# Retail Management-Performance Measurement Analysis and Revenues in Airports

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*Abstract-* The significance of non-aviation revenues, especially from retail outlets, has grown greatly. For many airports today non-aviation revenue has become as important as traditional aviation earnings. Then the natural question is "how to organize retail operations to satisfy the airport's targets?" This research specifies this question as follows: "If the retail revenue is taken as a measure of performance, which airport retail management structure performs better?" Thereby the aim of this study is to find out the character of a relationship between different structures of airport retail management organization and the level of retail revenues. The additional task is to distinguish these relationships between airports of different size and capacity.

*Index Terms*- Retail outlets, Non-aviation revenues, Foctors Analysis, Retailing structure, Measure of performance analysis

## I. INTRODUCTION

The last decades saw significant transformations in the airport industry. Changes in the ownership structure, the understanding of an airport's mission and the influence of new market players (for instance,low cost carriers or shopping malls in the airport) have modified the priorities of airport management and led to an increased focus on non-aeronautical revenue. This has happened because of two simultaneously working factors: newly appeared barriers to aeronautical revenues' level increase and total change of airport's retail image.

Factors: I) Considering the first factor one needs to mention two main points.

- Firstly, the trend of increased passenger and cargo traffic creates the problem of congestion in airports, which by-turn sets upper limit on aeronautical revenues or demands to make considerable investments in airport's expansion.
- The development of low cost carriers and their grown popularity have decreased negotiation power of airports.

II) The second factor appeared as soon as development of airport retail had overcome a threshold when the very idea of airport retail business had been changed from supplemental for the aeronautical activity (coffee machines and newspapers kiosks to ease passengers' discomfort while waiting for a plane) to a separate one with great potential of revenue.

## II. PERFORMANCE OF DIFFERENT RETAIL MANAGEMENT STRUCTURES.

Thereby the aim of this study is to find out whether there is a relationship between different types of retail management organization and the level of retail revenues obtained and what form it has. The additional task is to distinguish these relationships for the following kinds of airports: large hubs (those which process at least 1.5% of revenue passenger boarding's annually), medium hubs (those which process between 0.25 percent and one percent of revenue passenger boarding's annually), small hubs (which process between 0.05 percent and 0.25 percent of 6 revenue passenger boardings annually) and non-hubs (those which process more than ten thousand (10000) but less than 0.05 percent of revenue passenger boardings annually).

## III. MANAGEMENT STRUCTURES OF RETAILING:

- ❖ **Multiple operators:** Commercial space is leased to retailer operators, or concessionaires (retailer with the right to sell goods in a particular airports), which are obliged to develop, finance, and manage concession facilities. The airport collects rental fees in term of fixed or stepped percentage rates from gross sales or square based rate.
- ❖ **Prime operator:** Some airports award contracts for particular categories of concessions, whereby the principal concessionaire develops and operates a substantial portion of the space. The main advantage is that the airport can take advantage of the know-how of the master concessionaires in their sales, merchandising, and marketing. A disadvantage is the resulting lack of individuality in the operations of the various concessions;
- ❖ **Wholly-owned subsidiary:** Under this structure the airport hires off a retail activity from the airport authority to a subsidiary and creates a separate corporate identity, thereby attracting more experienced staff and managers;
- ❖ **Direct operation:** Airports directly control all retail operations including running commercial outlets. It is used in cases, where commercial activities require limited commercial skills or they involve a level of investment, which retail operators (or concessionaires) are not ready to undertake. The main problem with this structure is most likely an insufficient commercial knowledge of airports' staff;

❖ **Joint venture:** To attract investments in commercial space development the airport and its partners can create a joint venture company. This allows airport to save part of operational control and not to bear all the risk on itself;

❖ **Fee management contract (or Management Company):** One or more management companies are hired to operate concessions, and the airport authority compensates the management company the monthly fees and a percentage of the net operation incomes derived from the concession operation. The airport authority is in charge of financing, providing space, capital improvement, facility design, development and updates, developing operation standards, keeping inventory, tenant relationship, and financial accounting of profitability;

❖ **Developer approach:** A commercial developer can be hired to design and develop the concession facilities. The developer provides the required financing and administration of all phases of concession operation as well as subleasing of spaces to qualified retailers. The developer can lease the commercial space from the airport or to privatize it.

## IV. BACKGROUND THEORY: AIRPORT RETAIL VERTICAL (VALUE) CHAINS

To understand distinctive characteristics of different retail management structures, at first, we need to overview the underlying theory. The theory of vertical chains in this chapter is mainly taken from (D. Besanko, D. Dranove, M. Shanley, S. Schaefer, 2007 "Economics of strategy").

**Definition: Vertical (value) chain:** The process that begins with the acquisition of raw materials and ends with the distribution and sale of finished goods and services is known as the vertical chain. Early steps in the vertical chain are upstream in the production process and later steps are downstream. But sometimes small shops don't stock products for which they are unable to obtain favorable wholesale prices.

### Complementarities and Strategic Fit

This very general idea can refer to many processes which overall can be described as a strategy. For example, higher outlets' concentration makes their maintenance and supply cheaper. Also some types of outlets can serve as magnets of customers for other types of outlets which should be taken into account when planning a retail mix.

### Make-or-buy decision

Among the management structures of this study "Prime operator", "Multiple operator" and "Management company" represent outsourcing decisions (or "to buy") for only the second stage of the vertical chain, whereas "Developer" approach represents outsourcing for both stages. "Direct control" approach is a fully vertically integrated option (or "to make") and "Hybrids" structures can be involved in every stage.

### Asset ownership and vertical integration

GHM (Grossman, Hart, Moore) model establishes that the form of integration affects the incentives of parties to invest in relationship-specific assets. By having control over other unit's assets, a unit has a better bargaining position when it negotiates with the other unit over the operating decisions that they could not contract on.

The direct control approach is found to be the lowest preferred method of managing airport concessions from every aspect of performance. The following managements structures were analyzed:

1. Airport directly;
2. Prime operator (or master concessionaire);
3. Developer;
4. Airport/Operator hybrid;
5. Other/developer hybrid.

The main results are the following:

- In general developer structure outperforms others;
- Distribution of outcomes for developers was much broader. (difference between 4th a 1st percentiles of "sales per EP" measure);
- Dynamics of efficiency growth is comparably high for developers;
- Hybrids perform better that alone (than just airport directly, prime operator or developer).

According to the research direct control of concession operations should remain limited for three main reasons:

- Direct operation requires a critical size (traffic, surface) to ensure return on investment.
- Direct operation represents an opportunistic move and cannot result in a long-term diversification strategy.
- The ability of direct operation to generate higher revenues and margins through more competitive prices has still to be proven. (V. Bamberger, A. Bettati, S. Hoeffinger, T. Kuruvilla, V. Wille (2009): "Mastering airport retail")

According to the authors' opinion operators' local know-how and the way they leverage it to propose the highest concession fees is no longer as important as it has been; airports are increasingly looking for operators who can demonstrate financial robustness, strong offer flexibility, international know-how and high-quality operational performance.

### Research

The main part of this study tries to compare the performance of retail management structures through estimation of their effects on retail revenue. For the beginning we will explain why "retail revenue per enplaning passenger" can be a measure of performance and under which assumptions.

### Performance Measurement

The primary target of such airports – perform their transportation function. Hence, deciding which management

structure to implement, the airport is guided by other performance measures than profit it can earn. For example, these could be – product mix which is offered to passengers and which increase their satisfaction of using a particular airport or investment's size a partner can spend for development of commercial space and so on. In these cases, anyway, the airport should be interested in values that particular management structures can create. Thereby estimation of their performance still makes sense, giving to airports secondary arguments.

To figure them out, let's look at general profit functions of airports using different structures:

**1. In cases of leasing commercial space to operators or a developer profit is a sum of different types of lease payments:**
**πlease = (Retail revenue)\*rsales + (Leased space)\*rspace + MAG – Investments (1)**

Investments here are related to the development of commercial space, which can be made fully or partially by airports.

**2. In case of Direct control structure, the profit looks like:**
**πdirect = (Retail revenue)direct – (Variable Costs)direct – Fixed Costs (2)**
where Fixed Costs contain investments in commercial space development.

**3. In case of management company structure:**
**πmanagement = (Retail revenue)management – (Management Fee + Other variable costs) – Fixed Costs (3)**

To represent the profit our proxy measure must be highly correlated with it. So for "retail revenues" to become a performance measure the following assumptions must hold:

1. Retail profitabilities of airports which belong to the same retail management structure must
be equal;

2. Retail profitabilities of airports with different retail management structures must be equal.

The acceptance of the first assumption for the first case of leasing the space is comparatively easy and doesn't distort the reality much. The reason underlies in the lease payment structure which turns out to be pretty stable for airports. (According to Airport retail study 2006/2007 by Moodie)

To make the second assumption without a large distortion of reality, we must believe in some kind of an effective market of airport retail. This means that following the aim of maximizing retail profit the airport should choose the management structure which is most profitable for it. But as far as we observe different management structures in airports, all of them can maximize airport's profit only in one case – when their profitability for airport is the same.

After we have made assumptions 1 and 2, we can consider retail revenue as a good proxy of airport's profit (because of high correlation between them) and hence, we can use retail revenue as measure of retail management performance.

We use the modification of retail revenue, namely, "Retail revenue (or sales) per enplaning passenger" to clear the performance measure from positive effect of various levels of passenger capacities in airports. This gives us more qualitative characteristic, which allow to compare airports, completely different by size. These measures along with "Retail revenue per sq. foot" are common in the related research literature. Enplaning passengers are taken into account instead of total passengers, because most of the retail revenue is generated by passengers while waiting for departure and only insignificant amount is generated by deplaning passengers. Transferring passengers who wait in the airport for the next flight are considered as half enplaning and half deplaning. Hence, such a measure, scaled by enplaning passenger, is more accurate and informative.

We use total revenue, because there is no point in considering retail management structures' effects on revenues of specific divisions, such that Food & Beverage, Specialty retail, News / Gifts, Duty free and General services, presented in the database, because we are not provided with information about cases, where airports assign most suitable management structure for every division. If such cases exist, they might belong to a Hybrid structure, according to the classification of ARN Factbook.

### Developer related

1. Large investments in retail space development (which are an example of indivisibilities or sunk costs) developer has an opportunity to exploit economies of scale and scope. To do that and to return those investments the quantity and range of products sold and services provided should be as high as possible, hence the revenue's level is also supposed to be higher in comparison with no-specific-investments cases.

2. Unified design & development of the whole commercial area (using know-how) developer can benefit from engineering principles associated with the "cube-square rule;

3. The large the scale of business of a developer the more benefits he can extract also from economies of learning;

4. Having vast experience in designing commercial space, developers can benefit from complementaries and strategic fit.

5. As a representative of an outsourcing option for an airport, developers are subject to the discipline of the market and must be efficient and innovative to survive.

6. According to GHM (Grossman, Hart, Moore) model developers which privatize (not lease) retail space in the airport has better bargaining position over operating decisions and as a result can capture more of the economic value created by the transaction.

7. Developed market of private developers in North America make us believe in their experience which should positively affect retail revenues;

### Prime operator structure in large hub group related

8. To obtain discounts from suppliers operators should by in bulk, this motivates them to expand their scale of business – to serve many airports and to sell as much as possible in every airport.

9. To exploit economies of learning (which is an example of increased productivity of variable inputs) and hence economies of scale, operators have to expand their business.

10. Selling more, cost of inventories (which is proportional to the ratio of inventory holdings to sales) decreases and profitability level grows;

11. Unified development of outlets prime operator can benefit from engineering principles associated with the "cube-square rule or complementaries and strategic fit of facilities (but less than developer who is in charge of the whole commercial area development);

12. As far as operators represent the market, they should be innovative and efficient to survive. This might positively reflex in retail revenues;

13. This structure is also involved in large investments in commercial area development and tend to target large revenues to cover them and to exploit economies of scale and scope, but airport has less incentives to do that, because it has other sources of income, mainly aeronautical revenues;

14. In contrast with large operators or developers airports can't expand their business beyond their own territory, so even for airports with critical mass direct structure limits economies of scale, scope;

15. Airport can benefit from unified design and development of commercial area using engineering principles associated with the "cube-square rule, but in most cases they don't have know-how, unless services of consultants are used;

**Multiple operators structure related**
16. Same effects as for prime operator but weaker;

**Management company**
17. Theory doesn't point on any significance positive effects, except those, general for outsourcing options. Firstly, this structure must lead to a decrease in agency and influence costs. And secondly, management companies are supposed to be efficient and innovative to survive in the market.

**Hybrids**
18. Successfully organized hybrid structure, which represents a mixture of different structures, is supposed to show many positive effects on retail revenues from those listed above. So they can appear in every place of performance ranking.

## V. CONCLUSION

To analyze the effect of airport retail management structures on retail revenue two approaches are applied, statistical analysis and econometric modeling. The main problem which this study faced is a lack of data. A lot of missing values made us to drop many airports out from the research. This is most likely the reason of discovering only three significant effects of airport retail management structures on retail revenue. They are:

- Positive effect of Hybrid structure in large hubs;
- Negative effect of Direct control in large hubs

- Negative effect of Prime operator in medium hubs

In spite of the fact that it's not enough to constitute the comprehensive answer on the research question of this study "If the retail revenue is taken as a measure of performance, which airport retail management structure performs better?", it's still can help airports' authorities to narrow the range of options to take into account when deciding how to organize their retail operations. For future research it would be useful to re-estimate the influence of management structures on retail revenues using larger sample of airports from North America and try to discover some new significant effects. Moreover, similar studies must be carried out with airports from other regions. The differences between aeronautical and retail industries in USA, Europe, Asia and etc. are very significant, and the composite resulting effect of these industries' differences is hard to predict at this stage.

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