Application of an international standard pattern for financial and economical evaluation of the tourism services projects (case study Rijab- Dalahou City- Kermanshah Province)

Alireza Mahmoudi* and Masoud Mahdavi

Department of Geography, Science and Research Branch, Islamic Azad University, Tehran, Iran. alireza.mahmoudi25@yahoo.com

Abstract

United Nations Industrial Development Organization (UNIDO) with designing and developing of the first version of Comfar software, an international economical and financial evaluation of standard model for assessing production and services plans and projects, and selecting optimal use of investment was established for Rijab area of Dalahou district in Iran. The software receives financial and economic data, analyzes them and calculates their economic levels and the possibility of the project conducting. Rijab area, in terms of its geographical location with unique climatic conditions, cultural buildings and monuments, offers itself as a great tourist attraction especially in the West of Country. Developing the region for tourism excellence is one of the objectives of the comprehensive development plan. Therefore, attention to tourism especially rural tourism in this region is essential. The requisite development strongly considers the residence construction in planning of tourism. Hotels are the first local accommodation that should be built with attractive prospects. For this, a financial and economic justification model has to be developed. In this paper, for making application of this universal model, first by using the library and field study methods, the tourist attractiveness of the region is identified. Then, according to the statistics of tourists' inflow to the region, the correct estimation of the hotel is obtained. Afterwards, necessary data for Comfar software such as investment size, location, funding, taxes, design revenues and costs and other information needed to construct a four-star hotel in the area are prepared and installed in two Comfar and Excel software. Finally, financial and economic indexes of the design are analyzed and evaluated for justification.

Keywords: Tourism, rural development, sustainable development, economic indexes, hospitality industry, Iran

Introduction

When different ideas were proposed for investment and selection, the investors were seeking for different solutions to make the best decision. But existence of abundant parameters makes the computations so complicated by which decision maker didn’t have necessary confidence in their results. On the other hand, different attitudes towards a special issue caused that the same results won’t be obtained. In other words, about a plan, some computations make the plan look economical and some others refused it. Thus, standardization of definitions and computations becomes important to overcome the problem. But the main problem i.e. complexity of computational operations has been yet remained. For solving this problem, a committee was formed in United Nations Industrial Development Organization for simultaneous standardizing and computerizing of economic evaluation of plans and finally Comfar program was prepared and supplied in market.

Comfar (computer model for feasibility analysis and reporting) was prepared and codified by economic evaluation unit of UNIDO (United Nations Industrial Development Organization) in New York in 1979. In preparing this computer program, the experiences of more than 30 economic evaluation committees of different countries have been used and supplied to the market for the first time in 1983. Fig. 1 shows a sample window of Comfar software's input. The cost of preparation of this program amounts to 1.5 Million
dollars and now more than 0.5 Million versions are in
operation all over the world and in 15 languages. Also,
more than 140 countries of the world use this software for
evaluating manufacturing and service plans and projects
and selection of optimal alternatives for investment
(www.unido.org/comfar). This software is a valuable tool
for analyzing investment projects and was officially
introduced in Iran in 2003. This program has this
capability to receive financial and economic raw data and
analyze them based on necessary instructions and
illustrate the information in the Table and graph form and
finally complete the rate of being economical and
possibility of performing projects (UNIDO, 2008).

In order to make an accurate estimate of the statistics
of tourism to 4 star hotel in Rijab, a uniform
questionnaire was prepared in the beginning of the year
of 2009 and provided for rural office of tourist attractive
villages of the region. Based on the extracted statistics,
the number of all clients to the region was about 447,565
within the year 2009 (Table 1). Based on these statistics,
it is assumed that 15, 6, 3, 4 and 2 percent of passengers
who have visited the studied region for the purpose of
business, pilgrim, visiting historical, natural and cultural &
art works, respectively in 2009 should select the location
of the supposed hotel with annual average rate of 2.5
days for stay.

The number of resident passengers of hotel is equal to 19,918 in the first
operation year (by assuming keeping the passengers fixed) and this number will
reach to 24,249 with growth rate of 2% in

Establishment of our desired hotel in
centre of Rijab rural district in an area of about
2200 square meters would be made during 2
years. The 4 star hotel will have 46 rooms
(22 Single, 18 Twin, 6 suites) in 6 stories
and has facilities like permanent, seasonal
restaurant and feast saloons and recreation
and welfare facilities viz. pool, dry and
steam sauna and Jacuzzi, body building
and ping pong. In this plan, the space of -1
floor is marked for parking lot, kitchen,
warehouse, service space and installments
and floor will be used as lobby and
restaurants and second floor as the pool
and body building saloon and third to fifth
floors as guest rooms and sixth floor as the
feast saloon. All costs and incomes of 4 star
hotel's plan has been estimated based on
the existing principles and standards and
raw data and information has been entered
into Comfar software after compiling and
computing and financial and economic indexes of the plan
has been analyzed by using software output information. Meanwhile all output information of financial and economic
indexes of Comfar software has been computed by using
Excel software and the accuracy of information has been
confirmed.

Location and characteristics of the region
Rijab rural district of Dalahou (Fig. 2 and 3) environs and
with extent of 40 square kilometers is located in Western half of
Kermanshah. This region has 15 villages and is located in
latitude of 34 degrees and 26 minutes and longitude of 45
degrees and 55 minutes to 46 degrees and 5 minutes from
Greenwich meridian. Geographical location of Rijab leads to
Salas Babajani town from the North and to Dalahou town
from the East and to Patagh rural district from the South and
to Zahab desert and Iraq from the West. Based on the census
of 2006, this rural district has 6700 populations which is the

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Kermanshah by having climatic diversity, snowy mountains and summits, caves, waterlogged rivers and beautiful mirages has always been considered by tourists. More than half of the extent of province has been covered by high mountains. This province by having more than 600 monuments is one of the most spectacular regions of Iran. Dispersion of monuments and natural beautiful attractions is in such a manner that averagely there is a monument or paradise in each 15 to 20 kilometer. The existence of remains of living in cave era and then civilizations like Elamite, Lului, Sumerian and remains of local government or hierarchy of kings like Media, Achaemenian, the Parthia, Sassanid, Mongol, Tribalism, Safavid and Qajar dynasty in Kermanshah has distinguished old history of this region. (Geography book of Kermanshah, 2006).

Rijab region is unique in terms of natural conditions and environmental factors (Peroni, 2008), non uniformity, diverse natural features like mountains, valleys, rivers, waterways, medical, decorative herbs and gardens. The highest point of Rijab is 2540 meters and the lowest point is 500 meters from sea level. 46% of its area is located between heights of 520 to 1100 meters and 54% between 1100 to 2540 meters (Afshar Sistani, 1992).

In terms of multitude of monuments and their diversity, it can be said that it’s unique in this province and it’s worthwhile that group of researchers and archeologists scientifically research and explore for days and months around that region (Golzari, 1978). Locating Rijab in margin of Shahi road (this road has connected the capitals of ancient Iran, Tisfoun - Bable to Shoush and Tahkt-E Jamshid) and Patagh gate (western gate of Iran plateau) increases the desired and appropriate natural location which has multiplied its strategic importance (tourism comprehensive plan of Rijab region, 2003). As it’s clear from the ancient history, Sassanid kings have been spending some times in Rijab in their royalty and political traveling between capitals (political transportation) and totally, all ancient works and buildings in Rijab indicate its residential and historical antiquity from the ancient periods up to now (Zendeh del, 2000).

Plan of income

The first step in analyzing economical feasibility of conducting any economic activity is the determination of its profitability. Accordingly, incomes and costs of plan and then justifiability of the plan will be firstly analyzed. In general, the main incomes which will be predicted to be obtained after performing plan considering kind and specifications of desired plans are:

The obtained income from selling room: Prediction of these incomes considering number and combination of rooms and percentage of estimated occupation in Table 2 and fixing the prices will be made. The first required index for computing income after index of percentage of occupation is price index. Therefore, rent of each room with separation of type of room will be firstly determined and then average weight of price of each room will be computed according to Table 3. The obtained income from rent of stay of passengers in 2013 (1st operation year):

\[ \text{Number of room} \times \text{percentage of occupation} \times \text{average weight of price of each room} \]

\[ (46) \times (69.78\%) \times 1,483,074 \times 365 = 17,375 \text{ Million Rials.} \]

For estimating income of future years of plan, considering increase procedure of percentage of occupation and fixing rent rate of room based on fixed prices of year of 2013, some computations have been made (Table 5).
The obtained income from selling food, beverage, saloon and ceremony: with regard to considering the average operative capacity of saloon for 400 persons and prediction of number of ceremony in each year with estimate of menu rate has been computed 180,000 Rials.

Also, for future years by using estimate of number of ceremony and keeping the prices fixed and operative capacity of saloon, the obtained income from selling food and beverage will be predicted and reflected in Table 4.

The obtained income from selling food and beverage in permanent restaurant: Considering the studied requirements which is necessary that this plan could be operated in first operation year of this place is equal to:

\[
\{\text{Number of serving of each meal (equal to passengers)} + \text{number of guests in 335 days except passengers of hotel)} \times \text{rate of each serving} = (19,918 + 13,400) \times 100,000 = 3,332 \text{ Million Rials}.
\]

Accordingly, the predicted income in first operation year of this place is equal to:

The obtained income from selling food and beverage in seasonal restaurant: The second action in establishing a new hotel is its financial predictions. Considering the predicted specifications for establishing the aforementioned hotel and considering all installment and equipment requirements which is necessary that this plan could be utilized considering the degree of hotel, estimate of cost is separately mentioned for each life years of the plan.

Plan investment fixed cost: It is assumed that in the fixed costs of plan's investment, the land will be freely given to the investor. The estimated amount for fixed investment of plan is 95,000 Million Rials which an amount of 40,850 Million Rials for the first year and 54,150 Million Rials have been estimated considering 2 years construction phases which its complete description is in Table 6. Also, 16 operational personnel are predicted in hotel with 82.5% of passengers) + number of guests in 335 days except passengers of hotel\} \times \text{rate of each serving} = (19,918 + 13,400) \times 100,000 = 3,332 \text{ Million Rials}.

Accordingly, the aforementioned income has been predicted for future years in Table 5.

Table 4. Estimate of number of ceremonies held during operation period of plan

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of ceremonies</td>
<td>150</td>
<td>155</td>
<td>160</td>
<td>165</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>170</td>
</tr>
</tbody>
</table>

Table 5. Incomes of 4star hotel's plan of Rijab during operation (Million Rials)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Room Income</td>
<td>17,375</td>
<td>17,787</td>
<td>18,231</td>
<td>18,578</td>
<td>19,141</td>
<td>19,644</td>
<td>20,207</td>
<td>20,413</td>
<td>20,586</td>
<td>20,979</td>
<td>21,122</td>
<td>21,154</td>
</tr>
<tr>
<td>Income of food, saloon</td>
<td>10,800</td>
<td>11,160</td>
<td>11,520</td>
<td>11,880</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
<td>12,240</td>
</tr>
<tr>
<td>Income of food, beverage in seasonal restaurant</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
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<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
<td>1,340</td>
</tr>
<tr>
<td>Coffee shop income</td>
<td>348</td>
<td>350</td>
<td>352</td>
<td>353</td>
<td>356</td>
<td>358</td>
<td>361</td>
<td>362</td>
<td>362</td>
<td>364</td>
<td>365</td>
<td>365</td>
</tr>
<tr>
<td>Income of parking rent</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
<td>515</td>
</tr>
<tr>
<td>Incomes on side</td>
<td>1,043</td>
<td>1,067</td>
<td>1,094</td>
<td>1,115</td>
<td>1,148</td>
<td>1,179</td>
<td>1,212</td>
<td>1,225</td>
<td>1,235</td>
<td>1,259</td>
<td>1,267</td>
<td>1,269</td>
</tr>
<tr>
<td>Total income</td>
<td>34,753</td>
<td>35,598</td>
<td>36,481</td>
<td>37,250</td>
<td>38,027</td>
<td>38,867</td>
<td>39,531</td>
<td>39,774</td>
<td>40,441</td>
<td>40,610</td>
<td>40,648</td>
<td>40,648</td>
</tr>
</tbody>
</table>

Room income: the obtained income from being operator in conversations, capital.

Cost estimate of annual insurance: Insurances which have been new considered to be standard for hotels and common in Iran are:

Fire, lightning and explosion insurance: the basis of computing this kind of insurance based on the existing tariff is 0.00305% of all primary investment minus cost of buying land and municipality dues which have been computed as follows: (95,000-5,273) × 0.003% = 269 Million Rials

Plan of costs

The second action in establishing a new hotel is its financial predictions. Considering the predicted specifications for establishing the aforementioned hotel and considering all installment and equipment requirements which is necessary that this plan could be utilized considering the degree of hotel, estimate of cost is separately mentioned for each life years of the plan.

Table 6. Estimate of project investment with separation of construction period (Million Rials)

<table>
<thead>
<tr>
<th>Description</th>
<th>Total construction phase</th>
<th>2011 Year</th>
<th>2012 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>precinct and land improvement</td>
<td>50,000</td>
<td>22,850</td>
<td>27,150</td>
</tr>
<tr>
<td>municipality charges</td>
<td>7,000</td>
<td>2,800</td>
<td>4,200</td>
</tr>
<tr>
<td>machineries and facilities</td>
<td>14,250</td>
<td>5,700</td>
<td>8,500</td>
</tr>
<tr>
<td>side and service facilities</td>
<td>23,750</td>
<td>9,500</td>
<td>14,250</td>
</tr>
<tr>
<td>total fixed costs of investment</td>
<td>95,000</td>
<td>40,850</td>
<td>54,150</td>
</tr>
</tbody>
</table>
Energy including electric energy cost, consuming water have been predicted and inserted in Table 7. For all years of plan, 32% of obtained income from selling food and beverage. The most important required indexes, computation software has been used for computing these indexes. In this case, present value of P Rial will be obtained after n years:

\[
P \times (1+i)^n = P
\]

Unpredicted costs: After identifying cost items and their estimates for ensuring that all costs are considered, 2 percents of total income of hotel for this purpose.

Estimate of amortization cost: Regarding estimate of this cost considering the amortization Tables, amortization rate for building, electrical installments, mechanical installments and equipment has been computed descending 7 percents, 15 percents, 15 percents and direct 5 year amortization respectively through Comfar software considering the separation of plan investment and total operation costs have been presented in Table 7.

Estimate of financial cost: Financial resources of plan includes 40% cash share and 60% remaining through bank facilities with 5 year payback period will be funded with rate of 11% which all financial costs of plan have been presented in Table 7. Also rate of income tax is 12.5%.

Economic and financial indexes of plan

Net present value (NPV)

Net present value indicates difference of present value of all plan incomes (obtained from selling product or service) and costs of plan (all consumed resources) of its computation manner is described as follows:

If amount of A Rial with rate of i percents will be P Rial for n years:

\[
P = A(1 + i)^n
\]

In this case, present value of P Rial will be obtained after n years:

\[
A = \frac{P}{(1 + i)^n}
\]

### Table 7. Operation costs of plan (Million Rials)

<table>
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<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and Wage</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
<td>1,320</td>
</tr>
<tr>
<td>Insurance</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
<td>270</td>
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<tr>
<td>Energy</td>
<td>463</td>
<td>470</td>
<td>471</td>
<td>471</td>
<td>474</td>
<td>472</td>
<td>474</td>
<td>472</td>
<td>472</td>
<td>474</td>
<td>473</td>
<td>472</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>174</td>
<td>178</td>
<td>182</td>
<td>186</td>
<td>191</td>
<td>194</td>
<td>198</td>
<td>199</td>
<td>200</td>
<td>202</td>
<td>203</td>
<td>203</td>
</tr>
<tr>
<td>Food and beverage cost</td>
<td>5,062</td>
<td>5,193</td>
<td>5,325</td>
<td>5,454</td>
<td>5,590</td>
<td>5,610</td>
<td>5,631</td>
<td>5,639</td>
<td>5,645</td>
<td>5,660</td>
<td>5,666</td>
<td>5,667</td>
</tr>
<tr>
<td>Consuming supplies</td>
<td>455</td>
<td>466</td>
<td>478</td>
<td>488</td>
<td>501</td>
<td>509</td>
<td>518</td>
<td>521</td>
<td>524</td>
<td>530</td>
<td>532</td>
<td>532</td>
</tr>
<tr>
<td>Repair and maintenance</td>
<td>180</td>
<td>203</td>
<td>213</td>
<td>226</td>
<td>243</td>
<td>262</td>
<td>284</td>
<td>302</td>
<td>323</td>
<td>347</td>
<td>365</td>
<td>385</td>
</tr>
<tr>
<td>Advertising</td>
<td>695</td>
<td>712</td>
<td>730</td>
<td>745</td>
<td>765</td>
<td>777</td>
<td>791</td>
<td>795</td>
<td>800</td>
<td>809</td>
<td>812</td>
<td>813</td>
</tr>
<tr>
<td>Depreciation</td>
<td>10,403</td>
<td>9,589</td>
<td>8,875</td>
<td>8,247</td>
<td>7,694</td>
<td>4,356</td>
<td>3,925</td>
<td>3,543</td>
<td>3,203</td>
<td>2,902</td>
<td>2,632</td>
<td>2,392</td>
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<tr>
<td>Financial costs</td>
<td>5,594</td>
<td>5,594</td>
<td>5,594</td>
<td>5,594</td>
<td>5,594</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other costs</td>
<td>711</td>
<td>720</td>
<td>729</td>
<td>738</td>
<td>747</td>
<td>471</td>
<td>474</td>
<td>476</td>
<td>478</td>
<td>481</td>
<td>482</td>
<td>483</td>
</tr>
<tr>
<td>Total</td>
<td>25,327</td>
<td>24,715</td>
<td>24,187</td>
<td>23,739</td>
<td>23,389</td>
<td>14,241</td>
<td>13,885</td>
<td>13,537</td>
<td>13,235</td>
<td>12,995</td>
<td>12,755</td>
<td>12,537</td>
</tr>
</tbody>
</table>

Considered 2 percents of total income of hotel for this purpose.
\( i \) is the discount rate. If \( i = 0 \), then \( P = A \) and there’s no difference between present and future value. If inflow and outflow in successive years is \( E_j \) and \( R_j \) for \( n \) years, net present value of incomes is:

\[
NPV = R \left( 1 + i \right)^{-1} - E \left( 1 + i \right)^{-1} + R \left( 1 + i \right)^{-2} - E \left( 1 + i \right)^{-2} + \ldots + R \left( 1 + i \right)^{-n} - E \left( 1 + i \right)^{-n}.
\]

We’ve computed computations related to the net present value considering its formula which its result is identical with computations of Excel software which automatically compute this task.

\[
NPV = \left( R - E \right) + \frac{R_1 E_1}{\left( 1 + i \right)^1} + \frac{R_2 E_2}{\left( 1 + i \right)^2} + \frac{R_3 E_3}{\left( 1 + i \right)^3} + \ldots + \frac{R_n E_n}{\left( 1 + i \right)^n}.
\]

### Table 8. Summary of Comfar computations’ results

<table>
<thead>
<tr>
<th>INVESTMENT COSTS</th>
<th>Total</th>
<th>Production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fixed investment costs</td>
<td>95,000</td>
<td>0.00</td>
<td>95,000</td>
</tr>
<tr>
<td>Total pre-production expenditures</td>
<td>9,265.35</td>
<td>0.00</td>
<td>9,265.35</td>
</tr>
<tr>
<td>Pre-production expenditures (net of interest)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Interest</td>
<td>6,608.35</td>
<td>0.00</td>
<td>6,608.35</td>
</tr>
<tr>
<td>Income from net working capital</td>
<td>-833.63</td>
<td>0.00</td>
<td>-833.63</td>
</tr>
<tr>
<td>TOTAL INVESTMENT COSTS</td>
<td>102,691.35</td>
<td>-833.63</td>
<td>102,824.72</td>
</tr>
</tbody>
</table>

### SOURCES OF FINANCE

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Production</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total equity capital</td>
<td>46,482.00</td>
<td>0.00</td>
<td>46,482.00</td>
</tr>
<tr>
<td>Foreign</td>
<td>46,482.00</td>
<td>0.00</td>
<td>46,482.00</td>
</tr>
<tr>
<td>Total long-term loans</td>
<td>57,986.92</td>
<td>0.00</td>
<td>57,986.92</td>
</tr>
<tr>
<td>Foreign</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Local</td>
<td>57,986.92</td>
<td>0.00</td>
<td>57,986.92</td>
</tr>
<tr>
<td>Total short-term loans</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Foreign</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Local</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>TOTAL SOURCES OF FINANCE</td>
<td>104,469.92</td>
<td>-833.63</td>
<td>103,636.29</td>
</tr>
</tbody>
</table>

### INCOME AND COSTS, OPERATIONS

<table>
<thead>
<tr>
<th>First year</th>
<th>Reference year</th>
<th>Last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales revenue</td>
<td>38,726.72</td>
<td>76,563.72</td>
</tr>
<tr>
<td>Operating costs</td>
<td>7,652.53</td>
<td>7,652.53</td>
</tr>
<tr>
<td>Operating margin</td>
<td>329.36</td>
<td>299.98</td>
</tr>
<tr>
<td>OPERATING INCOME</td>
<td>7,922.37</td>
<td>7,932.51</td>
</tr>
<tr>
<td>Depreciation</td>
<td>9,375.00</td>
<td>9,375.00</td>
</tr>
<tr>
<td>Financial costs</td>
<td>0.375.58</td>
<td>0.375.58</td>
</tr>
<tr>
<td>TOTAL PRODUCTION COSTS</td>
<td>23,375.97</td>
<td>23,375.97</td>
</tr>
<tr>
<td>Marketing costs</td>
<td>1,463.68</td>
<td>1,463.68</td>
</tr>
<tr>
<td>Costs of materials</td>
<td>26,231.69</td>
<td>26,231.69</td>
</tr>
<tr>
<td>Costs of labor</td>
<td>26,231.69</td>
<td>26,231.69</td>
</tr>
<tr>
<td>Gross profit from operations</td>
<td>5,217.11</td>
<td>5,217.11</td>
</tr>
<tr>
<td>Extraordinary income</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Extraordinary expenses</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Depreciation allowances</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>GROSS PROFIT</td>
<td>5,217.11</td>
<td>5,217.11</td>
</tr>
<tr>
<td>Investment allowances</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>TAXABLE PROFIT</td>
<td>5,217.11</td>
<td>5,217.11</td>
</tr>
<tr>
<td>Income (corporate tax)</td>
<td>1,128.85</td>
<td>1,128.85</td>
</tr>
</tbody>
</table>

### RATIOS

<table>
<thead>
<tr>
<th></th>
<th>Net Present Value of Total Capital Invested</th>
<th>at 17.00%</th>
<th>26,645.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal rate of return on investment (IRR)</td>
<td>22.90%</td>
<td>26,745.52</td>
<td></td>
</tr>
<tr>
<td>Modified IRR</td>
<td>26.61%</td>
<td>26,819.52</td>
<td></td>
</tr>
<tr>
<td>Modified IRR on equity</td>
<td>26.61%</td>
<td>26,819.52</td>
<td></td>
</tr>
<tr>
<td>Net present value of equity capital (NPVE)</td>
<td>28,765.00</td>
<td>28,765.00</td>
<td></td>
</tr>
</tbody>
</table>

Net present value in 4 star hotel plan with primary investment is 95,000 Million Rials and net cash flow of the first year is -40,850 Million Rials which will be reached to 69,770 Million Rials in the last operation year (scrap value is added to the net cash flow of the last operation year) and by assuming 17% discount rate and 12 year life of plan is equal to 26,648 Million Rials which non negative net present value in 17% discount rate indicates the plan is economical.

Net present value of equity capital (NPVE): This indicates difference of present value of equity capital incomes (received share profit) and equity capital costs (cash). Non negative net present value in discount rate equal to the opportunity cost of investor indicates that the project is economical from the investor’s point of view. Net present value of total capital of 4 star hotel’s plan is positive and a figure equal to 28,765 Million Rials (Table 8).

### Internal rate of return (IRR): The internal rate of return is a rate which allocated resources to the plan will make profit with that rate and is more used for analyzing economy of executive engineering (Akbari, 2003). For computing internal rate of return, net present value will be equal to 0 (NPV=0) and internal rate of return more than discount rate (opportunity cost of capital) indicate the plan is economical. In this relation:

\[
IRR = -1 + \frac{R}{(1+i)} + \frac{R}{(1+i)^2} + \frac{R}{(1+i)^3} + \ldots + \frac{R}{(1+i)^n}.
\]

Whenever the discount rate \( i \) is more, net present value of incomes are less and we see that net present value of incomes is equal to zero in lieu of i. This \( i \) quantity is called internal profitability coefficient or internal rate of return of plan.

Economic concept (IRR) is maximum interest or profit which the investor can pay for financing the plan because if he pays more, NPV will be negative and it causes loss. Internal rate of return of 4 star hotel’s plan in Rijab is 22.99% (Fig. 4 and Table 8).

### Internal rate of return on equity (IRRE): It indicates return of equity allocated to the plan through investors. From investor point of view, the received share profit will be considered as the benefits of investor and allocated equity to the plan as the investment cost. Internal rate of return on equity more than discount rate (opportunity cost of investor) indicates the plan is economical from the investor point of view. Internal rate of return of rights of share owners of 4 star hotel’s plan is 26.51% (Table 8).

### Normal payback period: It is the period which total performed investments will be returned by obtained incomes from the plan (without regard to their time value). In other words, capital payback period is one in which costs of plan is reimbursed with its net incomes which the capital will be amortized. For example, normal payback period with 100 Million Rial investment with annual net income of 20 Million Rial is 5 years. In this method, more payback period, better investment.

The advantage of this method is its simplicity and easiness for considering investment risk factor. For accepting or rejecting the plan, there’s maximum T period. For example, farmers may only accept plans which their payback period is less than 5 years. In former
Soviet, the quantity of $T$ was accepted to be 3 to 7 years according to the field of activity and 10 years for infrastructural plans like transportation, production and electricity conduction. Normal payback period is about 5 years and 10 months in 4 star hotel's plan.

Dynamic payback period: It is the period which total performed investments will be returned by obtained incomes from the plan (with regard to their time value). Defect of normal payback period is that it doesn't consider time factor. For resolving this defect, it's enough that net present value of incomes will be involved in computing payback period. By assuming that net income is fixed for $t$

\[ \text{NPV} = -I + \sum_{i=1}^{t} \left( \frac{R}{1+i} \right)^t = -I + \frac{R}{1+i} \left[ 1 - \left( \frac{1}{1+i} \right)^t \right] \]

By dividing both sides of the above equation:

\[ 1 - \frac{R}{I} \left( \frac{1}{1+i} \right)^t \]

And by considering that: $\log \left( 1 - \frac{R}{I} \right) = \log \left( \frac{1}{1+i} \right)$

\[ t = \frac{\log \left( \frac{1}{1+i} \right)}{\log \left( \frac{R}{I} \right)} \]

Dynamic payback period of plan is computed regarding the aforesaid formula and by using Comfar and Excel software which its period is 9 years and 6 months (Table 8).

Breakeven analysis: It is determiner of capacity of production in which sale income covers production costs. Production more than breakeven indicates locating in profit situation and less production being in loss situation. High breakeven indicates high risk of plan against unpredicted factors (Mostazafan Foundation of Islamic Revolution, 2007). Breakeven of this plan will be obtained by selling 21 rooms of total rooms.

Sensitivity analysis: It is a method for reviewing and evaluating approval of key parameters on financial indexes of plan and reviews risk of performing plan in different states (consulting engineers of Nazm Pouyan management, 2006) and somehow is kind of review toward economic evaluation. This question can be asked that the primary estimates can well indicate conditions which will be occurred in the future after performing project (Oskoonezhad, 2006). Key and affecting variables on rate of profitability of this plan are: changes in rate of room, percentage of occupation which rate of analysis of economic and financial indexes are shown by increasing and decreasing these variables in Tables 9 and 10.

**Conclusion**

One way of gaining national income and importing foreign currency is to create residential and recreational facilities beside tourism center and attractions. Therefore, creating suitable facilities for domestic and foreign tourists can have a significant
Our ancients have presented valuable heritage for us. Capital which has antiquity up to Iranian history and is easily available for us as a valuable role in the country’s economic progress. Our ancients have established a 4 star hotel in Rijab region:

- In computing net present value of plan (NPV) by assuming 17% discount rate, three states will be occurred. In the first state (NPV < 0), it means that present value of costs is more than present value of incomes and in other words, net present value of plan is negative and project is non economical. In the second state (NPV > 0), it means that present value of costs is less than present value of incomes and the project is economical and in the third state (NPV = 0), it means that minimum attracting rate is provided for investment and consequently, the project is economical. In economic comparison of some projects by present value, the project is the most economical one which has more net present value.
- In the present plan, the second state has been occurred and net present value of total plan and share of investor is 26,648 and 28,765 Million Rials, respectively.
- During operation period, internal rate of return of plan (IRR) and internal rate of return on equity is 22.99% and 26.51%, respectively. Thus, the plan has economic justification as both rates are high in comparison with rate of bank interest (11%).
- Payback period of plan is an approximate method for economic comparison of projects. The analyzer is seeking for a period which primary capital can be reimbursed by annual incomes by using this method. Normal and dynamic payback period of plan is about 6 and 10 years during operation period, respectively.
- Break even review of cost and income of plan indicates that by averagely selling 21 out of 46 rooms or in other words, selling 45% of rooms, the plan will be reached to covering point of costs without margin of positive profit which indicates justifiability of plan.

The performed sensitivity analysis in two affecting parameters in hospitality includes variable of average percent of hotel’s occupation and average of sales price of a room by considering increase and decrease changes in 5, 10 and 15% rates and its effect on economic evaluation indexes indicate that net present value of plan (NPV) is positive and internal rate of return more than discount rate (17%) has been considered which performed computations and fluctuations specially, decrease changes don’t negatively affect on performing plan and it has economic justification.

All economic and financial indexes of plan indicate justifiability of plan of establishing a 4 star hotel in the region under consideration. It will also promote subsequent employment opportunities, income, cultural exchanges, preserving cultural values, agricultural development and morale reinforcement of innovation and handicraft produce. Such developments can also mitigate many problems especially rural area which mainly encounter with risk of immigration, evacuation and stagnation and unemployment. Hospitality industry can nourish the human talents and rural skill to put it natural and practical.

For future development the following are suggested: 1) Use of this model for financial and economical evaluation of other service projects such as construction of telecab, park and game centre, cinema, Sleigh, and construction projects. 2) With suitable modifications, this model can be employed in all activities related to planning, execution, and termination of projects.

### Acknowledgements

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### References