used the graphic and tabular presentation of the data.

- Non Disclosure: An ND or “non-disclosure” indicates that the number of firms is less than three or that one of the firms that reported made up 80 percent of the response so the information can not be disclosed. Thus care should be used when encountering an ND since the numbers can be significant although in most cases the numbers are generally small. In addition, NDs can lead to a missing data bias and is more common in the regional tables since one county may have data that cannot be released. The nondisclosure is identified in each county’s table throughout this section.
- Regional Values: The regional values provided in the tables are the totals or averages of the information that can be released publicly from the counties. This could lead to an estimate that understates employment and the average annual pay could be either higher or lower than a value calculated with complete county information.
- No Company: An NC in a table indicates that there were no companies for that particular NAICS code.

Distribution Services was studied as two groups initially to gain a better understanding of the potential cluster and since the number of sub-clusters was very large.

The analysis of the section provides detailed information about each industry cluster selected including average annual pay levels. In this section the study will show:

- A list of business sectors or sub-clusters that were used to define the cluster including the NAICS codes
- 2001 employment location quotient by sub-cluster and cluster
- 2004 employment location quotient by sub-cluster and cluster
- Change in the employment location quotient from 2001 to 2004 by sub-cluster and cluster
- 2004 employment by sub-cluster and cluster
- 2004 average annual wage by sub-cluster and cluster.

### **3.31 Industry Cluster Ranking by Average Annual Pay**

Economic Development Offices generally place a high value on activities that promote a diversified economy and higher paying-jobs for the community. Table 11 shows the clusters or potential clusters ranked by average annual wage or pay level for Charlotte County. Financial services had the highest average annual pay at about \$51,000. This was followed by Software and Computer Services at over \$46,000, Distribution Services around \$35,000, Building Component Manufacturing and Services around \$33,000, Business Services at about \$32,000, Visitor Services at around \$19,000, and entertainment around \$18,000.

There were also very low levels of employment in Charlotte County for Printing and Publishing, Transportation and Warehousing, and Medical Instruments, Appliances, and Supplies. Three clusters had high location quotients indicating that Charlotte County has three export or traded

clusters among the cluster groups being studied. These include Visitor Services with a 2004 LQ of 1.43, Entertainment with a 2004 LQ of 1.75, and Distribution Services (Part 1) with a 2004 LQ of 1.49. A detailed table for each cluster or potential cluster by county and region is provided later in this section of the paper.

These tables provide the NAICS codes and sub-cluster information for each county and the region. Again, care should be taken to review the detailed cluster and sub-cluster tables to understand the potential for missing data bias due to the nondisclosure rules.

**Table 11**  
**Charlotte County Clusters Ranked by 2004 Average Annual Pay**

<b>Charlotte County Cluster Data</b>	<b>2001 Location Quotient</b>	<b>2004 Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Pay</b>
Financial Services	0.71	0.81	637	\$51,243
Software and Computer Services	0.18	0.20	59	\$45,671
Distribution Services Part 1	-	1.49	516	\$37,387
Distribution Services Part 2	0.22	0.22	62	\$34,003
Building Component Manufacturing and Services	0.91	0.90	489	\$32,601
Business Services	0.94	0.98	2,342	\$32,393
Visitor Services	1.72	1.43	1,598	\$18,874
Entertainment	2.12	1.75	728	\$18,034
Printing and Publishing	0.05	0.09	12	\$18,006
Transportation and Warehousing	0.03	0.03	5	ND
Medical Instruments, Appliances and Supplies	-	-	-	-

The ten additional clusters targeted for further study in Collier County are ranked by average annual pay or wage level in Table 12. Medical Instruments, Appliance and Supplies had an average annual pay level of about \$65,000, Software and Computer Services paid about \$57,000, Financial Services paid about \$54,000, Distribution Services was between \$46,000 and \$53,000, Transportation and Warehousing was about \$42,000, and the remaining clusters had an average annual pay of between \$30,000 and \$40,000.

Only Financial Services, Building component Manufacturing and Services, Business Services, Entertainment, and Visitor Services had a 2004 location quotient above one. Entertainment, Visitor Services, and Business Services had a 2004 location quotient above 1.4 indicating that employment in these clusters is significantly above the average percentage employment at the national level.

**Table 12**  
**Collier County Clusters Ranked by 2004 Average Annual Pay**

<b>Collier County Cluster Data</b>	<b>2001 Location Quotient</b>	<b>2004 Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Pay</b>
Medical Instruments, Appliances and Supplies		0.21	18	\$65,121
Software and Computer Services	0.20	0.46	322	\$56,874
Financial Services	1.10	1.11	2,470	\$53,669
Distribution Services Part 1	0.63	0.59	1,351	\$52,714
Distribution Services Part 2	0.60	0.64	747	\$46,735
Transportation and Warehousing	0.51	0.97	93	\$41,892
Building Component Manufacturing and Services	1.16	1.09	2,499	\$40,169
Printing and Publishing	0.82	0.61	398	\$38,121
Business Services	1.25	1.44	13,176	\$36,010
Entertainment	3.37	3.34	5,629	\$32,964
Visitor Services	3.04	2.99	10,249	\$29,528

Table 13 shows the additional clusters or potential clusters ranked by average annual pay for Lee County. Software and Computer Services had the highest average annual pay or wage level at about \$51,000. This was followed by Financial Services at about \$49,000, Medical Instruments, Appliances, and Supplies at about \$48,000, Distribution Services about \$45,000 to \$47,000, Printing and Publishing around \$43,000, the remaining clusters had average annual pay levels from \$25,000 to \$36,000 and are provided in Table 13. Visitor Services and Entertainment had 2004 location quotients of above 1.7 indicating that these clusters represent an export cluster for the county. Printing and Publishing and Business Services were also above one at 1.15 and 1.13. This is still fairly close to one indicating that these potential clusters are not concentrated in the county and generally would not be classified as an export trade cluster at this time.

**Table 13**  
**Lee County Clusters Ranked by 2004 Average Annual Pay**

Lee County Cluster Data	2001 Location Quotient	2004 Location Quotient	2004 Employment	2004 Average Annual Pay
Software and Computer Services	0.23	0.23	434	\$50,787
Financial Services	0.79	0.80	3,810	\$48,839
Medical Instruments, Appliances and Supplies	-	0.36	93	\$47,525
Distribution Services Part 1	0.85	0.93	3,690	\$46,685
Distribution Services Part 2	0.80	0.81	2,141	\$44,523
Printing and Publishing	0.77	1.15	1,034	\$42,579
Building Component Manufacturing and Services	1.07	0.98	3,635	\$36,043
Business Services	1.19	1.13	17,509	\$35,521
Transportation and Warehousing	1.32	0.89	412	\$32,277
Entertainment	1.88	1.97	6,506	\$26,733
Visitor Services	1.59	1.73	10,488	\$25,190

### **3.32 Building Component Manufacturing and Services Cluster**

Building Components include wood product manufacturing, concrete product manufacturing, fabricated metal products such as screen enclosures, machinery manufacturing to support construction, electrical equipment, cabinets, and other items that can be pre-manufactured for the building industry. Construction has been one of the top employers in the region. Sub-cluster definitions based on NAICS codes are provided in Table 14.

**Table 14**  
**Building Component Manufacturing and Services Cluster**

<b>Number</b>	<b>NAICS Codes</b>	<b>Building Component Manufacturing and Services Sectors</b>
1	321	Wood product manufacturing
2	3271	Clay product and refractory manufacturing
3	3273	Cement and concrete product manufacturing
4	3274	Lime and gypsum product manufacturing
5	3279	Other nonmetallic mineral products
6	332	Fabricated metal product manufacturing
7	333	Machinery Manufacturing
8	335	Electrical equipment and appliance manufacturing
9	337	Furniture and related product manufacturing

Charlotte County's employment and average annual pay or wage level for the Building Component Manufacturing and Services cluster is shown in Table 15. Charlotte County has about 170 employees in the wood product manufacturing sub-cluster, 97 in machinery manufacturing, and about 200 in the furniture and related product manufacturing which includes cabinetry work. The average annual pay level was about \$33,000 but the machinery sub-cluster had a substantially higher level of annual pay at almost \$48,000.

**Table 15**  
**Building Component Manufacturing and Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Wood product manufacturing	321	0.88	1.03	0.15	170	\$29,986
Clay product and refractory manufacturing	3271	NC	NC	-	NC	-
Cement and concrete product manufacturing	3273	ND	ND	-	ND	\$34,247
Lime and gypsum product manufacturing	3274	NC	NC	-	NC	-
Other nonmetallic mineral products	3279	NC	ND	-	ND	ND
Fabricated metal product manufacturing	332	0.11	0.05	-0.06	21	\$27,704
Machinery manufacturing	333	ND	0.28	-	97	\$47,688
Electrical equipment and appliance manufacturing	335	NC	ND	-	ND	ND
Furniture and related product manufacturing	337	1.13	1.17	0.04	201	\$28,044
<b>Total for Cluster</b>		<b>0.91</b>	<b>0.90</b>	<b>-0.01</b>	<b>489</b>	<b>\$32,601</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Collier County's Building Component Manufacturing and Services Cluster data are provided in Table 16. There were almost 1,900 employees in Collier County working for companies defined by this cluster. The average annual pay was about \$38,000 with some sub-clusters paying an average annual pay of about \$46,000 and others paying a lower annual pay level of about \$32,000.

Employment in the Cement and Concrete Product Manufacturing was twice as high as the national

average percentage most likely reflecting the high regional market demand supporting the high levels of investment in residential and commercial developments.

**Table 16  
Building Component Manufacturing and Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Wood product manufacturing	321	0.23	0.28	0.05	155	\$ 35,831
Clay product and refractory manufacturing	3271	ND	ND	-	ND	ND
Cement and concrete product manufacturing	3273	2.23	2.08	-0.14	481	\$46,327
Lime and gypsum product manufacturing	3274	ND	ND	-	ND	ND
Other nonmetallic mineral products	3279	2.79	2.21	-0.58	162	\$32,173
Fabricated metal product manufacturing	332	0.21	0.18	-0.03	271	\$32,935
Machinery manufacturing	333	0.08	0.08	0.00	96	\$34,171
Electrical equipment and appliance mfg.	335	0.45	0.47	0.02	209	\$35,437
Furniture and related product manufacturing	337	0.92	0.91	-0.01	520	\$37,933
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.17</b>	<b>1.07</b>	<b>-0.09</b>	<b>1,894</b>	<b>\$38,219</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data NC: Not Calculable (does not exist or zero); ND: Not Disclosable						
Cells shaded this color	indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

Table 17 shows that Lee County had more than 3,600 employees working for companies defined by this cluster. The average annual pay level was about \$36,000 with a range of pay by sub-cluster from a low of around \$24,000 to a high of about \$40,000. Lee County had a very high location quotient in the Cement and Concrete Product Manufacturing that was almost 3.0. The high level of employment relative to the national percentage supports the high levels of residential and commercial developments in the region.

**Table 17**  
**Building Component Manufacturing and Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Wood product manufacturing	321	0.39	0.63	0.23	531	\$32,697
Clay product and refractory manufacturing	3271	0.27	0.20	-0.07	20	\$27,189
Cement and concrete product manufacturing	3273	2.82	2.48	-0.33	880	\$39,638
Lime and gypsum product manufacturing	3274	0.95	ND	-	ND	ND
Other nonmetallic mineral products	3279	0.15	0.28	0.13	32	\$24,416
Fabricated metal product manufacturing	332	0.24	0.30	0.06	696	\$34,351
Machinery manufacturing	333	0.40	0.39	-0.01	686	\$38,947
Electrical equipment and appliance mfg.	335	0.19	0.14	-0.05	95	ND
Furniture and related product manufacturing	337	0.61	0.79	0.18	695	\$33,667
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.07</b>	<b>0.98</b>	<b>-0.09</b>	<b>3,635</b>	<b>\$36,043</b>

RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data   
 NC: Not Calculable (does not exist or zero);   
 ND: Not Disclosable  
 Cells shaded this color indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.

The regional totals and averages for the Building Component Manufacturing and Services Cluster are provided in Table 18. There are over 6,000 employees in this regional cluster. The 2004 location quotients for the overall cluster are about 0.9 which indicates that employment in this cluster is about the same percentage as the nation. Cement and Concrete Product Manufacturing had a fairly high location quotient of 2.08. Disclosure rules limit the availability of some average annual pay levels.

**Table 18**  
**Building Component Manufacturing and Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Wood product manufacturing	321	0.39	0.55	0.16	856	\$ 32,726
Clay product and refractory manufacturing	3271	0.14	0.11	-0.03	20	-
Cement and concrete product manufacturing	3273	2.27	2.08	-0.19	1,361	-
Lime and gypsum product manufacturing	3274	0.50	0.00	-0.50	0	-
Other nonmetallic mineral products	3279	1.08	0.93	-0.14	194	-
Fabricated metal product manufacturing	332	0.21	0.23	0.02	988	\$ 33,821
Machinery manufacturing	333	0.24	0.27	0.03	879	\$ 39,390
Electrical equipment and appliance mfg.	335	0.26	0.24	-0.02	304	-
Furniture and related product manufacturing	337	0.78	0.87	0.09	1,416	\$ 34,435
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.91</b>	<b>0.87</b>	<b>-0.03</b>	<b>6,018</b>	<b>\$ 34,988</b>

RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data NC: Not Calculable (does not exist or zero); ND: Not Disclosable

Cells shaded this color indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.

### **3.33 Business Services**

Table 19 provides a list of initial business sectors or sub-clusters included in the Business Services cluster definition.

**Table 19**  
**Business Services Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Business Services Cluster Sectors</b>
1	5142	Data Processing
2	5411	Legal services
3	5412	Accounting and bookkeeping services
4	5413	Architectural and engineering services
5	5415	Computer systems design and related services
6	5416	Management and technical consulting services
7	5419	Other professional and technical services
8	5611	Office administrative services
9	5613	Employment services
10	5617	Services to buildings and dwellings

The Business Services cluster and sub-cluster information for Charlotte County is shown in Table 20. There were about 2,300 employees with an average annual pay level of about \$32,000. The average location quotient for the cluster was about 1.0 indicating that the employment in this cluster was about the same percentage as the nation.

**Table 20  
Business Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Data Processing	5142	-	-	-	NC	-
Legal services	5411	0.81	0.75	-0.07	262	\$55,989
Accounting and bookkeeping services	5412	0.50	1.39	0.89	346	\$24,112
Architectural and engineering services	5413	0.75	0.87	0.12	330	\$42,500
Computer systems design and related services	5415	0.14	0.16	0.02	54	\$47,847
Management and technical consulting services	5416	0.72	0.94	0.22	222	\$38,561
Other professional and technical services	5419	0.83	0.94	0.11	144	\$27,849
Office administrative services	5611	0.25	0.33	0.08	32	\$172,542
Employment services	5613	ND	0.28	-	284	\$15,674
Services to buildings and dwellings	5617	1.33	1.32	-0.01	668	\$20,511
<b>Total for Cluster</b>		<b>0.94</b>	<b>0.98</b>	<b>0.04</b>	<b>2,342</b>	<b>\$32,393</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Collier County had about 13,200 employees with an average annual pay level of about \$36,000 for the Business Services Sector as shown in Table 21 below. The sub-clusters had a fairly large range of average annual pay that included a low of \$24,000 to a high of \$68,000. The Business Services cluster had a 2004 location quotient of about 1.4 indicating that this cluster most likely serves a market beyond Collier County. Computer Systems Design and Related Services was a very weak sub-cluster with a 2004 location quotient of only 0.18. The high wage of \$172,500 for the office administration was reported in the AWI data but would seem to be an outlier or potentially an error.

**Table 21  
Business Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Data Processing	5142	-	-	-	NC	-
Legal services	5411	1.19	1.06	-0.12	1,241	\$68,262
Accounting and bookkeeping services	5412	0.76	0.72	-0.03	600	\$42,443
Architectural and engineering services	5413	0.94	1.01	0.07	1,279	\$50,543
Computer systems design and related services	5415	0.18	0.18	0.00	201	\$58,836
Management and technical consulting services	5416	0.53	0.65	0.12	511	\$65,794
Other professional and technical services	5419	0.75	0.56	-0.19	287	\$28,362
Office administrative services	5611	1.39	1.08	-0.31	355	\$72,827
Employment services	5613	1.01	1.57	0.56	5,381	\$25,703
Services to buildings and dwellings	5617	1.97	1.97	0.00	3,321	\$24,662
<b>Total for Cluster</b>		<b>1.25</b>	<b>1.44</b>	<b>0.19</b>	<b>13,176</b>	<b>\$36,010</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

A summary of the Business Services cluster for Lee County is provided in Table 22. This cluster included about 17,500 employees with an average annual pay level of \$36,000. The 2004 location quotient was about 1.1 indicating that employment in this cluster was about equal to the average percentage for the nation. The Computer Systems Design and Related Services sub-cluster was fairly weak with a 2004 location quotient of only 0.22.

**Table 22  
Business Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Data Processing	5142	-	-	-	NC	-
Legal services	5411	1.04	1.03	-0.01	1,837	\$53,471
Accounting and bookkeeping services	5412	1.30	1.13	-0.17	1,442	\$35,395
Architectural and engineering services	5413	1.09	1.12	0.03	2,166	\$50,354
Computer systems design and related services	5415	0.24	0.22	-0.02	390	\$50,792
Management and technical consulting services	5416	1.20	0.90	-0.30	1,091	\$67,152
Other professional and technical services	5419	1.02	1.01	0.00	792	\$26,425
Office administrative services	5611	1.64	1.23	-0.41	619	\$44,740
Employment services	5613	1.09	1.01	-0.07	5,323	\$24,218
Services to buildings and dwellings	5617	1.51	1.49	-0.02	3,849	\$24,163
<b>Total for Cluster</b>		<b>1.19</b>	<b>1.13</b>	<b>-0.07</b>	<b>17,509</b>	<b>\$35,521</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Finally, Table 23 provides an overview of sub-cluster and cluster information for Business Services at the regional level. There were about 33,000 employees in Lee County in the Business Services cluster. The average annual pay level was about \$35,000 and the overall 2004 location quotient was about 1.2 which indicates that the employment in this cluster is above the national employment percentage but not so high as to be easily classified as a traded cluster.

**Table 23**  
**Business Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Data Processing	5142	-	-	-	NC	-
Legal services	5411	1.06	1.01	-0.05	3,340	\$59,164
Accounting and bookkeeping services	5412	1.01	1.01	0.00	2,388	\$35,531
Architectural and engineering services	5413	1.00	1.05	0.06	3,775	\$49,731
Computer systems design and related services	5415	0.21	0.20	-0.01	645	\$53,052
Management and technical consulting services	5416	0.91	0.82	-0.09	1,824	\$63,292
Other professional and technical services	5419	0.90	0.85	-0.05	1,223	\$27,047
Office administrative services	5611	1.39	1.08	-0.30	1,006	\$58,717
Employment services	5613	0.93	1.13	0.20	10,988	\$24,724
Services to buildings and dwellings	5617	1.65	1.64	-0.01	7,838	\$24,063
<b>Total for Cluster</b>		<b>1.13</b>	<b>1.18</b>	<b>0.05</b>	<b>33,027</b>	<b>\$35,495</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data NC: Not Calculable (does not exist or zero); ND: Not Disclosable						
Cells shaded this color indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.34 Distribution (Wholesale) Services**

Distribution Services is a cluster that has been defined in the literature but there is not enough detail in the IMPLAN input-output matrix to assist in its definition. For purposes of additional research, the Distribution Services Cluster is defined using the NAICS definitions for wholesale and divided into two groups or parts for ease of analysis.

#### **3.34.1 Distribution Services – (Part One):**

The initial Distribution Services Definition for this study is provided in Table 24 and includes motor vehicles, paper, furniture, lumber, commercial equipment, metal, electric goods, hardware and plumbing, and miscellaneous wholesalers.

**Table 24**  
**Distribution Services Cluster (Part 1)**

<b>Number</b>	<b>NAICS Code</b>	<b>Distribution (Wholesale) Services Part 1 Sectors</b>
1	4231	Motor vehicle and parts merchant wholesalers
2	4232	Furniture and furnishing merchant wholesalers
3	4233	Lumber and const. supply merchant wholesalers
4	4234	Commercial equip. merchant wholesalers
5	4235	Metal and mineral merchant wholesalers
6	4236	Electric goods merchant wholesalers
7	4237	Hardware and plumbing merchant wholesalers
8	4238	Machinery and supply merchant wholesalers
9	4239	Misc. durable goods merchant wholesalers
10	4241	Paper and paper product merchant wholesalers

Charlotte County's Distribution Services (Part 1) Cluster grouping information is provided in Table 25. The average annual pay level is about \$37,000 and included more than 500 employees. Most sub-clusters had location quotients well below one. Lumber and Construction Supply Merchant

Wholesalers had a high location quotient of 2.94, includes 214 employees and had an average annual pay level of about \$36,000. Given the high construction levels in Charlotte County and the need to repair or rebuild many existing structures due to hurricane damage, the location quotient of 2.94 for the Lumber and Construction Supply Wholesalers was expected.

**Table 25  
Distribution (Wholesale) Services Part 1**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Motor vehicle and parts merchant wholesalers	4231	0.32	0.29	-0.03	30	\$35,744
Furniture and furnishing merchant wholesalers	4232	0.21	0.32	0.12	11	\$17,972
Lumber and const. supply merchant wholesalers	4233	0.41	2.94	2.53	214	\$36,340
Commercial equip. merchant wholesalers	4234	0.16	0.22	0.06	42	\$42,440
Metal and mineral merchant wholesalers	4235	0.17	0.14	-0.04	5	\$37,619
Electric goods merchant wholesalers	4236	0.23	0.36	0.13	37	\$41,081
Hardware and plumbing merchant wholesalers	4237	0.93	0.79	-0.14	56	\$35,053
Machinery and supply merchant wholesalers	4238	0.34	0.53	0.19	104	\$38,768
Misc. durable goods merchant wholesalers	4239	0.28	0.21	-0.07	17	\$44,668
Paper and paper product merchant wholesalers	4241	ND	ND	-	ND	ND
<b>Total for Cluster</b>		<b>0.43</b>	<b>1.49</b>	<b>1.05</b>	<b>516</b>	<b>\$37,387</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Collier County Distribution Services (Part 1) information is provided by Table 26. This included about 1,350 employees with an average annual pay level of about \$53,000. The location quotient was generally below one except for the Lumber and Construction Supply Merchant Wholesalers with a value of 1.18 and an average annual pay level of about \$30,000, which seemed low relative to pay for values provided for the other counties in the study.

**Table 26**  
**Distribution (Wholesale) Services Part 1**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Motor vehicle and parts merchant wholesalers	4231	0.25	0.16	-0.08	55	\$33,134
Furniture and furnishing merchant wholesalers	4232	0.15	0.48	0.33	54	\$28,457
Lumber and const. supply merchant wholesalers	4233	1.40	1.18	-0.22	287	\$29,755
Commercial equip. merchant wholesalers	4234	0.44	0.50	0.06	322	\$78,518
Metal and mineral merchant wholesalers	4235	0.17	0.19	0.02	23	\$53,152
Electric goods merchant wholesalers	4236	0.54	0.56	0.03	192	\$48,686
Hardware and plumbing merchant wholesalers	4237	0.46	0.41	-0.05	97	\$37,969
Machinery and supply merchant wholesalers	4238	0.34	0.23	-0.10	153	\$81,180
Misc. durable goods merchant wholesalers	4239	0.58	0.53	-0.05	143	\$42,708
Paper and paper product merchant wholesalers	4241	0.17	0.16	-0.01	25	\$50,183
<b>Total for Cluster</b>		<b>0.63</b>	<b>0.59</b>	<b>-0.03</b>	<b>1,351</b>	<b>\$52,714</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Lee County Distribution Services (Part 1) is shown in Table 27. There were about 3,700 employees with an average annual pay level of about \$47,000. Similar to the other counties, Lumber and Construction Supply Merchant Wholesalers had a high location quotient of 1.11 for Lee County which was expected given the overall high level of construction in the county.

**Table 27**  
**Distribution (Wholesale) Services Part 1**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Motor vehicle and parts merchant wholesalers	4231	0.45	0.31	-0.13	164	\$40,565
Furniture and furnishing merchant wholesalers	4232	0.52	0.75	0.23	130	\$62,408
Lumber and const. supply merchant wholesalers	4233	1.14	1.11	-0.03	414	\$51,866
Commercial equip. merchant wholesalers	4234	0.48	0.49	0.02	485	\$44,827
Metal and mineral merchant wholesalers	4235	0.42	0.67	0.25	125	\$37,045
Electric goods merchant wholesalers	4236	0.91	0.96	0.05	504	\$61,478
Hardware and plumbing merchant wholesalers	4237	0.60	0.80	0.19	288	\$41,462
Machinery and supply merchant wholesalers	4238	1.12	1.26	0.14	1,266	\$43,659
Misc. durable goods merchant wholesalers	4239	0.67	0.65	-0.02	270	\$34,526
Paper and paper product merchant wholesalers	4241	0.14	0.19	0.05	44	\$48,609
<b>Total for Cluster</b>		<b>0.85</b>	<b>0.93</b>	<b>0.08</b>	<b>3,690</b>	<b>\$46,685</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Can not disclose.						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Overall for the region, Distribution Services (Part 1) had employment of about 5,500 with a relatively high average annual pay level of slightly over \$47,000.

**Table 28**  
**Distribution (Wholesale) Services Part 1**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Motor vehicle and parts merchant wholesalers	4231	0.36	0.26	-0.10	249	\$38,343
Furniture and furnishing merchant wholesalers	4232	0.35	0.61	0.26	195	\$50,500
Lumber and const. supply merchant wholesalers	4233	1.15	1.33	0.19	915	\$41,299
Commercial equip. merchant wholesalers	4234	0.43	0.47	0.04	849	\$57,487
Metal and mineral merchant wholesalers	4235	0.30	0.45	0.14	153	\$39,485
Electric goods merchant wholesalers	4236	0.70	0.76	0.06	733	\$57,098
Hardware and plumbing merchant wholesalers	4237	0.59	0.66	0.07	441	\$39,880
Machinery and supply merchant wholesalers	4238	0.75	0.82	0.07	1,523	\$47,094
Misc. durable goods merchant wholesalers	4239	0.59	0.56	-0.03	430	\$37,648
Paper and paper product merchant wholesalers	4241	0.14	0.06	-0.08	25	-
<b>Total for Cluster</b>		<b>0.67</b>	<b>0.76</b>	<b>0.10</b>	<b>5,513</b>	<b>\$47,264</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND Can not be disclosed.</b>						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.34.1 Distribution Services – (Part Two):**

Distribution Services was divided into two parts and Table 29 provides the second half of a list of potential sub-clusters for study. This group included drug, apparel, grocery, farm, chemical, petroleum, alcoholic beverage, and wholesale trade agents and brokers.

**Table 29**  
**Distribution Services Cluster (Part 2)**

<b>Number</b>	<b>NAICS Code</b>	<b>Distribution (Wholesale) Services (Part 2) Sectors</b>
1	4242	Druggists' goods merchant wholesalers
2	4243	Apparel and piece goods merchant wholesalers
3	4244	Grocery and Related Product Wholesalers
4	4245	Farm product raw material merch. Whls.
5	4246	Chemical merchant wholesalers
6	4247	Petroleum merchant wholesalers
7	4248	Alcoholic beverage merchant wholesalers
8	4249	Misc. nondurable goods merchant wholesalers
9	425120	Wholesale trade agents and brokers

Table 30 provides the Distribution Services (Part 2) summary information for Charlotte County. The Distribution Services (Part 2) has a much lower level of employment and a lower level of annual pay compared to Distribution Services (Part 1). The levels of employment and the location quotients are quite low indicating that the county is most likely importing many of these products or that the supply chain includes vertically integrated companies that have their own internal distribution facilities.

**Table 30**  
**Distribution (Wholesale) Services Part 2**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Druggists' goods merchant wholesalers	4242	ND	ND	-	ND	ND
Apparel and piece goods merchant wholesalers	4243	0.30	ND	-	ND	ND
Grocery and Related Product Wholesalers	4244	0.18	0.12	-0.06	24	ND
Farm product raw material merch. whls.	4245	ND	ND	-	ND	ND
Chemical merchant wholesalers	4246	0.17	0.18	0.01	7	\$47,151
Petroleum merchant wholesalers	4247	ND	ND	-	ND	ND
Alcoholic beverage merchant wholesalers	4248	ND	ND	-	ND	ND
Misc. nondurable goods merchant wholesalers	4249	0.23	0.29	0.05	31	\$31,034
Wholesale trade agents and brokers	425120	ND	.24	-	46	\$30,916
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.22</b>	<b>0.22</b>	<b>0.00</b>	<b>62</b>	<b>\$34,003</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Can not disclose.						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Collier County's Distribution Services (Part 2) summary information is provided in Table 31.

All of the 2004 sub-cluster location quotients are below 0.70 indicating that employment in these sub-clusters is below the average percentage for the nation. It is expected that many of these products are supplied from companies outside the county or that many of the companies are vertically integrated. Five of the sub-clusters did not have sufficient numbers of companies or employees to allow public disclosure of employment and average annual pay. In general, wholesale distribution has relatively high average pay levels with the average for Distribution Services (Part 2) of \$47,000. A very high average annual wage level of \$271,939 with low employment was reported for the apparel sub-cluster.

**Table 31**  
**Distribution (Wholesale) Services Part 2**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Druggists' goods merchant wholesalers	4242	0.38	ND	-	ND	ND
Apparel and piece goods merchant wholesalers	4243	ND	0.04	-	6	\$271,939
Grocery and Related Product Wholesalers	4244	0.61	0.69	0.08	478	\$46,170
Farm product raw material merch. whls.	4245	NC	ND	-	ND	ND
Chemical merchant wholesalers	4246	0.65	0.32	-0.33	42	ND
Petroleum merchant wholesalers	4247	0.83	ND	-	ND	ND
Alcoholic beverage merchant wholesalers	4248	ND	ND	-	ND	ND
Misc. nondurable goods merchant wholesalers	4249	0.52	0.61	0.10	221	\$41,842
Wholesale trade agents and brokers	425120	ND	ND	-	ND	\$62,827
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.60</b>	<b>0.64</b>	<b>0.05</b>	<b>747</b>	<b>\$46,735</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Lee County Distribution Services (Part 2) is shown in Table 32. The average annual pay level for this group was about \$45,000 and it employed about 2,100 people. Most of the 2004 location quotients were well below one except for the Alcoholic Beverage Merchant Wholesalers which had a high location quotient of 1.95. This high level can be explained given the importance of Tourism and Entertainment to the region's economy.

**Table 32  
Distribution (Wholesale) Services Part 2**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Druggists' goods merchant wholesalers	4242	ND	0.24	-	81	\$37,528
Apparel and piece goods merchant wholesalers	4243	0.77	0.41	-0.36	93	\$50,416
Grocery and Related Product Wholesalers	4244	0.58	0.64	0.05	674	\$40,425
Farm product raw material merch. whls.	4245	ND	ND	-	ND	ND
Chemical merchant wholesalers	4246	0.70	0.68	-0.02	136	\$80,468
Petroleum merchant wholesalers	4247	0.55	0.30	-0.25	46	\$43,534
Alcoholic beverage merchant wholesalers	4248	1.72	1.95	0.23	425	\$44,723
Misc. nondurable goods merchant wholesalers	4249	0.57	0.42	-0.15	231	\$37,589
Wholesale trade agents and brokers	425120	0.67	0.46	-0.21	455	\$43,325
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.80</b>	<b>0.81</b>	<b>0.01</b>	<b>2,141</b>	<b>\$44,523</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b>	indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

Table 33 provides summary information for the region's Distribution Services (Part 2) potential cluster. There were limitations on disclosure for the 2004 average annual pay level so one should be careful about using the average annual pay level of about \$39,000 due to limits on the disclosure of average annual wages.

**Table 33  
Distribution (Wholesale) Services Part 2**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Druggists' goods merchant wholesalers	4242	0.13	0.13	0.00	81	-
Apparel and piece goods merchant wholesalers	4243	0.44	0.24	-0.20	99	-
Grocery and Related Product Wholesalers	4244	0.55	0.60	0.06	1,176	-
Farm product raw material merch. whls.	4245	0.00	0.00	0.00	0	-
Chemical merchant wholesalers	4246	0.62	0.50	-0.12	185	-
Petroleum merchant wholesalers	4247	0.58	0.16	-0.42	46	-
Alcoholic beverage merchant wholesalers	4248	0.90	1.06	0.16	425	-
Misc. nondurable goods merchant wholesalers	4249	0.51	0.47	-0.04	483	\$39,114
Wholesale trade agents and brokers	425120	0.35	0.25	-0.10	455	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.54</b>	<b>0.55</b>	<b>0.02</b>	<b>2,950</b>	<b>\$39,114</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.35 Entertainment**

Entertainment is an industry cluster that includes performing arts, spectator sports, museums, recreation and amusement parks, motion picture and sound recording industries, and broadcasting.

The NAICS codes included in this cluster are provided in Table 34.

**Table 34**  
**Entertainment Services**

<b>Number</b>	<b>NAICS Code</b>	<b>Entertainment Services Sectors</b>
1	711	Performing arts and spectator sports
2	712	Museums, historical sites, zoos, and parks
3	713	Amusements, gambling, and recreation
4	512	Motion picture and sound recording industries
5	515	Broadcasting, except Internet

Charlotte County had about 700 employees in the Entertainment cluster with an average annual pay level of about \$18,000. A summary of the Charlotte County information is provided in Table 35.

Relative to the nation, Charlotte County had a fairly high level of employment in the Amusements, Gambling, and Recreation sub-cluster with a location quotient of about 1.75 in 2004. The pay level was fairly low at about \$18,000.

**Table 35  
Entertainment Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Performing arts and spectator sports	711	ND	.05	-	6	\$13,647
Museums, historical sites, zoos, and parks	712	ND	NC	-	NC	-
Amusements, gambling, and recreation	713	2.12	1.76	-	722	\$18,070
Motion picture and sound recording industries	512	ND	ND	-	ND	ND
Broadcasting, except Internet	515	ND	ND	-	ND	ND
		-	-	-	-	-
<b>Total for Cluster</b>		<b>2.12</b>	<b>1.75</b>	<b>-0.37</b>	<b>728</b>	<b>\$18,034</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Can not be disclosed.						
<b>Cells shaded this color</b>	Indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

Table 36 provides a summary of information on Entertainment Services cluster for Collier County. There were about 5,600 employees with an average annual pay level of about \$33,000. The sub-cluster, Amusements, Gambling, and Recreation had about 5,000 employees with an average annual pay level of about \$31,000 and a very high location quotient of about 3.66.

**Table 36  
Entertainment Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Performing arts and spectator sports	711	1.24	1.03	-0.21	395	\$60,167
Museums, historical sites, zoos, and parks	712	0.66	0.86	0.20	101	\$28,624
Amusements, gambling, and recreation	713	3.73	3.66	-0.07	4,987	\$31,389
Motion picture and sound recording industries	512	0.52	0.38	-0.14	146	\$16,160
Broadcasting, except Internet	515	ND	ND	-	ND	ND
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>3.37</b>	<b>3.34</b>	<b>-0.03</b>	<b>5,629</b>	<b>\$32,964</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosed.						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Lee County's Entertainment Services cluster information is shown in Table 37. There were about 6,500 employed in this cluster with an average annual pay level of about \$27,000. The location quotients were high for two sub-clusters, Performing Arts and Spectator Sports had a location quotient of about 1.6 and Amusements, Gambling, and Recreation had a location quotient of about 2.2.

**Table 37**

**Entertainment Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Performing arts and spectator sports	711	1.79	1.56	-0.23	917	\$17,777
Museums, historical sites, zoos, and parks	712	0.26	0.14	-0.12	26	\$23,629
Amusements, gambling, and recreation	713	2.03	2.23	0.20	4,664	\$26,262
Motion picture and sound recording industries	512	0.49	0.39	-0.10	230	\$18,187
Broadcasting, except Internet	515	1.81	1.34	-0.47	669	\$45,354
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.88</b>	<b>1.97</b>	<b>0.09</b>	<b>6,506</b>	<b>\$26,733</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosed.						
<b>Cells shaded this color</b>	Indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

Entertainment Services Cluster information for the region is shown in Table 38. This cluster is a fairly strong regional cluster with a location quotient of about 2.6. It employed about 13,000 people and had an average annual pay level of about \$29,000.

**Table 38  
Entertainment Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Performing arts and spectator sports	711	1.61	1.39	-0.17	1,318	\$30,642
Museums, historical sites, zoos, and parks	712	0.51	0.71	0.01	127	\$27,601
Amusements, gambling, and recreation	713	2.90	2.88	-0.15	10,373	\$28,157
Motion picture and sound recording industries	512	0.50	0.39	-0.10	376	\$17,400
Broadcasting, except Internet	515	1.81	1.34	-0.23	669	\$45,354
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>2.56</b>	<b>2.56</b>	<b>0.00</b>	<b>12,863</b>	<b>\$28,986</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosed						
<b>Cells shaded this color</b>	Indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

### **3.36 Financial Services**

The Financial Services Cluster definitions are provided in Table 39. The cluster includes banking, mortgage and loan brokers, financial transaction processing, insurance, and investment pools and funds.

**Table 39**  
**Financial Services Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Financial Services Cluster Sectors</b>
1	522110	Commercial banking
2	522120	Savings institutions
3	522130	Credit unions
4	5222	Nondepository credit intermediation
5	522310	Mortgage and nonmortgage loan brokers
6	522320	Financial transaction processing and clearing
7	522390	Other credit intermediation activities
8	5241	Insurance carriers
9	5251	Insurance and employee benefit funds
10	5259	Other investment pools and funds

Financial Services employment in Charlotte County is lower on a percentage basis than the nation. The summary information for the Financial Services cluster is shown in Table 40. There were about 600 employees with an average annual pay level of about \$51,000.

**Table 40  
Financial Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial banking	52211	0.91	1.05	0.14	406	\$38,569
Savings institutions	52212	ND	ND	-	ND	ND
Credit unions	52213	ND	0.55	-	35	\$30,691
Nondepository credit intermediation	5222	0.35	0.46	0.11	105	\$64,152
Mortgage and nonmortgage loan brokers	52231	ND	0.39	-	15	\$23,166
Financial transaction processing and clearing	52232	NC	NC	-	NC	NC
Other credit intermediation activities	52239	ND	0.39	-	11	\$24,137
Insurance carriers	5241	0.25	0.17	-0.09	65	\$51,729
Insurance and employee benefit funds	5251	NC	NC	-	NC	NC
Other investment pools and funds	5259	ND	ND	-	ND	ND
<b>Total for Cluster</b>		<b>0.71</b>	<b>0.81</b>	<b>0.10</b>	<b>637</b>	<b>\$51,243</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Table 41 provides a Financial Services Cluster summary table for Collier County. Commercial Banking and Other Investment Pools and Funds were quite strong with location quotients of about 1.4 and 2.4 respectively. Overall, the Financial Services cluster employed about 2,500 employees, the average annual pay was about \$54,000, and the location quotient was about 1.1.

**Table 41  
Financial Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial banking	52211	1.29	1.36	0.07	1,748	\$60,096
Savings institutions	52212	ND	ND	-	ND	-
Credit unions	52213	ND	ND	-	ND	-
Nondepository credit intermediation	5222	0.30	0.38	0.07	285	\$59,706
Mortgage and nonmortgage loan brokers	52231	1.99	0.98	-1.01	126	\$37,074
Financial transaction processing and clearing	52232	ND	ND	-	ND	-
Other credit intermediation activities	52239	ND	ND	-	ND	-
Insurance carriers	5241	0.23	0.22	-0.01	283	\$47,589
Insurance and employee benefit funds	5251	NC	ND	-	ND	ND
Other investment pools and funds	5259	ND	2.42	-	28	\$64,280
<b>Total for Cluster</b>		<b>1.10</b>	<b>1.11</b>	<b>0.01</b>	<b>2,470</b>	<b>\$53,669</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Table 42 provides statistics on the Financial Services cluster for Lee County. There are about 3,800 employees with an average annual pay level of about \$49,000. The location quotients vary by sub-cluster but are generally one or lower.

**Table 42  
Financial Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial banking	52211	1.04	1.01	-0.03	1991	\$46,736
Savings institutions	52212	0.26	ND	-	ND	-
Credit unions	52213	ND	ND	-	ND	-
Nondepository credit intermediation	5222	0.58	0.62	0.04	723	\$55,835
Mortgage and nonmortgage loan brokers	52231	ND	1.05	-	207	\$39,758
Financial transaction processing and clearing	52232	ND	0.05	-	6	\$17,618
Other credit intermediation activities	52239	0.58	0.53	-0.05	75	\$50,589
Insurance carriers	5241	0.34	0.40	0.06	785	\$50,145
Insurance and employee benefit funds	5251	ND	ND	-	ND	ND
Other investment pools and funds	5259	ND	0.39	-	23	\$50,489
<b>Total for Cluster</b>		<b>0.79</b>	<b>0.80</b>	<b>0.01</b>	<b>3,810</b>	<b>\$48,839</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Financial Services Sector information for the region is shown in Table 43. There were roughly 7,000 employees with an average annual pay level of about \$51,000. The location quotient was slightly less than one for the overall cluster.

**Table 43**  
**Financial Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial banking	52211	1.13	1.16	0.03	4145	\$51,570
Savings institutions	52212	0.26	ND	-	ND	-
Credit unions	52213	ND	0.55	-	35	\$30,691
Nondepository credit intermediation	5222	0.49	0.54	0.05	1,113	\$57,611
Mortgage and nonmortgage loan brokers	52231	1.99	1.00	-0.99	348	\$38,071
Financial transaction processing and clearing	52232	ND	0.05	-	6	\$17,618
Other credit intermediation activities	52239	0.58	0.51	0.02	86	\$47,206
Insurance carriers	5241	0.30	0.34	0.04	1,113	\$49,597
Insurance and employee benefit funds	5251	ND	ND	-	ND	ND
Other investment pools and funds	5259	ND	1.50	-	51	\$58,060
<b>Total for Cluster</b>		<b>0.90</b>	<b>0.91</b>	<b>.01</b>	<b>6,917</b>	<b>\$51,398</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.37 Medical Instruments, Appliances, and Supplies**

Table 44 provides a definition of the Medical Instruments, Appliances, and Supplies Cluster.

This is an initial definition for this research study.

**Table 44**  
**Medical Instruments, Appliances, and Supplies Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Medical Instruments, Appliances, and Supplies Sectors</b>
1	339112	Surgical and medical instrument manufacturing
2	339113	Surgical appliance and supplies manufacturing

Charlotte County did not have any companies or employees in this cluster that were reported to Florida's Agency for Workforce Innovation (AWI) as shown in Table 45.

**Table 45**  
**Medical Instruments, Appliances, and Supplies**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Surgical and medical instrument manufacturing	339112	NC	NC	-	NC	-
Surgical appliance and supplies manufacturing	339113	NC	NC	-	NC	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>					<b>0</b>	
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Table 46 summarizes the available information for Collier County.

**Table 46**  
**Medical Instruments, Appliances, and Supplies**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Surgical and medical instrument manufacturing	339112	ND	ND	-	ND	ND
Surgical appliance and supplies manufacturing	339113	ND	0.21	-	18	\$65,121
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>					<b>18</b>	<b>\$65,121</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Table 47 provides a summary of available information on Medical Instruments, Appliances, and Supplies for Lee County. Lee County had about 93 employees in this potential cluster with an average annual pay level of \$47,525.

**Table 47  
Medical Instruments, Appliances, and Supplies**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Surgical and medical instrument manufacturing	339112	ND	0.43	-	69	\$48,522
Surgical appliance and supplies manufacturing	339113	ND	0.18	-	24	\$44,660
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>			<b>0.36</b>		<b>93</b>	<b>\$47,525</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Southwest Florida Region cluster information on Medical Instruments, Appliances, and Supplies is provided in Table 48. The cluster analysis shows that the region has fairly low location quotients with relatively high average annual pay levels.

**Table 48**  
**Medical Instruments, Appliances, and Supplies**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Surgical and medical instrument manufacturing	339112	0.00	0.23	0.23	69	\$48,522
Surgical appliance and supplies manufacturing	339113	0.00	0.19	0.19	42	\$53,442
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>			<b>0.22</b>		<b>111</b>	<b>\$50,384</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.38 Printing and Publishing**

The Printing and Publishing cluster definitions are provided in Table 49.

**Table 49**  
**Printing and Publishing Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Printing and Publishing Sectors</b>
1	323112	Commercial flexographic printing
2	323113	Commercial screen printing
3	323115	Digital printing
4	323119	Other commercial printing
5	51112	Periodical publishers
6	51113	Book publishers
7	51114	Directory and mailing list publishers
8	51119	Other publishers
9	5418	Advertising and related services

Charlotte County Cluster analysis information is provided in Table 50. The table does not provide much useful information since most of the sub-cluster data can not be revealed due to non-disclosure rules.

**Table 50  
Printing and Publishing Cluster**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial flexographic printing	323112	NC	NC	-	NC	-
Commercial screen printing	323113	ND	ND	-	ND	ND
Digital printing	323115	ND	ND	-	ND	ND
Other commercial printing	323119	NC	ND	-	ND	ND
Periodical publishers	51112	ND	ND	-	ND	-
Book publishers	51113	ND	ND	-	ND	-
Directory and mailing list publishers	51114	NC	NC	-	NC	-
Other publishers	51119	NC	ND	-	ND	-
Advertising and related services	5418	0.05	0.09	0.04	12	\$18,006
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.05</b>	<b>0.09</b>	<b>0.04</b>	<b>12</b>	<b>\$18,006</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Collier County's Printing and Publishing Cluster employment and annual pay information is provided in Table 51. There are about 400 employees in this cluster with an average annual pay level of about \$36,000. The location quotients were fairly low except for Book Publishers which had a value of 1.07 in 2004.

**Table 51  
Printing and Publishing Cluster**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial flexographic printing	323112	0.10	ND	-	ND	ND
Commercial screen printing	323113	0.51	0.59	0.08	39	\$26,772
Digital printing	323115	NC	ND	-	ND	ND
Other commercial printing	323119	0.15	0.40	0.25	19	\$25,834
Periodical publishers	51112	0.02	0.43	0.41	61	\$44,328
Book publishers	51113	1.61	1.07	-0.54	86	ND
Directory and mailing list publishers	51114	0.18	0.96	0.78	45	ND
Other publishers	51119	ND	ND	-	ND	-
Advertising and related services	5418	0.35	0.34	0.00	148	\$40,131
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.82</b>	<b>0.61</b>	<b>-0.22</b>	<b>398</b>	<b>\$36,121</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

The Lee County Printing and Publishing Cluster analysis information is provided in Table 52. Overall, the cluster employed about 1,000 people and had an average annual pay or wage level of about \$43,000. One particular sub-cluster does stand out. The Directory and mailing list publishers had a location quotient of 2.5 with about 180 employees. The other sub-clusters had location quotients of one or below.

**Table 52  
Printing and Publishing Cluster**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial flexographic printing	323112	ND	ND	-	ND	ND
Commercial screen printing	323113	0.62	0.70	0.09	71	\$39,673
Digital printing	323115	ND	0.66	-	20	\$27,604
Other commercial printing	323119	ND	ND	-	ND	ND
Periodical publishers	51112	0.82	1.00	0.18	218	\$51,972
Book publishers	51113	ND	ND	-	ND	-
Directory and mailing list publishers	51114	ND	2.55	-	184	\$57,750
Other publishers	51119	ND	NC	-	NC	-
Advertising and related services	5418	0.77	0.81	0.04	541	\$34,570
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.77</b>	<b>1.15</b>	<b>0.38</b>	<b>1,034</b>	<b>\$42,579</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b>	indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

Table 53 provides the analysis information for the Printing and Publishing Cluster for the region. Overall, the location quotient was below one and this potential cluster had approximately 1,400 employees in the region.

**Table 53  
Printing and Publishing Cluster**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Commercial flexographic printing	323112	0.03	0.00	-0.03	0	-
Commercial screen printing	323113	0.50	0.59	0.09	110	\$35,099
Digital printing	323115	0.00	0.36	0.36	20	\$27,604
Other commercial printing	323119	0.05	0.14	0.09	19	\$25,834
Periodical publishers	51112	0.43	0.69	0.26	279	\$50,301
Book publishers	51113	0.57	0.38	-0.20	86	-
Directory and mailing list publishers	51114	0.06	1.72	1.65	229	\$35,461
Other publishers	51119	0.00	0.00	0.00	0	-
Advertising and related services	5418	0.53	0.57	0.04	701	\$35,461
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.51</b>	<b>0.76</b>	<b>0.25</b>	<b>1,444</b>	<b>\$41,448</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.39 Software and Computer Services**

Software and Computer Services Cluster Analysis using the NAICS codes provided in Table 54 for the analysis by county and region.

**Table 54**  
**Software and Computer Services Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Software and Computer Services Sectors</b>
1	541511	Custom computer programming services
2	511210	Software publishers
3	541512	Computer systems design services
4	518210	Data processing and related services
5	518111	Internet service providers
6	541513	Computer facilities management services
7	541519	Other computer related services

Charlotte County's Software and Computer Services cluster analysis information is provided in Table 55. There were about 60 employed with an average annual pay or wage level of about \$46,000.

**Table 55  
Software and Computer Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Custom computer programming services	541511	0.18	0.18	0.00	27	\$41,609
Software publishers	511210	NC	NC	-	NC	-
Computer systems design services	541512	ND	0.10	-	14	\$66,049
Data processing and related services	518210	ND	ND	-	ND	ND
Internet service providers	518111	ND	ND	-	6	\$28,038
Computer facilities management services	541513	NC	NC	-	NC	-
Other computer related services	541519	ND	0.37	-	12	\$39,856
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.18</b>	<b>0.20</b>	<b>0.02</b>	<b>59</b>	<b>\$45,671</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

The Collier County Software and Computer Services Cluster Analysis is provided in Table 56. There were about 300 employees with an average annual pay level of about \$57,000 which is relatively high compared to most industries or clusters. The location quotients were generally fairly low except for the sub-cluster Internet Service Providers which had a location quotient of about one.

**Table 56**  
**Software and Computer Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Custom computer programming services	541511	0.13	0.17	0.04	87	\$57,770
Software publishers	511210	ND	ND	-	ND	ND
Computer systems design services	541512	0.25	0.19	-0.06	90	\$52,458
Data processing and related services	518210	0.03	0.05	0.02	13	\$26,134
Internet service providers	518111	ND	1.02	-	108	\$51,966
Computer facilities management services	541513	ND	NC	-	NC	-
Other computer related services	541519	ND	0.22	-	24	\$86,840
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.20</b>	<b>0.46</b>	<b>+0.26*</b>	<b>322</b>	<b>\$56,874</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

\* The 2001 internet service providers' location quotient was not disclosed in 2001 making the change in location quotient subject to missing data basis.

Lee County's Software and Computer Services cluster analysis information is provide in Table 57.

There were about 430 employees with an average annual pay or wage level of \$51,000. The location quotients are fairly low with most around 0.2 to 0.3. There was a large number of non-disclosure restrictions so there may be some missing data basis introduced.

**Table 57  
Software and Computer Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Custom computer programming services	541511	0.26	0.27	0.02	213	\$47,670
Software publishers	511210	ND	ND	-	ND	ND
Computer systems design services	541512	0.17	0.17	0.00	127	\$49,894
Data processing and related services	518210	ND	0.11	-	46	\$49,150
Internet service providers	518111	ND	ND	-	ND	ND
Computer facilities management services	541513	ND	ND	-	ND	ND
Other computer related services	541519	ND	.29	-	48	\$68,546
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.23</b>	<b>0.23</b>	<b>0.00</b>	<b>434</b>	<b>\$50,787</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

The regional summary of the Software and Computer Services analysis is provided in Table 58.

There were over 800 employees with an average annual pay level of about \$52,000. The location quotients were fairly low as well.

**Table 58**  
**Software and Computer Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Custom computer programming services	541511	0.20	0.23	0.02	327	\$49,857
Software publishers	511210	ND	ND	-	0	-
Computer systems design services	541512	0.18	0.17	-0.01	231	\$51,872
Data processing and related services	518210	0.01	0.08	0.07	59	\$44,079
Internet service providers	518111	ND	0.98	-	0	\$50,707
Computer facilities management services	541513	ND	ND	-	0	-
Other computer related services	541519	ND	0.28	0.12	84	\$69,674
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.19</b>	<b>0.31</b>	<b>0.12</b>	<b>815</b>	<b>\$52,171</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.310 Transportation and Warehousing**

The Transportation and Warehousing Cluster is defined using the NAICS codes provided in Table 59. This includes scheduled and nonscheduled air transportation, bus service, and water transportation along with warehousing.

**Table 59**  
**Transportation and Warehousing Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Transportation and Warehousing Sectors</b>
1	4811	Scheduled air transportation
2	4812	Nonscheduled air transportation
3	493	Warehousing and storage
4	4831	Sea, coastal, and Great Lakes transportation
5	4832	Inland water transportation
6	485113	Bus and other motor vehicle transit systems
7	485210	Interurban and rural bus transportation
8	488490	Other support activities for road transport.
9	3366	Ship and boat building

The analysis of Charlotte County's Transportation and Warehousing Cluster does not provide much information as shown in Table 60. Most entries are either no company (NC) or non-disclosure (ND). Much of the region's employment for air transportation will be at the major regional airports which are in Lee and Sarasota Counties.

**Table 60**  
**Transportation and Warehousing**  
**Charlotte County Cluster Data**

Sub-cluster	NAICS Code	2001 Employment Location Quotient	2004 Employment Location Quotient	2001 to 2004 Change in Employment Location Quotient	2004 Employment	2004 Average Annual Wage
Scheduled air transportation	4811	NC	NC	-	NC	-
Nonscheduled air transportation	4812	NC	ND	-	ND	ND
Warehousing and storage	493	0.03	0.03	0.00	5	ND
Sea, coastal, and Great Lakes transportation	4831	NC	NC	-	NC	-
Inland water transportation	4832	ND	ND	-	ND	ND
Bus and other motor vehicle transit systems	485113	NC	NC	-	NC	-
Interurban and rural bus transportation	485210	NC	NC	-	NC	-
Other support activities for road transport.	488490	NC	ND	-	ND	ND
Ship and boat building	3366	ND	ND	-	ND	ND
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.03</b>	<b>0.03</b>	<b>0.00</b>	<b>5</b>	

RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data **NC**: Not Calculable (does not exist or zero); **ND**: Not Disclosable

**Cells shaded this color** indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.

Information about Collier County's Transportation and Warehousing Cluster is provided in Table 61. This showed about 90 employees with an average annual pay level of about \$42,000. Certainly, some of the nonscheduled air transportation will be air charters from the Naples airport.

**Table 61  
Transportation and Warehousing  
Collier County Cluster Data**

<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Scheduled air transportation	4811	ND	ND	-	ND	ND
Nonscheduled air transportation	4812	ND	1.43	-	62	\$45,295
Warehousing and storage	493	0.02	0.04	0.02	24	\$36,838
Sea, coastal, and Great Lakes transportation	4831	ND	ND	-	ND	ND
Inland water transportation	4832	NC	NC	-	NC	-
Bus and other motor vehicle transit systems	485113	ND	ND	-	ND	ND
Interurban and rural bus transportation	485210	NC	ND	-	ND	ND
Other support activities for road transport.	488490	NC	ND	-	ND	ND
Ship and boat building	3366	0.56	0.05	-0.52	7	\$29,085
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.51</b>	<b>097</b>	<b>ND</b>	<b>93</b>	<b>\$41,892</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Can not disclose.						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Information about Lee County’s Transportation and Warehousing cluster is provided in Table 62. The employment was about 400 and the average annual pay level was about \$32,000. One might expect a missing value basis given the large number of non-disclosures (ND) included in the table.

**Table 62  
Transportation and Warehousing**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Scheduled air transportation	4811	ND	ND	-	ND	\$32,851
Nonscheduled air transportation	4812	ND	ND	-	ND	ND
Warehousing and storage	493	0.15	0.15	0.00	127	\$25,886
Sea, coastal, and Great Lakes transportation	4831	NC	ND	-	ND	ND
Inland water transportation	4832	ND	ND	-	ND	ND
Bus and other motor vehicle transit systems	485113	ND	ND	-	ND	ND
Interurban and rural bus transportation	485210	2.24	ND	-	ND	ND
Other support activities for road transport.	488490	ND	ND	-	ND	\$25,022
Ship and boat building	3366	1.51	1.23	-0.28	285	\$35,125
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.32</b>	<b>0.89</b>	<b>-0.42</b>	<b>412</b>	<b>\$32,277</b>
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

Table 63 provides regional cluster analysis for the Transportation and Warehousing Cluster. This cluster does not lend itself to analysis at a regional level and in most cases at the county level due to the non-disclosure rules that accompany AWI's employment and annual wage data.

**Table 63 \***  
**Transportation and Warehousing**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Scheduled air transportation	4811	0.00	0.00	0.00	0	-
Nonscheduled air transportation	4812	0.00	0.00	0.00	62	-
Warehousing and storage	493	0.09	0.10	0.01	156	-
Sea, coastal, and Great Lakes transportation	4831	0.00	0.00	0.00	0	-
Inland water transportation	4832	0.00	0.00	0.00	0	-
Bus and other motor vehicle transit systems	485113	0.00	0.00	0.00	0	-
Interurban and rural bus transportation	485210	1.17	0.00	-1.17	0	-
Other support activities for road transport.	488490	0.00	0.00	0.00	0	-
Ship and boat building	3366	0.99	0.68	-0.31	292	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>0.82</b>	<b>0.48</b>	<b>-0.35</b>	<b>510</b>	
RERI:Florida Gulf Coast University; Source: BLS and AWI 2004 Data NC: Not Calculable (does not exist or zero); ND: Not Disclosable						
Cells shaded this color indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

\* This table should be used with extreme care since the nondisclosure (ND) issues for this cluster are significant. The assumption that the NDs are small does not hold for this cluster and this table significantly understates the employment.

### **3.311 Visitor Services**

Visitor Services is an industry cluster that includes tourism, accommodations, amusements and recreation activities. Table 65 provides a list of initial business sectors or sub-clusters included in the Visitor Services cluster.

**Table 65**  
**Visitor Services Cluster**

<b>Number</b>	<b>NAICS Code</b>	<b>Visitor Services Sectors</b>
1	483	Water transportation
2	485	Transit and ground passenger transportation
3	487	Scenic and sightseeing transportation
4	488	Support activities for transportation
5	532	Rental and leasing services
6	713	Amusements, gambling, and recreation
7	721	Accommodation

Table 66 provides a detailed summary of the Visitor Services cluster including sub-clusters.

Charlotte County Visitor Services have location quotients well above one indicating that it is a traded industry cluster. The location quotient has fallen from 2001 to 2004. This was expected due to a hurricane that damaged the local economy and infrastructure. There were about 1,600 employees in this cluster in 2004 with an average annual pay level of about \$19,000. Tourism in southwest Florida has been very strong given the amenities such as sunshine, beaches, golf courses, and recreation activities. It is interesting to note that the location quotient for the sub-cluster, transit and ground transportation is very low. This indicates relative to the nation that Charlotte County has a much smaller percent of employees engaged in this activity. There may be a several reasons for this lower employment. First, the transportation employees may be located in other counties that are served by

larger airports. Second, Charlotte County does not have the mass transit systems that many of the more densely populated area have resulting in a lower level of employment in the transit and ground passenger sub-cluster. This could be an area for further study.

**Table 66  
Visitor Services**

<b>Charlotte County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Water transportation	483	ND	ND	-	ND	ND
Transit and ground passenger transportation	485	0.06	0.09	0.03	10	\$17,664
Scenic and sightseeing transportation	487	2.58	2.83	0.25	23	\$14,604
Support activities for transportation	488	0.14	0.24	0.09	38	\$32,497
Rental and leasing services	532	ND	0.59	-	115	\$25,315
Amusements, gambling, and recreation	713	2.12	1.74	-0.38	722	\$18,070
Accommodation	721	1.28	1.28	0.00	690	\$18,051
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.72</b>	<b>1.43</b>	<b>-0.29</b>	<b>1,598</b>	<b>\$18,874</b>
RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b>	indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

The Collier County Visitor Services information is shown in Table 67. The very high location quotients indicate that Visitor Services employ a much higher percent of employees in this cluster relative to the national average. There were about 10,200 employees in this cluster in 2004 with an

average annual pay level of about \$30,000. The sub-cluster 2004 average annual wage varied from about \$19,000 to \$37,000. Only 131 employees were reported to be in the transit and ground passenger transportation sub-cluster with a 2004 location quotient of about 0.34 which is a low level compared the national percentage of employment in the sub-cluster.

**Table 67  
Visitor Services**

<b>Collier County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Water transportation	483	ND	ND	-	ND	ND
Transit and ground passenger transportation	485	0.53	0.34	-0.19	131	\$19,110
Scenic and sightseeing transportation	487	3.94	4.98	1.04	135	\$25,516
Support activities for transportation	488	0.35	0.19	-0.16	100	\$37,200
Rental and leasing services	532	ND	0.58	-	374	\$37,454
Amusements, gambling, and recreation	713	3.73	3.66	-0.07	4,987	\$31,389
Accommodation	721	2.50	2.52	0.02	4,522	\$27,073
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>3.04</b>	<b>2.99</b>	<b>0.04</b>	<b>10,249</b>	<b>\$29,528</b>

RERI:Florida Gulf Coast University: Source: BLS and AWI 2004 Data **NC:** Not Calculable (does not exist or zero); **ND:** Not Disclosable

Table 68 provides a breakdown of the Visitor Services Cluster for Lee County. Visitor Services would be classified a cluster based on its very high location quotient values. Table 68 shows that there were about 10,500 employees in this cluster in 2004 with an average annual wage of about

\$25,000. The transit sub-cluster had a fairly low location quotient. As discussed earlier, this could be a topic for further study.

**Table 68**  
**Visitor Services**

<b>Lee County Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Water transportation	483	ND	ND	-	ND	ND
Transit and ground passenger transportation	485	0.40	0.23	-0.17	136	\$ 23,393
Scenic and sightseeing transportation	487	2.34	2.00	-0.35	83	\$20,095
Support activities for transportation	488	0.48	0.48	0.00	397	\$32,066
Rental and leasing services	532	1.65	1.67	0.01	1,647	\$27,858
Amusements, gambling, and recreation	713	2.03	2.23	0.20	4,664	\$26,262
Accommodation	721	1.22	1.29	0.07	3,561	\$21,972
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>1.59</b>	<b>1.73</b>	<b>0.14</b>	<b>10,488</b>	<b>\$25,190</b>
RER:Florida Gulf Coast University: Source: BLS and AWI 2004 Data <b>NC:</b> Not Calculable (does not exist or zero); <b>ND:</b> Not Disclosable						
<b>Cells shaded this color</b>	indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.					

The southwest Florida regional data for Visitor Services is shown in Table 69. The regional location quotient was about 2.2 indicating that Visitor Services is a traded cluster. There were over 22,000 employees with an average annual pay of about \$27,000. The location quotient for Transit and ground passenger transportation for the region was low in 2004 with a value of only 0.26 percent.

**Table 69**

**Visitor Services**

<b>Southwest Florida Coastal Counties Cluster Data</b>						
<b>Sub-cluster</b>	<b>NAICS Code</b>	<b>2001 Employment Location Quotient</b>	<b>2004 Employment Location Quotient</b>	<b>2001 to 2004 Change in Employment Location Quotient</b>	<b>2004 Employment</b>	<b>2004 Average Annual Wage</b>
Water transportation	483	ND	ND	-	ND	ND
Transit and ground passenger transportation	485	0.41	0.26	-0.15	277	\$21,161
Scenic and sightseeing transportation	487	2.94	3.14	0.19	241	\$22,608
Support activities for transportation	488	0.39	0.35	-0.04	535	\$33,056
Rental and leasing services	532	0.87	1.42	0.55	2,136	\$29,401
Amusements, gambling, and recreation	713	2.65	2.88	0.23	10,373	\$28,157
Accommodation	721	1.68	1.72	0.04	8,773	\$24,293
		-	-	-	-	-
		-	-	-	-	-
		-	-	-	-	-
<b>Total for Cluster</b>		<b>2.01</b>	<b>2.19</b>	<b>0.18</b>	<b>22,335</b>	<b>\$26,729</b>
RERI: Florida Gulf Coast University; Source: BLS and AWI 2004 Data <b>NC</b> : Not Calculable (does not exist or zero); <b>ND</b> : Not Disclosable						
<b>Cells shaded this color</b> indicate either no entry or incomplete data for that Sub-cluster. Total in that column ignores shaded cells.						

### **3.4 Concluding Thoughts**

This study has been a first step in defining and reviewing the industry clusters in Southwest Florida. Changes in industry and cluster employment and average annual pay levels are expected over time so periodic updates of the analysis are recommended. Industry cluster analysis adds another dimension to company analysis by examining not only at traditional industry strengths, weaknesses, opportunities, and threats but also at the importance of various industries and institutions to each other.

Economic development offices in Southwest Florida and throughout the country have been working to improve the diversity of their region and increase wealth in the region by supporting higher paying occupations and industries. In response to the need to better target firms and to address infrastructure and business environment issues, policymakers and economic development organizations have helped to form industry and cluster advisory groups to work with the communities and act as advisors. In addition, communities have used interviews and surveys of particular industry clusters to better understand the important issues facing the companies and the clusters.

This study has helped define the existing clusters and their pay levels but has not explored the reasons why higher paying industrial clusters have not located in our region. Continuing research on the location factors, strengths, barriers, infrastructure needs, weaknesses, and opportunities will need to be undertaken to address these cluster development questions.

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