

# Miami International Airport Area: Location, Transshipment, Location

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## 1 ABSTRACT

This paper presents a theoretically driven mapping and statistical analysis of the physical, economic, social, and organizational milieu in and around the Miami International Airport sub-metropolitan employment center aimed at assessing its current and future economic viability. Throughout, emphasis is placed on both its context within the South Florida metropolitan area and its own internal dynamics.

## 2 INTRODUCTION

Multiple employment centers exist in the modern polycentric metropolis (cf. Bogart, 2006, 1998). Prosperi (2008a) has examined the South Florida metropolitan area for such employment centers and has found that the first and fifth largest such concentrations are found in and around the Miami International Airport (MIA). This paper focuses on the MIA area itself, the single most concentrated employment center in the South Florida metropolitan area. The overall context in this research is to examine how such sub-metropolitan employment centers both share regional context and local response. Here, there is a change in the scale of analysis – from identifying points in metropolitan space to examining the internal structure of those points. The specific objective is to examine the internal structure of MIA area in terms of physical, economic, social, and organizational attributes.

The South Florida metropolitan area consists of over 5.4 million permanent residents, spread out over a linear development pattern of roughly 110 miles long and between 8 and 20 miles wide. There is some confusion in the literature about whether or not the region is monocentric, polycentric with multiple nodes, or edgeless (Lang, 2003). Nevertheless, the study area as operationally defined for this study consists of US postal zip codes 33122, 33126, 33166, 33172 and 33178, see Figure 1. The airport itself is located in the lower right hand portion of the triangular shaped node.

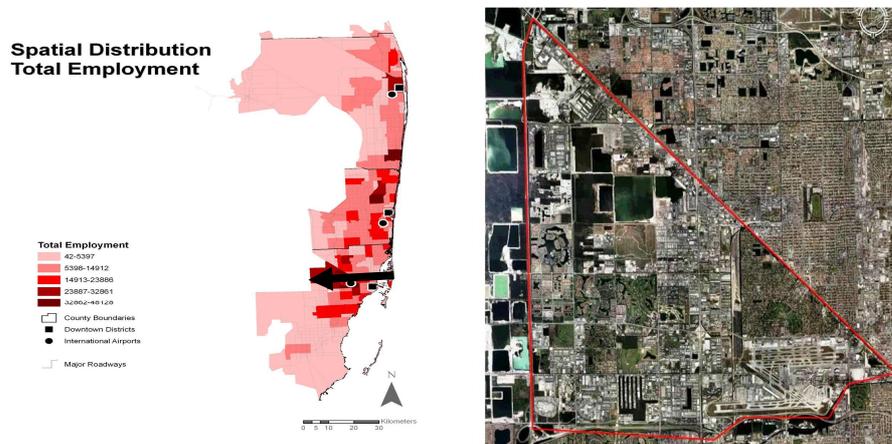


Fig. 1: The MIA Employment Node

This paper is organized as follows. In the next section, we state the research problem and describe the research methodology. Results are presented next in terms of four areas: physical, economic, social, and organizational. The final section contains conclusions and speculations.

## 3 RESEARCH PROBLEM AND METHODOLOGY

The overall problem was carried out as part of a larger project that examined strategic responses of such sub-metropolitan centers within a metropolitan context (Prosperi et al., 2008). The study was accomplished in three phrases. First, a team of researchers from Florida Atlantic University developed research protocols for each of the four dimensions of endogenous description. Second, a team of researchers from Florida Atlantic University and the Technical University-Wien conducted a week long study of the area, both “at the desk”

and “in the field.” The final phase involved conceptual and analytical responses, culminating in written profiles. Described below are highlights of the research protocol for each of the four dimensions.

The preliminary physical analysis is based, first of all, on the operational definition of the MIA sub-metropolitan employment center and thereafter on captured digital views utilizing Google Earth and Microsoft Virtual Earth as well as other maps and written documents, including comprehensive plans of all political units. The jurisdictional issues became apparent. Within the study area are found entireties or portions of unincorporated Miami-Dade County, the City of Miami, City of Doral, the City of Miami Gardens, Town of Miami Springs, and the Town of Medley.

The initial economic analysis relies on principles of economic base theory and location quotients as well as on the notion that airports are attractors of economic activity (Prosperi, 2007, *among others*). Total estimated non-government employment in this node in 2005 is 161,973, which represents a total increase of 4% over the six year period. Using data from the US Department of Commerce, preliminary analysis based on NAICS categorization of industrial structure revealed that the MIA sub-metropolitan employment node as a whole had “comparative economic advantage” in manufacturing, wholesaling, transportation and warehousing, and ‘administrative, support, and waste management’ industrial sectors, was severely deficient in retail, health and social services, accommodation and food services, and moderately deficient in ‘professional, science, and technical services.’ This initial tri-part conclusion speaks volumes for the “aerotropolis as creative innovation center” dream, at least for mature airports.

Moreover, there is evidence that there are distinct employment patterns *within* the set of zip codes that contain and surround MIA. For example, in zip code 33122 (located immediately west of the airport) the major industrial sectors are wholesaling and ‘transportation and warehousing.’ Interestingly, these two sectors have flip-flopped over the 1999-2005 time period, with primary emphasis on the former in the earlier period and primary emphasis on the latter in the latter time period. Simply put: transportation and warehousing activities are taking over from wholesaling in this zip code; although these remain the primary two sectors. In zip code 33126 (which contains the airport proper), the dominant industrial sector is transportation and warehousing, followed by wholesaling and “administrative, support, and waste management.” Administrative support, which includes security and janitorial services, is the sector that is rising most rapidly. In fact the largest firm in this zip code is a “security” firm. There is also a slight increase in the ‘retail trade’ sectors, perhaps associated with re-vamped airport terminals. In zip code 33172, located further west but along the major E-W highway, wholesaling is the dominant industrial sector, followed closely by retail trade, and transportation and warehousing. There are two large retail malls located here. In the two northern zip codes, 33166 and 33178, there is still a concentration of transportation and warehousing, but other sectors such as wholesaling and manufacturing (33166) and construction and manufacturing (33178) are sizable enterprises. The pre-site visit data suggests a strong competition for industrial sector land uses and possibly a bid-rent curve function.

Often overlooked in the analysis of airport centered economic nodes is the socio-economics of residences and other activities. The preliminary social analysis aimed at discovering the local distributions of simple socio-economic variables such as income, race, and age that contribute to the the overall community development dialogue. These data were mapped using ArcGIS.

The organizational analysis focuses on the issue of territorial or social capital as formulated by Putnam (1993) generally, and by Van den Berg (2001) and Hodtling and Tripple (2005) in regards to economic clusters (cf. Porter, 2002, 1995) and more recently classified as territorial capital (Camagni, 2007, 2002). How territorial capital relates to sub-metropolitan employment nodes is the subject of a forthcoming paper by Giffinger and Prospero (2008). How do formal and informal governmental processes work in our study area? The preliminary work revealed the following possible stakeholders: various departments within Miami-Dade County including the aviation department; the Greater Miami Chamber of Commerce; the Beacon Council; and representatives of nearby cities. Within the five zip codes are found the cities of Miami, Doral and Virginia Gardens, the towns of Miami Springs and Medley, and most importantly, significant areas of unincorporated Miami-Dade County.

#### 4 RESULTS

As alluded to above, the MIA sub-metropolitan employment center has a big economic input in South Florida Region. Representative of this idea is the notion that 25% of companies with largest employment in South Florida are in this employment center. At the metropolitan scale, it is also worth noting that ¼ of all new jobs are created within this region.

#### 4.1 Physical Results

The centrepiece of the MIA area is the MIA proper. It occupies most of the land within zip code 33126, the remaining portion being the major east-west access road and some office parks south of it.

The other zip code areas are “connected” to the airport in different ways. Zip codes 33122 and 33172 are located west of the airport. In the closer zip code, which is just 2.2 sq miles, are found a large concentration of warehouses and transport firms. Further away, in zip code 33172, is found the Free Trade Zone and two shopping centers. The FTZ consists of 72 acres and 42 facilities (offices, showrooms, and warehouses) and employs about 1,800. One major observation is that the land resources necessary to carry out the transshipment functions associated with MIA are enormous – they take up almost as much land surface area as the airport itself. The two shopping centers are located here because of high accessibility from limited access highways. One of these malls is a traditional mid-to-high end mall; the other is an outlet.

Zip code 33166 contains the spine of an overall inverted T pattern (Prosperi, 2008b). Interestingly, along this spine that surrounds the Palmetto Expressway are “horizontal clusters” of firms in the same industrial groupings. Shown in Figure 2 are machinery, construction, and electronic parts (on the left) and transportation and transshipment firms (on the right). These uses are clearly separated. Also noticeable in these maps is the enormous linear transshipment area for trucks and rail.

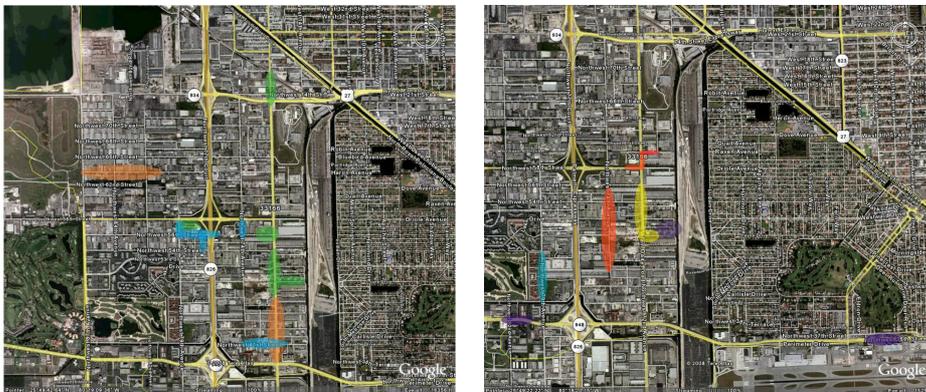


Figure 2: Clustered Concentrations of Similar Types of Firms

#### 4.2 Economic Results

The sheer size of MIA’s impact is impressive. MIA has 38,273 direct employees generating (according to their figures) an estimated 23,500 “indirect” employees. The direct employees earned over 1.6B in wages, representing an average salary of \$40,794. MIA’s top trade partners by total weight are Columbia, Chile, and Brazil; and by total value are Brazil, Columbia, and Costa Rica. Perhaps more impressive is that 85% of all flowers, 64% of all fish, and 59% of all fruits and vegetables that are imported by air to the US flow through MIA.

As evidence of the forementioned “competitive” advantage of the MIA area in wholesaling, warehousing and transport, and ‘administration, support, and waste management’, field investigation revealed 42 freight transportation firms, 19 courier firms, 37 flower wholesalers, 21 electronic parts and equipment firms, 18 security firms, and 20 janitorial firms.

#### 4.3 Social Results

The overall resident population of the MIA sub-metropolitan employment center in 2005 is estimated to be approximately 121,000, which is growth of less than 1% over the past five years. Not surprisingly, population densities (defined at the zip code level) increase (on the east-west axis) away from the airport. Densities north of the airport are appreciably lower, and markedly lower as distance from the industrial zone increases.

Incomes and average home values in the east-west axis zip codes (33126, 33172) are lower than the state average while the opposite effect is noticeable in the northern zip codes. Finally, while the overall population has a significant Hispanic population and is of dominant Cuban descent, there is a noticeable Columbian community in zip code 33166, a noticeable Nicaraguan community in zip code 33172, and a noticeable Venezuelan community in zip 33178 (cf. Prosperi, 2008b).

#### 4.4 Organizational Results

To assess the focus or diversity of strategic positioning in the MIA sub-metropolitan center, interviews were held with both airport officials as well as representatives of major economic development agencies. In addition, we sampled sentiment among the local jurisdictions that abut the airport area. Throughout, there is a general consensus: Miami is an international city, has an international airport, and location.

The airport itself is operated and managed by the Miami-Dade county government through its Department of Aviation. It is physically located in an unincorporated area of Miami-Dade county. Airport officials are proud of the very high rankings of both passenger and cargo positions within the [very important for government officials] hierarchy of airports. They also point the importance of location, location, and location – being the largest US airport that caters to Latin America and the Caribbean. They point to being “established” with advanced procedures that promote efficiency and effectiveness. They point to being a major transshipment point for flowers and food (fish, fruits, and vegetables) from Latin America. On the other hand, ground airport operations associated with warehousing and transport create ongoing transportation conflicts in the immediate area. Airport officials are working on a plan to connect the cargo portions of the airport to distribution centers without using surface streets; a tunnel is currently under construction east of the Palmetto Expressway.

Two “economic development agencies” were interviewed. The Miami Free Trade Zone is an agency of the Greater Miami Chamber of Commerce, who holds its license. The FTZ relies on a bilingual, educated workforce and a vibrant financial community that they find is abundant within the immediate and surrounding area. Moreover, there is a connection between the “air” cargo and “sea” cargo that flows out of the Miami Seaport. The Beacon Council is a public-private partnership founded in 1986 to promote economic development throughout South Florida (but mostly Miami-Dade and Broward counties). The conversation with Beacon Council officials focuses on target industries (banks, airport, bioscience, IT, and finance), on the importance of multi-culturalism in all of those sectors, and on the future of the region. Their position on planning is quite simple: “there are too many municipalities and no planning. You have to build on the infrastructure which is already there.” This position could sound like either good regional design and/or Robert Moses imperialism.

Finally, the MIA airport exists within a fairly dense urban fabric. As an “older” airport it has fought battles over the years reflecting the need to expand. Some communities, like Miami Springs, used to be the old “airport cities” containing residences for airport workers. The size of the airport operations today clearly outstrip the ability of a single community to provide residents. More often, the discussion is about trucks and noise. Despite building walls and tunnels to minimize disruption and noise, the debate continues. Some communities even work at cross purposes (the City of Doral has closed certain arterial lanes to trucks). The current situation could best be described as “ongoing.”

## 5 CONCLUSION

The Miami International Airport sub-metropolitan employment center is clearly the most important economic node within the South Florida urban region. Together, the area is responsible for over 160,000 non-governmental employees, a number that continues to grow. The addition of government employees associated with the airport operations and federal security requirements merely adds to this significant total.

MIA is a mature airport and is proud of its long term history of accomplishments in both passenger and cargo operations. But, on the other hand, it is simply that: a passenger and cargo facility. The recent buzz about airports being centers for innovation in advanced producer services (e.g., any Kasarda or “aerotropolis” reading) is not applicable in the MIA area. This is old-fashioned “get the goods here and get them transshipped efficiently and effectively by air, sea, rail or road.” This may be a warning for the more anticipatory normative types suggesting airports as centers of bio- or high- tech clusters. The location of the metropolitan area and its economic base go a long way in determining functions at the airport. Here, the simple location of Miami to Latin American and the Caribbean are of enormous importance. The development of a community that is bilingual is equally important. The overall lesson is contextual – pay attention to it!

Moreover, if air is really the mode of choice for an increasing bundle of goods, then the need to expand to accommodate demand is manifest. The development of physical infrastructure projects – in this case tunnels,

cargo facilities, links between air and sea, etc., are examples of what designers called “generative” works, that is, improvements with long life expectations and long term impacts. The simple need for these types of projects to increase competitiveness should not be overlooked.

Yet, despite the obvious locational advantage, the development of territorial capital seems hindered by the same aspects that inhibit effective intergovernmental operations anywhere. Although there is some consensus on targeted industrial sectors (and while some are really only hopeful ‘branding’), the inability of the agencies and communities to resolve differences persists. Responses ranged from the Beacon Council’s “build on what is there” to the desires of nearby communities for freedom from noise and truck traffic. There is clearly work to be done.

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