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Research paper



Modeling the Competitive Advantage of Companies within the Hotel Industry in a Region

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Abstract

This paper focuses on the development of techniques for modeling the competitive advantage of companies within the hotel industry in a region. The authors make the case that their proposed techniques for modeling the competitive advantage of companies within the hotel industry in a region can help to cumulatively evaluate and give a well-substantiated quantitative and qualitative assessment of the sector's competitiveness factoring in a set of specific indicators. This kind of algorithm for constructing a model for competitive advantage could help assess in real time the quality of services provided within the hospitality sphere and conduct comparative analyses across the nation's regions.

Keywords: *modeling, competitive advantage, hotel sector, tourism, competitiveness*

1. Introduction

At the present time, the development of the hotel sector requires fostering new competitive advantages for and boosting the competitiveness of hotel companies in the domestic and, afterwards, global tourism markets. However, success in this area will depend on a set of objective, as well as certain subjective, factors, analyzing which is crucial to working out relevant proposals on cultivating a sound competitive environment for companies within the hotel sector.

Issues related to modeling the competitive advantage of companies within the hotel sector have been investigated in depth by scholars E.S. Kurbonov [1], N.V. Nikitina [2], A.S. Pogodina [3], M. Soro [4], V.G. Topol'nik [5], A.A. Fedulin [6], and others. With that said, a crucial condition for constructing a sound model for hotels' competitive advantage is a focus on investigating a set of factors influencing the operation of companies within the hotel sector.

2. Materials and Methods

The study's methodological basis is grounded in the following general methods of research: analysis and synthesis, employed to analyze existing theoretical and methodological principles, approaches, and research insights dealing with issues of modeling the competitive advantage of companies within the hotel sector in a region; the structural/logical method, employed to systematize the factors influencing the development of companies within the hotel sector; factor analysis, employed to determine the degree to which various factors impact on customer satisfaction with the quality of services provided by hotels.

The study's information basis is grounded in relevant government statutes and regulations, statistical materials from federal and local authorities, and research publications by domestic and foreign scholars related to issues of modeling the competitive advantage of companies within the hotel sector in a region [7, 8, 9].

The work is focused on developing a set of techniques that could help boost the competitiveness of hotel operators in regions and substantiating a set of strategies for the social/economic development of hotel operators. In addition, the authors undertake to substantiate a set of techniques for assessing the competitiveness of companies within the hotel sector and establish and formulate some of the key areas for the strategic development of companies within the hospitality industry at the regional level.

3. Results and discussion

To construct an economic/mathematical model for the competitive advantage of companies within the hotel sector, the authors have developed a special algorithm, whereby the outcome variable is the ratio of Gross Regional Product to household income. This way to interpret the outcome variable enables more accurate analysis of a region's ability to gain new competitive advantages within the hotel industry.

Taking an integrated approach of this kind could help ensure a high degree of susceptibility of the dependent variable to factors in the competitiveness of companies within the hotel sector in a region. In conducting their factor analysis of the competitiveness of hotel companies in Moscow Oblast, the authors selected their

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social/economic and infrastructural indicators based on the criteria of current market conditions and business profit margins.

The choice of Moscow Oblast was associated with the area's overall attractiveness, including its geographic location, the region being the likeliest to be visited by foreign tourists first [10, 11, 12]. To substantiate the view about there being a close link between economic factors and the competitive advantage of the hotel industry in a region, the authors conducted a correlation analysis of the share of Gross Regional Product, household income, and a set of social/economic factors (Table 1).

Table 1: Analysis of the Power of the Interrelationship between Social/Economic Indicators of the Operation of the Hotel Sector and the Competitive Advantage of Hotels within Moscow Oblast (2011–2017)

	r	R2	t(3)	p	slope (У)	slope (X)
У x1	0.853733	0.728860	3.66615	0.014501	0.763934	0.853733
У x2	0.561636	0.315435	1.51786	-0.594062	0.561636	0.189504
У x3	-0.312007	0.097348	-0.73433	0.495722	0.911897	-0.312007
У x4	0.800291	0.640465	2.98444	0.030643	0.848031	0.800291
У x5	0.769624	-0.727150	-0.727150	0.528747	-2.36855	0.064068
У x6	0.868548	0.900451	0.900451	0.810812	4.62912	0.005688
У x7	0.605127	0.366179	1.69961	0.149953	0.613700	0.605127
У x8	0.820604	0.673392	3.21074	0.023709	0.784737	0.820604
У x9	0.868263	0.753880	3.91348	0.011256	0.734381	0.868263
У x10	0.718616	0.516409	2.31069	0.068848	0.812621	0.718616
У x11	0.919865	0.846151	5.24400	0.003343	0.768197	0.919865
У x12	-0.886069	0.785119	-4.27418	0.007907	0.856719	-0.886069
У x13	-0.958251	0.918246	-7.49393	0.000669	-0.838481	-0.958251
У x14	-0.936175	0.876423	-5.95489	0.001910	-0.782893	-0.936175
У x15	0.858939	0.737777	3.75070	0.013284	-0.494723	0.858939
У x16	-0.138828	0.019273	-0.31346	0.766583	0.861503	-0.138828
У x17	0.124802	0.015575	0.28126	0.789776	0.963410	0.124802
У x18	0.959158	0.919984	7.58207	0.000633	-0.044289	0.959158
У x19	-0.834126	0.695765	-3.38152	0.019642	0.936980	-0.834126
У x20	0.969245	0.939435	8.80660	0.000313	0.704404	0.969245
У x21	0.752021	0.565536	2.55116	0.051194	0.724956	0.752021
У x22	0.924628	0.854937	5.42843	0.002875	0.776685	0.924628

Note. *r* – coefficient of correlation; *R* - coefficient of determination; *t* - Student's criterion; *p* – level of significance; *slope* – coefficient of slope.

The credibility of the authors' analysis was verified using standard deviation, mean square deviation, and Student's t-test (*t*), while the density of the interrelationship was assessed using the coefficient of determination (tending to 1). Using the method for constructing a correlation matrix, the authors attempted to establish the power of the interrelationship between the factors impacting on the phenomenon under study and determine the nature of that impact.

The findings from the study indicate that there is a direct link between revenue from services provided by hotels within Moscow Oblast (*Xi*) and the competitiveness of the region's hotel sector (*B*), with the coefficient of correlation *r* equaling 0.8207. Boosts in profit margins posted by hotels within Moscow Oblast may be accompanied, in a major proportion, by boosts in hotels' competitiveness levels. This may be explained by the financial ability of hotels to build up their capital and direct it toward the development of their business.

Thus, an increase of 1% in the coefficient of profitability in companies within the hotel sector should be accompanied by an increase of 8.207% in the level of competitiveness within the region. Boosts in competitive advantage are by 82.07% governed by the above factor, and by 17.93% - by the other factors. The model for competitive advantage (*B*) based on changes in revenue posted by hotels within the region (X_i) may be represented in the following way:

$$Y = 0.0027-0.820704 *Xj \quad (1)$$

Another factor that influences the level of competitiveness of companies within the hotel sector в Moscow Oblast is the combined cost of staying for all guests accommodated at the region's hotels throughout the year (X_2). Note that there is a direct link between the combined cost of staying for all guests accommodated at the region's hotels and the level of competitiveness of the region's hotel sector (r=0.957). Indeed, attaching a hefty price tag to hotel rooms, as well as providing high-quality service, requires that hotel establishments focus on providing proper training to their personnel and employing new forms of promoting their services, which, consequently, may drive boosts in the competitive advantage of hotel facilities within the region.

The model for the competitive advantage of companies within the hotel sector in the region (*B*) based on changes in the combined cost of staying for all guests accommodated at the region's hotels throughout the year (X_2) may be represented in the following way:

$$Y = 0.118385 +0.9583 *X_2 \quad (2)$$

Thus, an increase of 1% in the combined cost of staying for all guests accommodated at Moscow Oblast's hotels throughout the year may result in an increase of 9.583% in the competitive advantage of the region's hotel sector. Boosts in the level of competitiveness of the region's hotel sector are influenced by 95% by the above factor, and by 5% - by the other factors.

4. Conclusion

The proposed techniques for modeling the competitive advantage of companies within the hotel industry in a region could help to cumulatively evaluate and give a well-substantiated quantitative and qualitative assessment of the sector's competitiveness factoring in a set of specific indicators. This kind of algorithm for constructing a model for competitive advantage could help assess in real time the quality of services provided within the hospitality sphere and conduct comparative analyses across the nation's regions. The resulting values of indicators of competitive advantage may serve as source material for the determination of priority issues in and reserves for the development of the hotel sector.

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