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Philipp Degens

Portland State University

M. Hossein Haeri

Portland State University

James G. Strathman

Portland State University

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THE MARKET FOR CONVENTION FACILITIES

by
Philip Degens
M. Hossein Haeri
and
James G. Strathman

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Center for Urban Studies
School of Urban and Public Affairs
Portland State University
Portland, OR 97207-0751
(503) 725-4020
(503) 725-5199 FAX
<http://www.upa.pdx.edu/centers.html#CUS>

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ABSTRACT

Conventions, trade shows and meetings represent an industry of considerable size in the United States. In a 1984 survey, the International Association of Convention and Visitors Bureaus estimated a total of 20.5 billion dollars of annual expenditure generated by 54.3 million delegates nationwide. Despite its economic importance, the industry has received little analytical attention in the literature on tourism. In this paper we develop and estimate a model of demand for metropolitan convention facilities. Our results suggest that metropolitan convention activity is sensitive to both cost and attraction-related factors.

THE MARKET FOR CONVENTION FACILITIES

Introduction

Convention and trade show activity represent a rapidly expanding segment of the travel market in the United States. The International Association of Convention and Visitors Bureaus estimates that the number of convention goers in the country increased from 43.3 million in 1981 to 59.3 million in 1986, representing an average annual growth rate of nearly 6.5 percent. The growth in convention activity during this period, in turn, has resulted in greater competition among metropolitan areas seeking to capture larger shares of this segment of the travel market. The predominant metropolitan strategy in the "battle for delegates" endorses the creation of convention space either through construction of new convention centers or expansion of existing facilities.

Convention centers generally are not economically viable enterprises in their own right. Their direct revenues are rarely commensurate with debt service costs and operating expenses. However, their contributions to local economies in terms of the indirect spending effects of delegates are often reported to be substantial. Thus convention centers are frequently rationalized in terms of their indirect role in the metropolitan economic development process.

A major assumption inherent in the predominant convention facilities development strategy - that the supply of these facilities can be counted on to generate a demand for them - may be considered effective only to the extent that a metropolitan area also possesses other visitor-attracting

amenities and resources. Although the existence of adequate physical capacity is a necessary condition for attraction of conventions, the level of convention activity is ultimately determined by costs to sponsoring organizations, locational factors and other place-specific attributes that define the market potential of a metropolitan area.

This paper explores various factors influencing the metropolitan convention market, and develops a framework for analysis of local potential for attracting conventions. The study represents a contribution to convention facility planning in terms of identifying criteria that can be applied to strategic evaluation of metropolitan convention-site development.

The Conceptual Framework

Conventions, meetings and trade shows represent structurally diverse activities with important institutional, economic and geographic aspects. The institutional aspects of these activities pertain to factors influencing the manner in which associations and sponsoring organizations select locations to hold their conventions. These factors, such as systematic rotation policies, membership structure and regional concentration are generally not amenable to empirical analysis, and are thus not considered here. The present analysis focuses on the economic and area determinants of metropolitan convention activity, and develops and estimates a model of demand for convention space.

Demand for convention facilities in a metropolitan area depends in general on the ability of the area to attract conventions. The attractiveness of an area for conventions and trade shows is determined largely by the same

location-specific factors that promote tourism. Broadly defined, these factors include costs, environmental and climatic amenities, recreational resources and entertainment facilities. Conventions, meetings and trade shows, however, also feature unique functional characteristics that distinguish them from tourism in two fundamental respects. First, they are activities of a formal and organized nature that are sponsored, and usually financed, by professional membership organizations. Second, they involve large numbers of participants, typically from a multitude of geographic origins. As a result, the level of convention activity is expected to be determined by three categories of area-specific attributes: 1) costs; 2) market potential; and 3) geographic accessibility. Expressing the relationship in analytical form, we have:

$$LCA = f(\underline{A}, \underline{B}, \underline{C}), \quad (1)$$

where LCA represents the level of convention activity in a metropolitan area, and A, B and C are vectors of attributes corresponding to the three categories presented above. Empirical specification of this relationship requires the identification of variables to represent costs, market potential and accessibility. Our approach in this regard involved testing a number of alternative specifications. Such an approach can be characterized as exploratory, and it reflects the paucity of modeling on this subject in the literature.

The Sample and Model of Convention Activity

Data on convention activity, facility characteristics, and marketing and promotional efforts were collected for 1980 and 1985 from a survey of

250 public metropolitan convention organizations conducted in the Summer of 1986. The number of responses used in the empirical analysis was limited to 48 cases for 1980 and 41 cases for 1985 due to the relatively low response rate and missing data in a number of surveys that were returned. Summary statistics from the survey are presented in Table 1. These responses accounted for 30 and 31 percent of the national convention market in 1980 and 1984.

Table 1
Sample Characteristics

	<u>1980</u>	<u>1985</u>
No. of responses	48	41
Size of Facilities (ft. ²)		
Maximum	1,105,000	1,200,000
Minimum	7,000	5,000
Mean	184,348	246,397
St. Dev.	258,705	313,084
No. of Conventions Booked		
Maximum	1,661	2,120
Minimum	35	47
Mean	341	448
St. Dev.	343	427
No. of Delegates		
Maximum	4,121,906	4,456,100
Minimum	17,000	26,639
Mean	351,890	359,265
St. Dev.	732,720	729,612
Share of Nat. Market		
Maximum	9.18%	7.82%
Minimum	.03%	.015%
Mean	.82%	.63%
St. Dev.	1.70%	1.28%
Average Daily Expend./ Delegate		
Maximum	\$600	\$675
Minimum	60	65
Mean	115	161
St. Dev.	99	125

As the figures in Table 1 indicate, the sample appears to be representative of convention center size classes in the U.S., ranging from 5,000 square feet of public exhibit space (Portland, Maine) to over 1.2 million square feet (Las Vegas, Nevada). There is also a wide variation in the reported average daily expenditure per delegate, ranging from \$65 (Green Bay, Wisc.) to \$675 (Washington, D.C.). Market shares, the number of conventions booked and the total number of delegates similarly exhibit wide diversity.

The demand for convention facilities is estimated from a regression model relating the level of local convention activity to variables representing convention potential for a given area. The regression model is specified as follows:

$$LCA = f(YEAR, POP, EXP/DAY, PUBEXSP, PUBEXSP^2, HTLRMS, TAXES), \quad (2)$$

where

LCA = the annual level of convention activity in a metropolitan area, measured as the percentage of the total number of delegates in the national market;

YEAR = a dummy variable, with 1980 = 0 and 1985 = 1;

POP = the population of the metropolitan area (in thousands);

EXP/DAY = the average daily expenditure per delegate;

PUBEXSP = the total available public exhibit and meeting space (in thousands of square feet);

HTLRMS = the total number of first class hotel rooms in the metropolitan area;

TAXES = the sum of the sales and hotel room tax rates.

The average daily expenditure and tax variables are included in the model to represent the cost category influencing the attraction potential of an area. Areas with high costs associated with lodging and entertainment can be expected to be less attractive in comparison with lower cost areas, other things being equal. Thus we would expect these two variables to be negatively related to market shares.

The variables population, public exhibit space and the number of first class hotel rooms are included to represent the market potential of a metropolitan area. All are expected to have a positive effect on market share. Public exhibit space is specified in quadratic form in recognition of the nonlinear effect it is likely to have on market share. The national convention market is characterized by a degree of segmentation, and thus differences in the size classes of metropolitan convention facilities correspond to differences in the scale and type of conventions. We would expect that marginal changes in the amount of exhibit space would have a different effect on market share for different size classes of convention facilities. More specifically, we expect a positive relationship between the amount of exhibit space and market share, but one that reflects diminishing returns as capacity is expanded.

The population of the metropolitan area was included in the model to capture the effects of locally oriented convention activity. The number of first class hotel rooms was included as an indicator of the general tourism-attraction potential of the area. A dummy variable was also included to determine whether any change in market share between 1980 and 1985 occurred as a result of effects other than those attributable to the other variables.

Empirical Results

The regression model of the market for convention facilities was estimated via an OLS procedure using pooled data for 1980 and 1985. The results are reported in Table 2.

Table 2
Regression Results

<u>Coefficient</u>	<u>Parameter Estimate</u>	<u>Standard Error</u>	<u>t Statistic</u>
Intercept	.0391	.022	1.777
YEAR	-.1254	.149	-.839
POP	.000174	.000057	3.029*
EXP/DAY	-.0027	.000654	-4.132*
PUBEXSP	.0022	.00096	2.3*
PUBEXSP ²	-.0000016	.000001	-1.93**
HTLRMS	.000071	.000005	14.7*
TAXES	-.00271	.0236	-.115

$$R^2 = .878$$

$$SEE = .058$$

$$N = 89$$

* Indicates statistical significance at the .01 level.

** Indicates statistical significance at the .05 level.

The general statistical properties of the model, as reported in Table 2, reveal that the specification explains nearly 90 percent of the variation in metropolitan area market shares of the national convention market. All

coefficients have the expected signs, and five of the seven parameter estimates are statistically significant at the .05 level or better.

The cost-related variables, namely, average daily expenditures per delegate and combined sales and hotel room taxes exhibit the expected effects on market share. Although the influence of taxes is in the right direction, the coefficient is not statistically significant. The effect of daily expenditures is statistically significant, and the size of the coefficient is larger than expected. This result suggests that an increase of one dollar in local costs to delegates generates a .0027 percent reduction in market share. Based on 1985 figures this translates to a reduction of 1,636 delegates.

The coefficients for the linear and quadratic terms associated with the amount of public exhibit space are also in line with expectations. They indicate that a marginal increase in the amount of exhibit space has a positive but diminishing effect on market share. Evaluating these regression coefficients at the mean level of exhibit space, an increase in capacity of ten thousand square feet would produce an increase of .014 percent in market share, or 837 delegates.

The change in market share resulting from an increase in exhibit space is dependent on the level of existing capacity. This is shown in Table 3. For a metropolitan area with no existing capacity, the introduction of ten thousand square feet of exhibit space is estimated to produce 1,305 delegates. As existing capacity grows, the effect of a marginal addition is estimated to diminish. These diminishing returns to exhibit space

ultimately result in no increase in market share and delegates for a hypothetical metropolitan area with 687,500 square feet of existing exhibit space. For an area with a greater amount of existing exhibit capacity, an actual decline in market share and delegates is estimated to result from a marginal increase in capacity.

Table 3

Estimated Change in the Number of Delegates Given
a 10,000 ft² Increase in Facility Capacity

<u>Existing Exhibit Space (ft²)</u>	<u>Change in Delegates</u>
0	1,305
100,000	1,115
200,000	925
300,000	735
400,000	546
500,000	356
600,000	166
700,000	-24
800,000	-213

This result requires careful interpretation. There clearly are some metropolitan areas with exhibit capacities exceeding 700 thousand square feet. What our results indicate is that these areas are likely to possess a combination of visitor attracting attributes that distinguish them from their competition. Included among these attributes would be relatively low costs for delegates, a large number of hotel rooms (reflecting other

attractions in the area) and possibly other attraction amenities not captured in the model. However, for the "typical" metropolitan area our results do suggest a saturation point beyond which changes in facility capacity do not produce additional delegates.

Initial specifications of the regression model also incorporated several climate variables (such as average number of heating and cooling degree days, and variations between extreme summer and winter temperatures). These variables proved to be statistically insignificant. We also experimented with locational measures of accessibility in the national market (such as the number of arriving and departing flights, including regional dummy variables, and several indices based on different formulations of the gravity model). No significant locational relationship could, however, be established.

Concluding Remarks

A major policy issue in the planning and construction of convention centers, and a hitherto neglected topic in tourism literature, is quantitative estimation of the demand for such facilities. This paper provides a framework for the analysis of convention market potential in metropolitan areas. A model of the convention market developed here indicates that although facility expansion has a positive impact on metropolitan shares of the national market, the impact tends to diminish as facility size increases. At the upper end of the convention market our results suggest that the provision of more convention space in itself cannot be counted on as a guarantee for larger market shares. Other

factors, including the metropolitan population base, costs to delegates and supporting services also have an important effect on the level of metropolitan convention activity.