

INTELLECTUAL CAPITAL IN METROPOLITAN HOTELS

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ABSTRACT

Hospitality operations are focused on human capital needed to the tough competition of knowledge economy. Hotel management is already cautious regarding structural and financial capital and therefore strategies have been developed for improvements and value creation on those assets. Hence, intellectual capital value of a hotel has become the resource of innovation as well as the competitive advantage. This study has been realized to propose an exploration of the relation among performance factors, quality measures and the intellectual capital of hotels. A specific scorecard is defined in order to analyze the focus points, the barriers and the relations among the human, structural and customer capital strategies. The scorecard was run on four and five star hotels in Istanbul to appraise the distinction of quality as represented by stars. The statistical analysis of the data allows us to test the relationship between performance and the intellectual capital. This study will contribute both to academicians and practitioners by introducing a new vision.

Keywords: Intellectual Capital, Hospitality Management

ŞEHİR OTELLERİNDE ENTELLEKTÜEL SERMAYE

ÖZET

Otelcilik (ve misafirperverlik) sektörü bilgi ekonomisinin getirdiği rekabet için insan sermayesine önem vermektedir. Genel anlamda otel yönetimi, yapısal ve finansal sermaye konusunda dikkatli davranmaktadır ve dolayısıyla stratejilerini bu varlıklar için değer oluşturma ve iyileştirme için geliştirmektedir. Bu sebeple, bir otelin sahip olduğu entellektüel sermaye yenilikçiliğin ve rekabet avantajının kaynağı haline gelmiştir. Bu çalışmanın amacı; otellerin performans unsurları, kalite ölçüleri ve entellektüel sermayeleri arasındaki ilişkiyi incelemektir. Araştırmanın ana noktaları olan insan, yapısal ve müşteri sermayeleri stratejileri arasındaki ilişkileri ve engelleri analiz etmek için spesifik bir sayı kartı tanımlanmıştır. Sayı kartının İstanbul'daki dört ve beş yıldızlı otellerde uygulanmasıyla yıldız ile ayrımı yapılan kalite farkı incelenmiştir. Elde edilen verinin istatistiksel analizi performans ve entellektüel sermaye arasındaki ilişkileri test etmeyi sağlamıştır. Bu çalışma hem akademisyenlere hem de sektörde çalışan profesyonellere yeni bir görüş sağlayarak katkıda bulunacaktır.

Anahtar Kelimeler: Entellektüel Sermaye, Otel Yönetimi

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1. INTRODUCTION

The hospitality sector has unique features focused on a form of enterprise which has been established in order to sell time responding to seasonal fluctuations in national and international demand. This high risk business has to promote a wide range of services such as restaurants, entertainment, business conferences targeting heterogeneous customers (Littlejohn, 2004, pp. 25–38).

Metropolitan hotels offer 24 hours service for the whole year and hence, they face the unavoidable need of high number of personnel working in shifts. Success in this industry relies on business relations, personnel and the information systems supporting the service processes (Choa, 2006). These facts lead to recognition of the importance of measuring and valuing Intellectual Capital in hotel management, although the literature review shows very little evidence of intellectual capital studies in the industry.

This study aims to demonstrate the impact of intellectual capital on business performance with the goal of improving innovation in large metropolitan hotels. The definition of intellectual capital is taken from Bontis (Bontis, 1998, pp.63-76), but adapted to the hospitality services. Hence, it is accepted that intellectual capital is composed of structural, human and customer capital which are also defined so as to include the industry specific factors as shown in Figure 1.

The following section is reserved for the background of intellectual capital studies in hospitality sector. The procedure and analysis applied in the survey of four and five star hotels of Istanbul will be explained in the third section and the last section will consist of concluding remarks and suggestions for further studies. This study will contribute to both academic and industrial developments by introducing a new vision of the area.

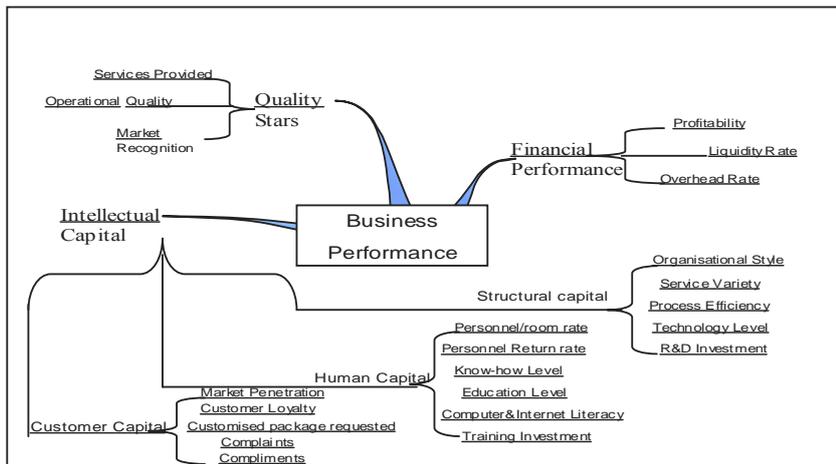


Figure 1: Knowledge Map for Business Performance in Hotel Industry

2. BACKGROUND

Intellectual capital concepts first evolved from the work of practitioners such as Edvinsson, Sveiby and Saint-Onge (Edvinsson, 1996; Sveiby, 1997; Saint-Onge, 1996) and attracted the attention of academicians in order to develop the theory for measurement (Bontis, Dragonetti, 1999; Roos, 1996). The competitive pressures caused by globalisation and continuous development of technology have made companies focus on continuous learning (Bontis, 1998, pp.63-76). The increasing value of knowledge assets resulted in a discrepancy between financial performance results and the stock values (Gupta, 2001, pp. 297-309). Despite the counter-propaganda of the financial experts the need for measuring intangible values has become an indispensable need for. The service companies are seen to accept that the work-force and customer relations increase the value of the company as much as technological investments and the process improvements (Eckstein, 2004, pp. 139-158).

The first study determining the relation between human capital and structural capital in the hospitality industry was conducted in twelve Norwegian hotels by Engstrom et. al. (Engstroem, 2003, pp. 287–303). Rudez and Mihalic have defined a four category intellectual capital model via the survey they performed in Slovenian hotels (Rudez, 2006). They have shown the impact of structural, human, end-customers and non-end customers on financial performances. Performance studies in the hospitality industry however show that, the financial performance demonstrates only the operational performance and can not present the business performance (Oh, 2001, pp.617-627); web processes caused the review of performance indicators of hotels (Chung, 2003, pp.119-125). Market recognition, full room stability and quality represented by stars are accepted as the basis of profitability in hotels.

The current definition of business performance is based on the vision of innovation and it is a common view in the industry that innovation in hospitality does not so much depend on technology as the production industry (Orfila-Sintez, 2005, pp. 851-865) but rather on human and customer values. There is a gap in the intellectual capital studies on hotels based on the fact that the vision and development for the future is rarely tested.

3. SURVEY

The survey is designed to test the following two hypothesis:

H1: Quality performance is dependent on Intellectual Capital factors

H2: Financial performance is dependent on Intellectual capital factors.

If both are proven to be true, then the business performance should be defined as an integration of all and the model is discussed.

3.1. The Scorecard

The questionnaire consisting of thirty-three questions asks for raw data in regard to eight questions, distribution information in percentages in regard to ten questions and managerial scoring in regard to fifteen questions. Questions such as the number of rooms and workforce and turnover rates in three years or number of servers, user

nodes, number of complaints and compliments are raw data used in calculations. The distribution of customer by segments of agencies, enterprise customers and individual customers, percentage of technology and research and development expenditures in the operational budget, percentage of different services in the sales revenue are used as indices. Organisational style, the effectiveness of consulting on operations, influence of employee competence on customer satisfaction are examples for questions evaluated by the manager interviewed. Responses allowed for the determination of thirty-one different factors defining performance, structural capital, human capital, customer capital.

Performance is defined by profitability (P1), liquidity rate (P2) and overhead rate (P3) which are the results of industry specific factors such as average capacity of rooms filled, real estate revenue and personnel and management costs. Quality stars indicate the operational quality (P4), variety of services offered (P5) and market recognition, (P6).

Structural Capital is investigated as a composite of organisational and process factors besides technological structure and future investment. The factors are organisational style (S1); service variety (S2) and process efficiency (S3); technology level (S4) driven by integrating information about technology budget as a percentage in operational budget, number servers installed, number of personal computers in use, communication technology in use, internet utilisation capacity, business application complexity and expenditure for research and development (S5).

Human Capital is defined as a function of number of employees/room (H1), personnel return rate (H2), professional know-how capacity (H3) measured as a function of operational consulting received and the experience in the hotel, education level (H4), training investment (H5) calculated on the budget and on the job training days per year and external training days/year, computer and Internet literacy (H6).

Customer Capital is questioned in segments of agencies, enterprise customers and individual customers. Hence, market penetration (C1), number of customised package requested (C2), number of complaints (C3) and compliments (C4) in a year, number of years the customer has been repeatedly staying in the same hotel (C5) are asked for each segment.

3.2. Methodology

This study accumulated the data and test the hypothesis following five steps:

Step 1. Reliability tests on data

Step 2. Run basic statistics on data

Step 3. Factor analysis on responses to choose the factors defining intellectual capital

Step 4. Test the two hypotheses.

Step 5. Define a model defining the relation between the business performance and the intellectual capital factors by linear regression.

3.3. Application

The sample of 25 five-star and 27 four-star hotels of Istanbul were chosen based on their institutionalisation level, in order to achieve reliable information. Hence, international chains, local chains or independent hotels are included based on the star evaluation of Ministry of Tourism. Assessors were high level managers with varying responsibilities, consisting of General Manager, Human Relations Manager, Sales and Marketing Manager and or Operations Manager. Interviews are run face-to-face. The analysis is performed by using SPSS 12.0

STEP 1: Data accumulated through questionnaires were run through the Cronbach alpha reliability test. The noise on data is corrected by returning to the assessor for verification.

Table 1:
IC Factors in Four and Five Star Hotels

	Mean	
	Five Star	Four Star
Room Capacity	291	112
Personnel	259	61
Profitability %	16.8	11.22
Occupancy (Full Room) %	68.2	71.07
Liquidation Capacity %	71.68	71.37
Market Recognition %	71.07	63.04
Prize	2.28	0.037
Organization Flexibility %	13.68	9.44
Process Efficiency %	69.12	74.21
Technology /Operations %	2.28	0.86
R&D /Operations %	1.32	0.22
E-Mail Utilisation %	66	49
Web Processes %	56	22
Rooms / Employee	1.12	1.84
Employee / PC	3.71	2.54
Personnel Turnover %	12.01	14.6
Know-How Capacity %	51.02	39.03
Consulting Days/Year	12	8
Training / Operations %	2.24	0.7
Computer Literacy %	74.6	48.4
Agent Penetration %	38.04	49.67
Enterprise Penetration %	42.36	30.26
Individual Penetration %	15.36	19.47
Customers Over 5yrs %	23	25
Number of Customized Requests	33	18
Number of Complaints / Year	43	38
Number of Compliments / Year	10	4

STEP 2: The results of the basic statistics are listed in Table 1, which shows that the four star hotels compete with the five star hotels in many fields. Some scaled factors such as organisational flexibility and personnel-customer interaction, which are exactly the same in both hotel types, are not given in the table.

STEP 3: Statistical analysis was normalised to convert all the information into scales so that, thirty-one factors can be reduced. The factor analysis with Varimax rotation allows for smoothing the original factor relations seen in equation 1 as in equation 2.

$$X_i = a_{i1} F_1 + a_{i2} F_2 + a_{i3} F_3 + \dots + a_{im} F_m + e_i \quad (1)$$

where, e_i is residual for X_i and a_{ij} is the scale found by $a_{ij} = \sqrt{\lambda_i} b_{ji}$ with λ_i being standard deviation of principal component i and b_{ji} being inverse of eigenvalue given by correlation matrix.

$$X_i = v_{i1} F_1^* + v_{i2} F_2^* + v_{i3} F_3^* + \dots + v_{im} F_m^* + e_i$$

so that (2)

$$F^* = (V'V)^{-1}V'X \quad \text{in matrix form}$$

F_j^* represents the judgment loaded on one intellectual capital for one variable as linear combinations of the responses where coefficient v_{ij} is the rotated b_{ji} .

This operation allowed for an advanced analysis to be run on 13 factors. The final factors that will be used in modelling and the scales of four and five star hotels are shown in Figure.2.

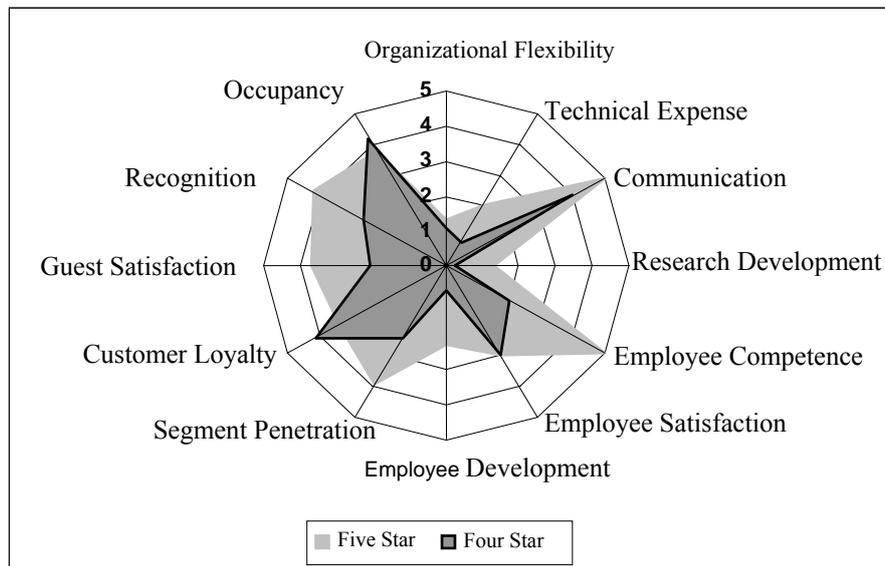


Figure 2: Scalar Representation of Factors Analysed

STEP 4: The targets of structural, human and customer capital are defined by modelling in balanced analysis of variances among the factors. It is seen that, structural capital is composed of organisational flexibility, technology used, and investment in research and development.

Human capital is defined by personnel competence, employee development and employee satisfaction. Customer capital is defined by segmented penetration, customer loyalty and customer satisfaction. The business performance is expressed in Occupancy rate and market recognition. R^2 of those factors differ from 0.106 to 0.219.

STEP 5. Multivariate regression is run to perform tests among the stars and the IC as well as the financial performance and the IC. The results achieved shows a high significance between financial and quality factors and intellectual capital factors. The quality performance (QP) gave R^2 of 0.312 when regression is run by predicting variables of structural, human and customer capital, suggesting a model given in equation 3.

$$QP = 2.778 + 0.142SC + 0.218HC + 0.114CC \quad (3)$$

Financial performance (FP) gave an R^2 of 0.261 thus proposing a model as shown in equation 4.

$$FP = 3.824 + 0.018SC + 0.339HC + 0.325CC \quad (4)$$

To model the business performance a loglinear analysis was run. The convergence criteria is found to be 0.250 in order to define business performance (BP) as a combination of all as in equation 5.

$$BP = QP * FP * SC * HC * CC \quad (5)$$

4. CONCLUDING REMARKS

This study was performed to explore relations among quality performance, financial performance and intellectual capital. Both quality performance and financial performance are found to be significantly dependent on intellectual capital. Structural capital was the least influential on financial performance although all three components of intellectual capital are found to have similar influences on quality capital. It is suggested that the business performance can be calculated as an integration of quality, financial and intellectual performances.

The results achieved demonstrate the reality that the hotel industry is expected to consider intellectual capital. Moreover, the quality stars which are given without considering the intellectual capital are suggested to change. It is also observed that financial performance is no longer sufficient to define the performance of a hotel.

The study was based on linear regressions, which is hardly the case in the real world. Since the hypothesis tested are found to be relevant, the study should be developed to suggest the development of a stochastic model.

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