Intellectual Capital (IC) as a Tool for Enhancing Managerial Decision in Egyptian Hotels

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ABSTRACT

The intellectual capital in the Egyptian hotel industry has been enhanced in the recent years. What is to a great degree attractive and vital since that day the Egyptian hotel industry is confronting expanded rivalry in the business. The paper exhibits an observational investigation of the improvement of intellectual capital in the hotel industry in Egypt and its relation to the decision making. The results showed the advancement of intellectual capital and uncover a few issues that the Egyptian hotel industry is as yet confronting in the field of intellectual capital. All the more precisely, employee competence, employee innovativeness, business processes, information technology and distribution channels were further elaborated in the given time of time. This paper investigates the importance and attention to IC in ten hotels in the Greater Cairo. A survey was utilized to pick up an inside and out understanding of the constructs identifying with IC inside indigenous Greater Cairo lodgings. The information gathering techniques utilized were recorded. The content examination was utilized as the significant method for dissecting the information utilizing SPSS program. The real finding is that there is no formal distinguishment of the construct of IC, yet the inserted practices inside the associations recommended the availability of such.

RESEARCH LIMITATIONS: The results of the research based on a limited survey that has been distributed to 10 hotels in, Great Cairo, Egypt. The research was targeting 150 managers. It is recognized that further research is necessary to establish the exact nature of the causal linkages between proposed applications of Intellectual Capital techniques on hotels to enhance managerial decision of the Egyptian Hotels in order to gain insights into practice elsewhere.

KEYWORDS: Intellectual Capital, Decision Making, Hotels, Hospitality Industry

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RESEARCH PROBLEMS

The problems that face most of the hotels are how to enhance managerial decision. This can be achieved through relating the Intellectual Capital Techniques with the Managerial Decisions. The research questions are:

a) How to examine the effect of Intellectual Capital on managerial decisions of hotel managers?
b) To what extent the application of the proposed model can be verified in the Egyptian five star hotels?

INTRODUCTION

Intellectual capital (IC) was developed as a subject deserving of scholastic and practical search in the early 1990s while the research and practice of IC have not been prevalent in the lodging business up to this point. Not many measurements pinpointed the value of IC in the hospitality literature. The reason behind this research is to create a measurement scale in hotels to recognize the dimensions and sub-dimensions of IC in the hotel industry [1].

There are three measurements of hotel IC – human, organizational, and client capital. As the hotel business has started to be intensively knowledgeable, many hotels explore the routes so that they can enhance their functioning and increase the worth of their assets [1]. The workforce and client relations intensify the value of service organizations as much as technological venture and procedures upgrades do [2]. Recently, hotel operations have perceived the significance of managing intellectual resources as a method for achieving and keeping the competitive edge [3]. Numerous industry pioneers state that effective hotels spend in non-tangible assets such as Manpower. New open doors in the hotel business are made from knowledge-based resources and such resources are known as intellectual capital [1].

Research on this broad subject of IC started in the early 1990s and was mostly focused on increasing awareness on the presence and worth of intangible assets inside associations and about creating differentiation models for IC in different fields [4]. On the other hand, different from other areas, interests on IC study and practice have started lately. Not very many measurement frameworks have been created to determine and improve the value of IC pertinent to the lodging industry [1].

The success of the hotel industry mainly relies upon the capacity to adjust to the changed business environment, which thusly relies upon the knowledge and IC that the hotel industry possess. Expanded rivalry in the business sector significantly affects competition in the hotel industry and encourages improvement of IC as competitiveness tool [5].

The hospitality industry was distinguished as an exploration field because of its predominant function in the social and economic improvement [6]. Moreover, it is concerning that regardless of the advancement occurring with respect to the design of more efficient measurement frameworks, hotels are yet concentrating on more conventional types of performance measures. The success of service companies does not rely upon substantial resources however on such factors and on managing its intangible assets [7].

The absence of theoretical hypothetical framework constrains the practical argument on this critical management field. IC measurement is a significant method for key business and marketing management for the hotel industry. A precise measurement system can give the hotel business significant advantages that will oversee intangible resources in a manner that accomplishes competitive edge.

This paper will explore the qualities and importance put on IC in the Egyptian's hotels industry by surveying the relevance and level of awareness to IC by hotels management and investigates how decision making can be enhanced through growing leaders' capacity to get to and process data identified with intelligent capital. It additionally will depict how decision making in hotels can be supported by IC to improve hotel performance. In this research, an analysis of the current literature of IC with reference to the hospitality industry will be made. Thus, this study might fill a gap in the literature by proposing an IC measurement scale for the hotel industry.

LITERATURE REVIEW

Intellectual Capital stands for organization assets that have been, described and formalized to make resources of a higher worth [8]. A three concept model of a human, social and structural capital structures the theoretical frame. This categorization is consistent with [9] who classified intellectual capital into staff competency, internal and external structure, human, structural and client capital. Literature contributions by [10] and [11] further constructed the IC characteristics.

Research on 211 listed enterprises, and figured out that intellectual capital had a huge role in creating organizational values and competitive advantages [12]. Its capability can be more effective when there is interaction among human, structure and customer capital. Additionally brought up in their research; the hotel industry must develop its intellectual capital to sustain its competitive edge [1].

Human capital:

It is not a materialistic resource of an organization considered by the staff number, however, it is connected to employee education, knowledge, training, experience, behavior towards life and business, skills, hereditary legacy, qualities and values [13]. Human capital is a multidimensional concept/ construct including tangible and intangible perspectives which considered a one component of the productive process, human capital allude to the explicit knowledge which individuals have, and, in addition, their capacity to obtain it, which is beneficial for the organization mission and incorporates values and attitude, aptitudes and skill. The hospitality literature is loaded with the expression "workforce", which is being utilized as a proxy for human capital, as one of the intangible resources. Workforce as one of the elements of the intangible asset value of the hotels industry [14]

In the hospitality industry, staff skill, work attitude, and creativity is proposed as measurements of human capital by [1]. Human capital corresponds to quite a bit of an organization's knowledge. It is considered a crucial asset in accomplishing competitive advantage [15]. Human capital concentrates on the economic value of what can be delivered by an employee [16] and symbolizes the individual and aggregate employee competency. Competence is the capacity to perform an agreed assignment, comprising of education, information, and skills. In the event if an intellectual employee does not function in the organization his and/or her insight knowledge and skills can't be endorsed [17]. Thusly, the organization must support their staff to show their capability through investing in employee education and training courses [4][18].

Human capital constitutes not just all the know-how and skills obtained by staff to be significant, critical, additionally the dedication of every person and variables such as his and/or her inspiration and work satisfaction. Human capital is vital for any association, as a source of innovativeness, development innovation, and strategic renewal [8].

Employees' innovation empowers them to utilize their insight and abilities flexibly and to be creative constantly [17]. Similarly, elaborated intellectual agility, which allows employees to alter practices and consider a creative solution to obstacles and problems [19].

Managerial levels in all hotels are alike in their inclination for utilizing and valuing the human capital indicators over the structural capital indicators. Their reactions may reveal their knowledge as supervisors in general. More familiar and agreeable with this area, they comprehend the prompt importance of individuals to the success of their operations. The value that all hotels prioritize on the top four indicators, leadership skills, employee happiness, employee inspiration, and years of experience in the field, addresses their aim to retain their most vital intangible asset (people) [20].

Managing human capital is a spontaneous process in light of the fact that bosses do not combine their endeavors to handle human capital (training, tutoring, mentoring, performance indicators, competency profiles, employee satisfaction questionnaires) to the hotel performance. At the end of day, managers know the value of human capital without the evidence for increased input, for instance, training, will prompt amplified output performance for the hotel. Without creating solid (measurable) proof indicating positive long-term results, intellectual capital will keep on being dealt with as a cost instead of an investment. The thought that not all human asset is of equivalent value is conflicting with the fact that training is habitually offered no matter across the board. In managing intellectual capital, it would be valuable to make the difference between value-added versus non-value-added human capital and to optimize human capital in connection with the strategic needs of the firm [21].

Relational capital:

Is portrayed as either connection presented between staff and external economic actors [22], or associations presented among staff and other units within the organization [23] Come up with the term customer capital as a division of relational capital [8]. On the other hand, [24] concept of market assets combines several factors enclosed in the construct of relational capital most related to the hotel industry. A substantial part of a hotel's value is intangible and depend on the goodwill of its brand name [25]. Hotels associate with the brand and using their focal reservation framework expanded room incomes by more or less thirty-four every penny [14]. Other empirical researches have demonstrated that name identification and a good reputation for superb quality service builds the value of a successfully operating hotel [26]. These statements are backed in the marketing literature which has shown the connection between such market resources and organization's performance. A good reputation is essential to get a competitive edge through cross-selling and expanded customer loyalty [27].

Customer capital is described as the know how inserted in marketing channels and client relationships that a firm creates through leading business [18]. Customer capital is the fundamental component in the transformation of IC into market value, operating as a link and means for the operations of IC [17]. In comparison with human and organizational (structural) capital, customer capital has a more straightforward impact on a hotel's value and organizational performance [4]. Likewise, customer capital can be the establishment for understanding the potential requirement for customer services. Organizations build customer capital through the associations that are created between their internal agents (i.e. management and employees) and their clients [28].

Relational capital is the value that adds to current and prospect incomes, coming from a firms' connection with its client [28]. Indicators of relational capital can be customer satisfaction and trustworthiness, handling customer, customer orientation, market share, and distribution channels [26]. Relational capital is also comprised of customer happiness and loyalty, image and brand, and direct distribution channels [1].

In today's aggressive market environment, an organization ought to try to enhance the product and service qualities to satisfy clients and make them loyal. Profoundly, happy clients are prone to end up faithful to the organization, by growing its profits. Hotels can make value through investing in IC by analyzing 371 full-service and 192 limited-service hotels to inspect the degree to which accessible forms of IC increase performance of lodging properties, the authors arranged resources as either physical or IC [3]. They then categorized IC into the five classifications: system capital, client capital, service staff, support staff, and professional staff. The study reasoned that whether a hotel is a limited or full service, it would manage the most proper investment outcome of substantial resources and specific forms of human resources to accomplish long-term performance. Classical IC measurement has managed primarily with three classifications: human, organizational, and relational capital. Built up the four-classification IC framework in the hospitality business that recognizes human, structural, end-client bond, and non-end-client bond/ relationship capital. This novel measurement is the splitting up of relationship capital into end-client relationship capital, (for example, travel agencies and tour operation) and non-end-client relationship capital, (for example, government, affiliations and non-government associations). The authors contended that such a division recognizes the expanding significance of distinctive connections in the hospitality industry [1].

Structural capital:

Integrates all the non-human storage facilities of learning in organizations, such as databases, organizational charts, process manuals, strategies, routines, legal parameters, patents, trademarks, research and development and anything whose value to the company is greater than its tangible value [8]. Structural capital has been classified into innovation capital and organizational capital, characterizing innovation capital as the capacity to expand on previous knowledge [11]. Study on innovation in the tourism sector identified product innovation, process innovation, management innovations, logistics innovation and institutional innovations as innovation categories [29]. Product innovation includes loyalty programs and environmentally sustainable accommodation facilities; process innovation relates to computerized management and monitoring systems; management innovations includes new job profiles, collective structures and authority systems; logistics innovation involves the vertical connection in the food and beverage industries and integrated destination

information systems, and institutional innovations constitute the collaborative and regulatory structures meant at reforming the financial systems to meet the needs of the tourism industry [29].

It has been contended that structural capital is in charge of the organization's replenishment and value making techniques. The linkage between human capital, innovation, and knowledge management is important. Knowledge management is significant for tourism organization to react, adjust, survive and contend despite expanding environmental changes [30].

Structural capital is routinely used to allude to the methodologies (routine) and processes that are recorded and become adequate to the organization as a record of how things are carried out to keep up adequacy and maintain effectiveness. It is structured by the intellectual input of the employees of the firm but it belongs to the firm. 'culture is broad and significant component of Structural capital'[31]. Structural capital is comprised of management philosophy, culture, business processes, and information technology in the hospitality industry [1]. Efficiency and effectiveness, renewal and development, systems and procedures, and atmosphere are also proposed as components of structural capital in the hotel industry [26]. Structural capital relates to the mechanism and structure of a company that can help backing and supporting employees' optimum intellectual performance.

Furthermore, structural capital incorporates the management philosophy and systems for leveraging the organization's ability. Structural capital as it includes process manuals, strategies, routines, and any other thing whose value to the organization exceeds its material value [8]. A few researchers have lately recommended encompassing culture, process, and innovation in structural capital [32]. A company's culture indicated the values, faith, and behavioral criteria agreed and shared by staff. Company culture under the direction of a great management philosophy can be a valuable asset. Hotels with solid structural capital have a culture that motivates staff to test, innovate, learn, and fail. The business methodology is one of the most effective tools of insuring that a hotel accomplishes its operational duties. The focal point of total quality management and the company reconstruction is on the transformation in operational processes to improve operational efficiency and effectiveness [17]. In this new era, economic growth is determined by innovation, not an investment.

Managers in all organization recognized that the structural indicators were the least helpful of the three indicator categories. The findings recommend that supervisors may not perceive full value-added concerning the communication and the interaction of human and structural capital in altering implicit intellectual capital into explicit intellectual capital through the utilization of processes, systems, and technology. "People are not a company's most important assets, they are its most important raw material". They do not be assets until what they know is conveyed for the client [33].

The connection between human capital and structural capital is lively/ dynamic. "Human capital is what builds structural capital, but the better your structural capital, the better your human capital is likely to be" [34]. The respondents' absence of preference for the structural indicators may be ascribed to the way that they are more weighted with information technology indicators.

IC and its impact on firm's performance:

In an age of globalization, technological advancement and worsening tourism demand, rivalry in the hospitality industry have turned out to be very aggressive. Hotels that follow and respond to clients' needs and preferences achieve at higher levels while performing sustained success and keeping a solid competitive advantage [35]. Intellectual capital and innovation in this setting let hotel manager's present new services that enhance quality, accordingly both meeting the altering requirements of potential clients and growing their market share, sales, and profits. This is especially critical for the hotels industry. Hotels, therefore, sustain their competitive edge by stressing on differentiation strategies presenting innovative services, and offering quality standards that meet the expectations of their customers [36].

Even though marketing research elaborates on the association between customer orientation and business performance, so far there has been insufficient research that has adopted the influence of customer orientation on hotel function and observed a positive relationship between them. In addition to customer orientation, intellectual capital, and innovation also importantly influences a hotel's industry outcome regarding improved competitiveness and extensive improvements in performance [37].

The current literature proposes that customer orientation is a vital reason for utilizing intellectual capital and innovation. A customer-oriented company is more prone to embrace services and products that meet customers' needs. Some researchers have studied how both customer orientation and innovation affect business performance. In the hotel context, the insufficient research that has scrutinized the customer orientation–innovation–performance chain so far has contended that the relationship between customer orientation and performance is not direct, however; it is aided by using intellectual capital and innovation [38].

For interpreting how customer orientation affects the competitive parameters of an organization, it is crucial to research the intellectual capital and innovation as a facilitator. On the other hand, current researches in the hospitality industry determine

intellectual capital and innovation by concentrating either on the behavioral measurement of innovation, alluding to the number of innovations realized or on its innovativeness, in which how manager are encouraging new ideas. They, therefore, depict a more attitudinal dimension of innovation [38].

A powerful intellectual capital management model embodies organizational procedures and processes that request a synergistic connection of data and information-processing capacity of information technologies, and the creative and innovative capacity of people [39]. A tremendous variety of intellectual capital models is present, elaborating on the tangible and intangible aspects of intellectual capital management. Measurement models presented for company level analysis try to create the financial and non-financial value-generating aspects of the company for external reporting that leads to positive performance. The most widely recognized for measuring intellectual capital management stress that non-financial measures must complement the financial measures.

Success in hotels industry depends on business relations, work force and the information systems sustaining the service processes to exhibit the effect of intellectual capital on business performance with the objective of enhancing innovation in substantial metropolitan hotels [40]. These facts lead to recognition and distinguish of the criticalness and valuing Intellectual Capital in hotel management.

The areas of knowledge management (KM) and intellectual capital (IC) are focused on implicit assumption that superior business performance is the reason of management of the knowledge in staff heads. What has been carried out typically is associated more with specific pieces of IC (e.g. human capital) and whether they impact performance? Paying attention to knowledge assets or intellectual capital, improved financial performance will not be observed. Industries vary in the nature of the physical assets they request (capital, equipment, base labor) and, obviously, in the nature of the intangibles that prompt success—the intellectual capital. The concepts are focused on more established theory, developing out of the resource-based theory of the organization proposing that modern competitive lead originates from some unique, hard-to-copy facet of the firm offering a core competency instead of traditional labor and capital [41].

IC and decision-making:
Comprehending the IC is just the first step to attain to a basic target: assessing and evaluating the organizational IC in order to sustain the top management decisions in managing the investments on intangible assets. Despite the fact that most intangible assets may not be assessed in the financial terms that are currently utilized for tangible assets, their function in the value creation process must be taken into consideration in order to manage and plan the organizational investments appropriately. While IC has attained increasing attention from academic researchers and practitioners, it is not well-known to managers of hotels and they do not take into account IC and its attributes in their decision-making process. Using intellectual capital is all about helping individuals to understand their abilities and potentials: the main initiative behind intellectual capital is to discover right approaches to stress on individuals' talents and innovation. In implementing this, It is better to figure out some means of engaging the owners of intellectual capital by as many means as possible and try to use their intellectual contributions to organizational decision making on a day-to-day basis [42].

Managers try to acquire a distinct approach to help hotel utilization of intellectual capital and, significantly, this methodology is intended to empower hotel managers to be aware and responsible for the whole process. This approach is concerned with meeting organizations different requirements according to their different degrees of maturity. Developing an enterprise's strategy, as well as executing of that strategy, as an ongoing process of building collaborative decisions that are either to involve most of the employees in the enterprise or to support the intellectual capital approach of reinforcing people. The IC acquires collaborative decision making within a firm to strategically build up the company and would be most valuable for their business. Elaboration of decision-making theory within this opinion asserts that the collaborative decision-making process should transmit within problem-solving paradigm: affecting through the phases of Intelligence (searching for the reasons that made the decisions). Design (inventing, developing and analyzing possible courses of action), and Choice (selecting a particular course of action from those available according to what has been presented in the design phase) [43].

PROPOSED MODEL

In studying hotels performance measurement, it is essential to identify the key constructs of the intellectual capital represented in the Human capital, structural capital, relational capital, and Quality Capital, to be measured. The researcher added the Quality Capital measures as a fourth construct for the ordinary and well-known IC model. It has been thought that the quality in the field of hospitality is considered one of the most important competitive advantages and it differentiates any hotel from other hotels. Although many models exist for large businesses, which are aimed at identifying these key dimensions, many are too complex for hotels to be applied.

The outputs are hybrid from tangible and intangible values that matched with the products and services presented that constitute the nature of hotels, whereas outcomes of the proposed model will help decision makers to improve hotel performance. The model is proposing specific measures under each of the constructs. The model is adopted to be applied to the special characteristics of the Egyptian hotels, to maximize the utilization of the intellectual capital for improving the quality of decision making that leads to improving the performance of managerial ways in hotels.
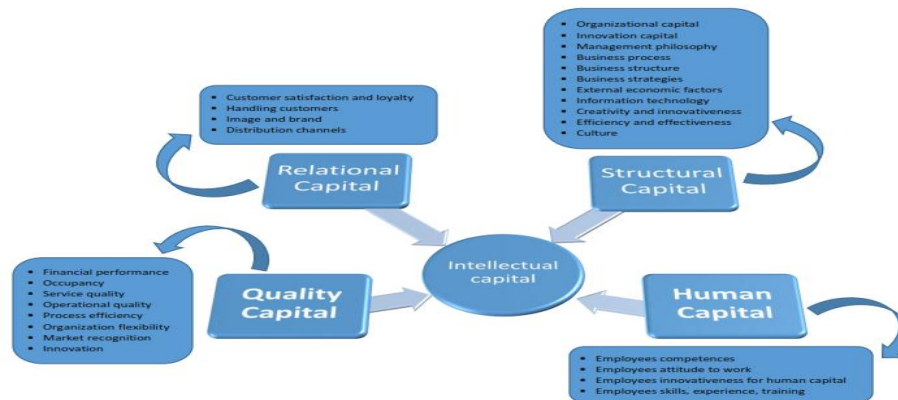
Figure 1: Intellectual Capital Proposed Model

METHODOLOGY
RESEARCH OBJECTIVES:

The objectives of the study are as follows:

a)   Enhancing the influence of Intellectual Capital on managerial decisions in five-star hotels.
b)   To verify the applicability of the proposed model in the Egyptian 5-star hotels.

RESEARCH HYPOTHESES

a)   Intellectual Capital has a positive effect on managerial decisions in hotels.
b)   The proposed model enhances the performance of five-star Egyptian Hotels.

Secondary data were collected from relevant textbooks, journals, and online databases. Primary data were collected using a questionnaire as a data collection instruments. The instrument was applied in 10 five-star hotels in Greater Cairo. A structured questionnaire was designed and distributed to 150 managers in these hotels. The questionnaire was designed to examine the effect of Intellectual Capital on managerial decisions of hotel managers and to what extent the application of the proposed model is verified in the Egyptian five-star hotels.

A questionnaire was designed and directed by managers in 5-star hotels located in Great Cairo Egypt, to pick up information on the relationships between the Intellectual Capital techniques and managerial decisions in the hospitality industry and its effect on hotel performance. The judgmental sample included 10 hotels covering luxurious five-star hotels, and 150 questionnaires with hotel top, middle, first line managers were distributed. respondents were 125, and 25 questionnaires were excluded for non-validity, to reach approximately 125 valid questionnaires that were returned with the respondent rate of 83.33 % which is statistically acceptable for data analysis. Data obtained was analyzed by using the Statistical Package for Social Sciences (SPSS). A combination of different techniques was used including Reliability and intrinsic validity, logistic regression model, and Neural Network technique. The investigated variables in figure (1) were constructed in a model. The model was used to examine the impact of these constituents on managerial decisions. The constituents of this model are:-

Human capital and to measure it the researcher proposed the following components (employees competences, employees attitude to work, employees innovativeness for human capital, and employees skills; experience; and training). Structural capital and to measure it the researcher proposed the following components (organizational capital, innovation capital, management philosophy, business process, business structure, business strategies, external economic factors, information technology, creativity and innovativeness, efficiency and effectiveness, and culture). Relational capital and to measure it the researcher proposed the following components (customer satisfaction and loyalty, handling customers, image and brand, and distribution channels). Quality Capital and to measure it the researcher proposed the following components (financial performance, occupancy, service quality, operational quality, process efficiency, organization flexibility, market recognition, and innovation).

RESULTS AND DISCUSSION

1- Reliability and intrinsic validity for research variables: Table (1): Reliability and intrinsic validity for research variables

No	Dimension	Reliability coefficient	intrinsic validity
1	**Human Capitals**	0.938	0.9685
2	**Structural (Organization) Capital**	0.922	0.9602
3	**Relational (customer) Capital**.	0.829	0.9104
4	**Quality capital**	0.789	0.8882
	Total	0.925	0.9617

According to Table (1), the researcher find out that reliability coefficient and intrinsic validity for research dimensions are (0.9685), (0.9602), (0.9104), and (0.8882) respectively; highly internal consistency based on the average inter-item correlation. The most four dimensions with highly Reliability coefficients are **Human Capitals**, **Structural (Organization) Capital**, **Relational (customer) Capital**, and **Quality capital**, with Reliability coefficient (0.938), (0.922), (0.829), and (0.789) respectively.

1. Human Capitals: Table (2): Descriptive statistics for Human Capitals

NO.	Statements	MEAN	SD	CV	RANK
1	Does human Capital has a positive effect on managerial decisions	3.62	0.518	14.31	**4**
2	Employees competences	4.00	0.220	5.50	**1**
3	Employees attitude to work	3.63	0.501	13.80	**3**
4	Employees innovativeness for human capital	3.58	0.542	15.14	**5**
5	Employees skills, experience, training	4.30	0.568	13.21	**2**
	TOTAL	**3.8272**	**0.23602**	**6.17**	**--**

According to Descriptive statistics in table (2), it can be concluded that:

- The most three homogeneous variables are Employees competences, Employees skills, experience, training, and Employees attitude to work, with a coefficient of variation (5.50%), (13.21%), (13.80%) respectively.

- While the value of total weighted mean for Human Capitals is (**3.8272**), with a coefficient of variation (**6.17%**), therefore we have sometimes direction to the Human Capitals dimension.

2. Structural (Organization) Capital:

Table (3): Descriptive statistics for Structural (Organization) Capital

NO.	statements	MEAN	SD	CV	RANK
1	Does organizational Capital has a positive effect on managerial decisions	3.63	0.516	14.21	**7**
2	Organizational capital	3.95	0.215	5.44	**2**
3	Innovation capital	3.58	0.511	14.27	**8**
4	Management philosophy	3.88	0.468	12.06	**5**
5	Business process	3.66	0.567	15.49	**10**
6	Business structure	3.98	0.126	3.17	**1**
7	Business strategies	3.63	0.484	13.33	**6**
8	External economic factors	3.64	0.614	16.87	**12**
9	Information technology	3.96	0.234	5.91	**4**
10	Creativity and innovativeness	4.00	0.220	5.50	**3**
11	Efficiency and effectiveness	3.73	0.573	15.36	**9**
12	Culture	3.70	0.582	15.73	**11**
	TOTAL	**3.7935**	**0.26159**	**6.90**	**---**

According to Descriptive statistics in table (3), it can be concluded that:

- The most three homogeneous variables are Business structure, Organizational capital, and Creativity and innovativeness, with a coefficient of variation (3.17%), (5.44%), (5.50%) respectively.

- While the value of total weighted mean for Human Capitals is (**3.7935**), with a coefficient of variation (**6.90**%), therefore we have sometimes direction to the Human Capitals dimension.

3. Relational (customer) Capital: Table (4): Descriptive statistics for Relational (customer) Capital

NO.	statements	MEAN	SD	CV	RANK
1	Does relational Capital has a positive effect on managerial decisions	3.62	0.505	13.95	1
2	Customer satisfaction and loyalty	3.76	0.734	19.52	5
3	Handling customers	3.70	0.672	18.16	3
4	Image and brand	3.47	0.617	17.78	2
5	Distribution channels	3.62	0.668	18.45	4
	TOTAL	3.64	0.59178	16.26	---

According to Descriptive statistics in table (4), it can be concluded that:

- The most three homogeneous variables are Image and brand, Handling customers, and Distribution channels, with a coefficient of variation (17.78%), (18.16%), (18.45%) respectively.

- While the value of total weighted mean for Human Capitals is (**3.64**), with a coefficient of variation (**16.26**%), therefore we have sometimes direction to the Relational (customer) Capital

4. Quality Capital:

Table (5): Descriptive statistics for Quality Capital

NO.	statements	MEAN	SD	CV	RANK
1	Does the proposed model applicable in Egyptian hotels or not?	3.19	0.470	14.73	7
2	Does the proposed model enhances the performance of the Egyptian five-star hotels	3.64	0.559	15.36	10
3	Financial performance	4.00	0.254	6.35	3
4	Occupancy	3.66	0.540	14.75	8
5	Service quality	3.89	0.341	8.77	5
6	Operational quality	3.56	0.530	14.89	9
7	Process efficiency	3.88	0.372	9.59	6
8	Organization flexibility	4.00	0.220	5.50	1
9	Market recognition	3.98	0.219	5.50	2
10	Innovation	3.93	0.340	8.65	4
	TOTAL	**3.7728**	**0.22446**	**5.95**	---

According to Descriptive statistics in table (5), it can be concluded that:

- The most three homogeneous variables are Organization flexibility, Market recognition, and Financial performance, with a coefficient of variation (5.50%), (5.50%), (6.35%) respectively.

- While the value of total weighted mean for Human Capitals is (**3.7728**), with a coefficient of variation (**5.95**%), therefore we have sometimes direction to the Quality Capital dimension.

2- The logistic regression model

There are many important research topics for which the dependent variable is "limited." or categorical response variable. Logistic regression is useful for situations in which you want to be able to predict the presence or absence of a characteristic or outcome based on values of a set of predictor variables. Logistic regression coefficients can be used to estimate odds ratios for each of the independent variables in the model. Logistic regression is applicable to a broader range of research situations than discriminant analysis.

Table (6): Full Entry logistic regression model to determine effect of intellectual capital on the decision-making in the hotels in Egypt

No	Independent Variables	Estimated coefficient	Wald test		Chi –square test		R²
			value	Sig.	value	Sig.	
1	constant	-0.516	33.692.	***0.000	57.497	***0.001	69.0%
2	Human Capitals	1.597	9.794	***0.002			
3	Structural (Organization) Capital	2.030	25.944	***0.000			
4	Relational (customer) Capital.	1.791	26.312	***0.000			
5	Quality Capital	0.890	23.658	***0.000			

*   Parameter is significant at the (.05) level

** Parameter is significant at the (.001) level

***Parameter is significant at the (.001) level

Table (7): Full Entry logistic regression model to determine effect of intellectual capital on the performance of the hotels in Egypt

No	Independent Variables	Estimated coefficient	Wald test		Chi –square test		R²
			value	Sig.	value	Sig.	
1	constant	-0.688	37.140	***0.000	56.809	***0.000	55.20%
2	Human Capitals	2.067	20.939	***0.000			
3	Structural (Organization) Capital	1.045	15.686	***0.000			
4	Relational (customer) Capital.	0.757	44.695	***0.000			
5	Quality Capital	0.562	35.154	***0.000			

*   Parameter is significant at the (.05) level

** Parameter is significant at the (.001) level

***Parameter is significant at the (.001) level

According to Stepwise multiple logistic regression models in table (7) and (8) researcher can conclude the following:

a)   Chi –square test:

The chi-square statistic is the change in the -2 log-likelihood from the previous step, block, or model. Use the "Model Chi-Square" statistic to determine if the overall model is statistically significant, Like F test in linear regression model, since The value of "chi-square test" is (57.497) with significant at the (0.001) level for the first dependent variable which is the performance of hotels in Egypt, and (56.809) with significant at the (0.000) level, for the second dependent variable which is the effect of the decision making process in hotels, then the researcher concludes that the overall independent variables statistically significant impact on the dependent variables or the model is fitted to logistic regression.

b)   The Classification table:

The classification table helps you to assess the performance of your model by cross-tabulating the observed response categories with the predicted response categories. For each case, the predicted response is the category treated as (1), if that category's predicted probability is greater than the user-specified cutoff. Cells on the diagonal are correct predictions, whereas Cells off the diagonal are incorrect predictions. This can be deduced from the table (6) and (7) as presented above.

c)   Coefficient of determination:

The Independent Variables accepted in the model explain (69.0%) from total variation of log odds ratio or logit model ,i.e., dependent variable, **effect of intellectual capital on the decision making in the hotels in Egypt**, and (55.20%) from total variation of log odds ratio or logit model ,i.e., dependent variable, **effect of intellectual capital on the performance of the hotels in Egypt and** the rest percent due to either the random error in the regression model or other Independent Variables excluded from regression model**.** Larger pseudo r-square statistics indicate that more of the variation is explained by the model, to a maximum of (1).

d) Wald test:

It would be useful in determining the significant value of each of the individual independent variables coefficient in the logistic regression model. The ratio of B to S.E., squared, equals the Wald statistic. If the Wald statistic is significant (i.e., less than 0.05) then the parameter is useful to the model. The significant independent variables are shown in the table (6)

and (7) presented above.

2- Logistic Regression model:

$$P(Y) = \left[1 + e^{-(-0.516 + 1.597 Human + 2.030 Structural + 1.791 Relational + 0.890 Quality)} \right]^{-1}$$

By substituting the values of independent variables, we can then predict the dependent variable: **effect of intellectual capital on the decision-making in the hotels in Egypt**.

$$P(Y) = \left[1 + e^{-(-0.688 + 2.067 Human + 1.045 Structural + 0.757 Relational + 0.562 Quality)} \right]^{-1}$$

3- Neural Network technique

Neural networks can be used to extract patterns and detect trends. A trained neural network can be thought of as an "expert" in the category of information it has been given to analyze. This expert can then be used to provide projections given new situations of interest.

The researcher used the neural network technique to calculate the relative importance of each independent variable as for affecting the level of performance for auditing firms.

Table (8): Neural network technique for the variables of the proposed model's perspectives

No	Independent Variables	Estimated importance
1	Human Capitals	24.1%
2	Structural (Organization) Capital	31.7%
3	Relational (customer) Capital.	26.2%
4	Quality Capital	18%

According to the table (8) of neural network results, the most important of the dimensions is the Structural (Organization) Capital, then Relational (customer) Capital then Human Capitals, and then come the fourth perspective of the proposed model, which is Quality Capital.

HYPOTHESES VERIFICATION:

The hypotheses of the research had been tested and verified through the research methodology, which included in the literature review and the empirical study.

The logistic regression results showed the relationship between the four dimensions measures of the IC proposed model via the output achieved by the researcher through the most influential measures that are included in the proposed model.

The logistic regression divided into two phases. The first phase shows a degree of effect for each of the four constructs of the proposed model on the quality of decision-making process in the Egyptian hotels, which verify the first hypothesis. R^2 of the phase explains 69% of the output.

The second phase shows the effect of intellectual capital on the performance of the Egyptian hotels, which verify the second hypothesis. R^2 of the phase explains 55.2% of the output.

The first hypothesis has been verified through the literature review and has been verified through the statistical analysis and the logistic model, which support the positive effect IC model on managerial decisions. The second hypothesis has been verified through the statistical analysis and the logistic model that showed the validity of the model in enhancing the performance of hotels in Egypt.

The Neural network analysis for the variables shows also the importance of the four perspectives of the intellectual capital proposed model, which have been verified to be used for enhancing performance and decision-making process in Egyptian hospitality industry.

The researcher reached the following results:

- The proposed model application enhanced the decision making through the performance quantitative measures used in the four perspectives of the model.

- The four dimensions of IC proposed model have been verified through the statistical analysis and indicated the suitability of the proposed model for improving the performance and the quality of the decision-making process in the hospitality industry.

RECOMMENDATIONS
Due to the high level of competition in the hospitality industry every hotel is trying to attract new customers and retain their old ones' to turn them into loyal customers, and due to this fact, each manager tries to enhance his/her way of management to valuate his/her decisions to affect hotel performance. The researcher recommendations to hotel managers are the following:

1. Hotel managers must focus more on performance quantitative measures as the research results showed that this is a very important item.
2. Create a measurement scale in hotels to recognize the dimensions and sub-dimensions of IC in the hotel industry.
3. Hotel operations must perceive the significance of managing intellectual resources as a method for achieving and keeping a competitive edge.
4. The success of service industry does not rely upon substantial resources however on such factors and on managing its intangible assets.

CONCLUSION
This study contributes to the extant literature by providing empirical evidence on IC in the Egyptian hospitality industry. It also contributes to the IC literature by deconstructing the components of IC to create a classification that can be used to describe the attributes of IC as it relates to the hospitality industry. So far, the research conducted provides just a general picture of intellectual capital in the Egyptian 5-star hotels. The results of the study can be used as a data in further research on the measurement and development of intellectual capital within a wide scale of the Egyptian hotels.

In summary, the findings point to the need for hotels to adopt a more comprehensive approach to managing intellectual capital that emphasizes the value-added- affect of dynamically managing all the four proposed classifications of intellectual capital. Finally, it can be concluded that although managers of these hotels were unaware of the constructs of IC, (Human Capital "HC", Relational Capital "RC", Structural Capital "SC", and Quality Capital "QC"), their day to day activities and embedded practices within the hotels provided evidence that these constructs existed within the hotel.

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توظيف رأس المال الفكري في صناعة الضيافة المصرية

الملخص العربي

تساهم هذه الدراسة في إثراء الدراسات المتعلقة بموضوع البحث من خلال توفير الأدلة التجريبية عن رأس المال الفكري في صناعة الضيافة المصرية. أيضاً تساهم في تفسير مكوناته لتسهيل إجراءات إستخدامه والإستفادة منه. حتى الآن، البحوث التي أجريت توفر فقط صورة عامة عن رأس المال الفكري في الفنادق الخمسة نجوم. وتشير نتائج الدراسة إلى ضرورة إعتماد الفنادق على نهج أكثر شمولا لإدارة رأس المال الفكري وهذا ما تؤكده القيمة المضافة التي تؤثر على إدارته بشكل حيوي من خلال التصنيف الرباعي المقترح. كما أن نتائج هذه الدراسة يمكن أن تستخدم في مجال قياس وتطوير البحوث على رأس المال الفكري ضمن نطاق أوسع من الفنادق المصرية. أخيراً، يمكن الاستنتاج أنه على الرغم من أن مدراء الفنادق غير مدركين لمكونات رأس المال الفكري (رأس المال البشري "HC"، رأس المال للعلاقات "RC"، رأس المال التكويني "SC"، ورأس المال لجودة الأداء "QC") بمفهومها العلمي إلا أن ممارسة أنشطتهم اليومية تؤكد على توفرها في الفنادق.

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