Building scenarios based on the system ensuring development of business activity in the hospitality sector

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Abstract — The article deals with the problem of developing a system that would ensure successful business activity in the hospitality sector of Big Yalta. It has in focus and evaluates institutional factors of business activity development as well as resourcing of the hospitality business in the region. The study evaluates the resourcing level and elaborates economic measures and scenarios of business activity development in the region of Big Yalta on the basis of the revealed strategic elements of the institutional framework. The research undermines a number of issues directly connected to the obsolete and worn-out state of hospitality infrastructure and other facilities, their irrational use and lack of constructive dialogue between the public sector and the private sector in terms of hospitality resources use. Methods of cognitive modeling of business activity development in the hospitality sector allow disclosure of the advantageous scenarios of modernizing the hospitality sector and innovation in the hospitality service as the primary source of revenue in the offseason period and a major factor of local employment.

Keywords — business activity in the hospitality sector, systems ensuring business activity development, resourcing, system of institutional factors, cognitive technology, adjacency matrix factor, building scenarios of business activity development in the hospitality sector.

I. INTRODUCTION

Business activity development in the hospitality sector does not solely depend on the resourcing potential of the resort but also on the business environment. Presently, the region of Big Yalta characterized by high resourcing potential still has money-losing ventures, many facilities in critical condition, scarcely and selectively developed areas and issues with the organization of urban environment.

Institutions of administrative regulation, regional territorial administrative development, human resourcing, cultural and social development, the level of business cooperation and its harmonization and high standards of internal communication altogether make a positive impact on the production efficiency and resources allocation in the hospitality sector. Knowing that explains the relevance of integrating these components into the system of institutional support for business in the hospitality sector which is not less important than the resourcing in terms of the region’s competitiveness. The system of institutional support designed for business activity stimulation in the hospitality sector is a dialectic complex of methods, forms, tools and instruments of governmental control and inherent market regulation with due account for the objective synergetic connections between the economic, social and ecological elements.

II. MATERIALS AND METHODS (MODEL)

A. Research available on the subject

Russian researchers S. Yu. Tsohla [1,2], I.V. Berzhnaya [3], I.M. Yakovenko [4;5] have studied the components of resourcing and the problems of development in the hospitality sector, which allows us to evaluate resourcing of the hospitality business and determine the impact factors of its development based on their works. While studying the processes within the hospitality industry, the cognitive approach as well as simulation modeling are considered.
relevant for they are widely applied in the economies of developed countries and have been studied by N.A. Abramova [6], Z.K. Avdeeva, S.V. Kovriga, D.I. Makarenko [7], E.K. Kornoushenko [8], V.I. Maksimov [9], G.V. Gorelova, E.N. Zakharova [10], S.V. Kovriga [11] and V.V. Kulba [12].

B. The objective of the research and methodology

The research is dedicated to the elaboration of the approach to building scenarios on the basis of the system that would ensure stimulation of the business activity in the hospitality sector. The methods applied in the current study include analysis, synthesis and comparison which allowed researching the resource potential of the resort and determining the elements of the system of institutional support that shall be prioritized. The research also involved the economic and statistical analysis including its specific techniques, such as grouping, indexing when evaluating the resource potential and stimulation modeling of complex semistructured systems when evaluating scenarios of business activity development in the hospitality sector.

III. RESULTS AND DISCUSSION

In the market conditions a region can be considered as a market actor which competes on a higher level of national economy and enters the global competitive processes with a certain level of business activity of the actors inside the region and of the region as a whole, which determines its general success. The Western economic tradition promotes the idea of a region being a separate business actor which is explained by the growing markets, their increasing convergence, better coordination and constant merging of businesses. High economic development and deepening integration processes accompanied by the growing differentiation of labor entail specialization of the regions based on their competitive advantages [13-15].

Resourcing being on the high level, another important role is attributed to the measures of governmental control in providing the necessary and compulsory institutional and infrastructural conditions for business activity development and processes of inherent market regulation when adapting to the forever changing consumer demand, improving quality of hospitality services and appearance of new market segments, which in the current climate serves the base of economic efficiency and, consequently, competitiveness of the national economy.

For instance, the area of Big Yalta is characterized by the high level of resourcing available for the business in the hospitality sector and its high concentration compared to the rest of the Republic of Crimea. Table 1 reflects evaluation of the resource potential of Big Yalta versus the resource potential of the Republic of Crimea. The former amounts to 20.3% of the regional potential with the territorial share of only 1.1% of the whole area of the Republic of Crimea, its spatial concentration being 18.4 times higher than that in the Republic [13].

The unique natural resources of Big Yalta create the basis of the business activity development in the hospitality sector; however, resourcing alone is not sufficient for the effective economic development of the region.

Thus, a specific role is acquired by the system of institutional factors that directly influences the efficiency of resource use in the hospitality industry.

The calculations done for the research [16] show the efficiency of the system of institutional and infrastructural support rated with 6 out of 10 points; therefore, further development potential amounts to 40%. With such potential for the system, each group takes a specific place in the order of priority.

When forming the sequence of priority in terms of the system elements, the elements with the highest priority are the ones in the group with a general high index of importance, irrespective of their own importance within the group. For instance, the study [16] has an elaborated sequence of elements according to the received coefficient values in the decreasing order: 1 – the investment system in the industry based on coordination and permissibility – 0.3708; 2 – organized pebble beaches – 0.3102; 3 – availability of big arenas (and other sports and concert facilities) and large-scale hospitality actors – 0.2754; 4 – sports and concert facilities integrated in the market relations – 0.2576; 5 – coordinated activity of all the actors in the region – 0.2323; 6 – development of the non-tourist potential of the region – 0.2203; 7 – organization and management of the economic processes in the private sector – 0.2132; 8 – transport accessibility of the region – 0.1654; 9 – organization and management of the economic processes in the segment of entertainment and holidaymaking – 0.1540; 11 – efficiency of the staff engaged in the industry – 0.1506; 12 – access to crediting of the tourist industry – 0.1337; 13 – transport efficiency – 0.1288; 14 – public support of the regional development strategy – 0.1264; 15 – innovation and event tourism in the off-season period – 0.1021; 16 – legal functioning of the industry – 0.0896; 17 –

<table>
<thead>
<tr>
<th>Type of resource</th>
<th>Structure of the resource potential in the Republic of Crimea</th>
<th>The ratio of the resource of Big Yalta in the Republic of Crimea</th>
<th>Relative importance of the resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape resources</td>
<td>0.140</td>
<td>0.081</td>
<td>0.011</td>
</tr>
<tr>
<td>Climate factor</td>
<td>0.252</td>
<td>0.181</td>
<td>0.046</td>
</tr>
<tr>
<td>Offshore (marine) resources</td>
<td>0.194</td>
<td>0.066</td>
<td>0.013</td>
</tr>
<tr>
<td>Cultural and historical resources</td>
<td>0.105</td>
<td>0.320</td>
<td>0.034</td>
</tr>
<tr>
<td>Hydro mineral sources (mineral water)</td>
<td>0.086</td>
<td>0.300</td>
<td>0.026</td>
</tr>
<tr>
<td>Recreation complex</td>
<td>0.223</td>
<td>0.330</td>
<td>0.074</td>
</tr>
<tr>
<td>Total:</td>
<td>1</td>
<td>x</td>
<td>0.203</td>
</tr>
</tbody>
</table>

competitiveness in terms of the value for money factor on the
global market – 0.0745; 18 – accessibility of the cultural and
historical landmarks – 0.0744; 19 – redevelopment of the
mountain forest zone – 0.0641; 20 – the necessary conditions
to achieve growth of the real income of the local population –
0.0647; 21 – efficient methods of spa therapy and medical care –
0.0641; 22 – well-developed human resourcing system
focusing on training and retraining staff in the industry –
0.0613; 23 – active placing of information advertising
recreational and tourist landmarks on Internet – 0.0576; 24 –
measures aiming at achieving regular and fair resource use –
0.0571; 25 – environmental policies – 0.052.

Within the available groups of the system there are
problematic elements that require relevant improvements. The
mechanisms of business activity support in the hospitality
sector are formed according to the preliminary defined
prioritized elements and groups they belong to.

The mechanism of business activity support in the
hospitality sector can be defined as a complex of methods,
tools, instruments and indices whose controlled performance
provides for the use of the resources in the hospitality activity
of the region as per definite goals [17].

Structuring the information available on the importance of
the basic factors of the system required the application of the
sensitivity analysis in order to build a graph and implement
scenario building. The sensitivity analysis allows defining the
cause-effect relations between the factors of the system, i.e.
the way one factor affects the state of the others and also
defining the factor value for the system and influence of the
system on its state.

Therefore, we have singled out five major development
factor-tools (FT) that are supposed to improve the levels of the
priority elements (Figure 1).

Below we will only comment on a few out of the presented
above development scenarios [6-12].

The results of building the first scenario are as follows:
\( Q_i(t) = +1 \) where \( p_i(0) \) is the initial impulse directed towards
the points of the graph and is the scenario number
\( i = 1,2,3,\ldots,n \).
For the purpose of developing scenario \( i = 1 \),
we plotted a vector of the initial impulses \( p_1(0) = \)
\((0,0,+1,0,0,0,0,0,0,0,0,0,0,0,0,0,0)\) towards point \( F_3 \) (Table 3). The
impulse enters one point of the orgraph, which is a simple
process of impulse propagation on the graph [10].

As \( t = 5 \), we shall define the vectors of changing
parameters of the points on the graph \( p(1),\ldots,p(5) \)
according to each of those \( n_1,\ldots,n_5 \).

Below are the simulation time-steps of system
\( 1) \)
\([n_1] : p^T (1) = p^T (0) = \begin{pmatrix} 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix} \);
TABLE II. DEVELOPMENT SCENARIO $Q_{e}=+1$ (ELABORATED BY THE AUTHORS ON THE BASIS OF EXPERT ESTIMATION)

<table>
<thead>
<tr>
<th></th>
<th>X (1)</th>
<th>X (2)</th>
<th>X (3)</th>
<th>X (4)</th>
<th>X (5)</th>
<th>X (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$F_1$</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>20</td>
<td>87</td>
<td>382</td>
</tr>
<tr>
<td>$F_2$</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>26</td>
<td>101</td>
<td>427</td>
</tr>
<tr>
<td>$F_3$</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>18</td>
<td>357</td>
<td></td>
</tr>
<tr>
<td>$F_4$</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>21</td>
<td>74</td>
<td>338</td>
</tr>
<tr>
<td>$F_5$</td>
<td>5</td>
<td>5</td>
<td>18</td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F_6$</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>24</td>
<td>116</td>
</tr>
</tbody>
</table>

Positive impulses entering points $F_2$, $F_6$ and $F_9$ are shown in Table 4.

Fig. 1 Developing the mechanism of business activity support in the hospitality sector
### TABLE III. SCENARIOS OF MODELING THE MECHANISM OF BUSINESS ACTIVITY SUPPORT IN THE HOSPITALITY SECTOR (ELABORATED BY THE AUTHORS ON THE BASIS OF EXPERT ESTIMATION)

<table>
<thead>
<tr>
<th>Scenario</th>
<th></th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
<th>F10</th>
<th>F11</th>
<th>F12</th>
<th>F13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+1</td>
<td>+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>+1</td>
<td>+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>+1</td>
<td>+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>+1</td>
<td>+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>+1</td>
<td>+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

The above simulated scenario of development appears to be the most favorable for the system. Factors $Q_0=+1$, $Q_9=+1$, $Q_2=+1$ sending positive impulses towards the points of the system provide for the balanced development of tourism, innovation in the hospitality service and health service in the offseason.

Of all the simulated scenarios of development, scenario $Q_0=+1$, $Q_9=+1$, $Q_2=+1$ proves to be the most advantageous one as innovation/investment in the hospitality services and health tourism in the offseason can more than double the load of the vacant rooms in the accommodation facilities and other infrastructure. Recently, there has been a tendency of decreasing ratio of tourists traveling for the purpose of treatment or health improvement, one of the possible reasons being the deterioration of the diagnostic and therapy basis. It is also noteworthy that health tourism requires a lot of investment to catch up with the latest innovations in the field [18]. In such conditions, the PPP may allow for the investment into health resort polyclinics which would further provide services for sanatoria and local citizens. Thus, sanatoria could afford operating without much capital spending on their own medical equipment. This would create the advantages of the scale effect while investing into the modern diagnostic and medical equipment, allow decreasing fixed expenses on management and service and provide for the maximum equipment capacity load [19, 20].

### TABLE IV. DEVELOPMENT SCENARIO $Q_0=+1$, $Q_9=+1$, $Q_2=+1$ (ELABORATED BY THE AUTHORS ON THE BASIS OF EXPERT ESTIMATION)

<table>
<thead>
<tr>
<th></th>
<th>X (1)</th>
<th>X (2)</th>
<th>X (3)</th>
<th>X (4)</th>
<th>X (5)</th>
<th>X (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>46</td>
<td>203</td>
<td>850</td>
</tr>
<tr>
<td>F2</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>56</td>
<td>232</td>
<td>967</td>
</tr>
<tr>
<td>F3</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>45</td>
<td>193</td>
<td>808</td>
</tr>
<tr>
<td>F4</td>
<td>0</td>
<td>2</td>
<td>12</td>
<td>44</td>
<td>174</td>
<td>759</td>
</tr>
<tr>
<td>F5</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>29</td>
<td>164</td>
</tr>
<tr>
<td>F6</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>14</td>
<td>60</td>
<td>256</td>
</tr>
<tr>
<td>F7</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>18</td>
<td>64</td>
<td>309</td>
</tr>
<tr>
<td>F8</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>63</td>
<td>246</td>
<td>1030</td>
</tr>
<tr>
<td>F9</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>14</td>
<td>62</td>
<td>273</td>
</tr>
<tr>
<td>F10</td>
<td>0</td>
<td>-1</td>
<td>-7</td>
<td>-33</td>
<td>-155</td>
<td>-647</td>
</tr>
<tr>
<td>F11</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>17</td>
<td>77</td>
<td>308</td>
</tr>
<tr>
<td>F12</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>27</td>
<td>115</td>
<td>485</td>
</tr>
<tr>
<td>F13</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>-2</td>
<td>-19</td>
<td>-52</td>
</tr>
</tbody>
</table>

In the course of the successful health resort development in the region, sanatoria can invest into their own medical
equipment diversifying the core and optional equipment while developing comparative advantages [21].

The tourist products to be offered in May and October (characterized by mild weather patterns and tolerable seawater temperature) may include Quest service and Quest Tour service, rock climbing, caving, biking tours, etc.; health tourism for children can be available during the holiday periods as well as with the option of temporary schooling in Yalta for the period of staying at the resort. Such kinds of tourism allow distribution of the load on the infrastructure and increase in the business activity in the low season and offseason and may also require collaboration between businesses and educational establishments, including student activists, in order to create such products.

IV. CONCLUSION

The evaluated resourcing of Big Yalta engaged in the business activity is at the high level of 20% of the resourcing of the Republic of Crimea while its territory makes up only 1% of the territory of the Republic. In the course of the research, we have defined the priority elements as per the system of the institutional factors and resourcing that were further used to elaborate the factor-tools for building scenario development of business activity in the hospitality sector while applying the cognitive approach.

It is the cognitive approach that confers the possibility of quality evaluation of factor interaction, scenario development of a situation and a tendency and of predicting the results of the offered measures. The region of Big Yalta markedly has problems with healthcare whereas medical service is expected to be at a very high level in order to comply with one of the recreational profiles and standards of safe holidaymaking. Thus, the built scenario \( Q_{f1}=1, Q_{f2}=1, Q_{f3}=1 \) studies the process of changing the issue to the better and as a result a considerable growth of the system indices is observed, especially after the fifth time-step. The impulse goes to point \( Q_{f3}=+1 \), which affects innovation development in the hospitality service and health tourism in the offseason period.

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References


