

## Intellectual capital and effect on marketing performance an empirical study in Jordanian pharmaceutical industrial firms

**Mohammad Salameh Almasarweh\***

*The University of Jordan  
Department of Business Administration  
Aqaba  
Jordan  
m.almasarweh@ju.edu.jo*

**Mahmoud Barakat Alnawaiseh**

*The University of Jordan  
Department of Business Administration  
Aqaba  
Jordan  
m.alnawaiseh@ju.edu.jo*

**Ahmed Atallah Alsaraireh**

*The University of Jordan  
Department of Computer Information Systems  
Aqaba  
Jordan  
ah\_8545@yahoo.com  
a.alsaraireh@ju.edu.jo*

**S. Al Wadi**

*The University of Jordan  
Department of Risk Management and Insurance  
Aqaba  
Jordan  
Sadam.alwadi@yahoo.co.uk*

**Abstract.** This study focuses on intellectual capital and its effect on marketing Performance through an economy based on knowledge. This study aims to determine the role of intellectual capital and its different dimensions (human capital ; structural capital and technological capital ) in the company of our study. A questionnaire was developed to ensure the relationship between the independent and dependent variables (marketing Performance).

The hypotheses were tested using SPSS statistical software, the analyzes results to several outcomes including the existence of a statistically significant relationship between the intellectual capital and marketing Performance. One of the most important recommendations of the study is to increase attention to and management of intellectual capital, and it must be managed as an important source To achieve excellence, and the need to deal with intellectual capital as the most important strategic resource possessed

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\*. Corresponding author

by the company, and maintain the continuity of the active component in light of the tremendous technological development that the business environment.

**Keywords:** intellectual capital, human capital, structural capital, technological capital, marketing performance.

## 1. Introduction

Intellectual Capital is an important and modern concept, which scientists and researchers in the field of administration have started discussing widely. This underscores the meaning of human capital in building organizations and bringing operational success. There are many definitions of human capital.

Today, business organizations belong to a highly dynamic and changing environment, making it difficult for organizations to control them. Even the current age of organizations is the age of knowledge economy, globalization, contemporary production, competition and the revolution in information and communication systems. As a result of the pressures imposed by these events, organizations need to shift towards new organizational patterns that are flexible, focused on knowledge and on assets intangible or so-called intellectual capital in generating value.

Intellectual capital represents the outstanding capabilities of human resources and associated structural assets, organizational structures and procedures, and the client capital of relations between the organization and its clients.

The focus of knowledge-based and technology-based organizations has been to manage their intellectual assets as wealth. It's true, because the physical assets erode over time and their market value falls, reversing assets. Intellectual, human, organizational or interrelated, are the only basis for building and developing competitive capacities. Adding value to the organization and achieving its competitive budget, which is the basis on which performance is based. Organizations, because they are allowed to add value to the customer and achieve excellence and maintain market share and increase, and achieve effectiveness, and this will be achieved only in light of its ability to satisfy the needs of its customers, and this will be achieved only by an effective way to capitalize on its intellectual capital.

As a result, organizations today are looking for the meaning and content of intellectual capital, and ways to invest, especially for its intangible moral character, and uncertainty of future returns due to difficulty in predicting its useful life, difficulty in measuring and evaluating it.

This research comes to address Intellectual Capital and effect on marketing performance for the Jordanian pharmaceutical companies, and how to build an intellectual capital capable of achieving marketing performance, and the extent of availability of its requirements in the Jordanian pharmaceutical companies, and what methods can be used for valuing the head of intellectual money by activating its role in order to achieve marketing performance.

### **The problem of the study**

The problem of the modern study stems from the following questions: 1. Is there a relationship between Intellectual capital (human capital ; structural capital and technological capital) and marketing Performance in Jordanian pharmaceutical companies?

2. Is there a trace of Intellectual capital (human capital ; structural capital and technological capital) in marketing Performance in Jordanian pharmaceutical companies?

### **The importance of the study**

This study stem from the following methodical and practical considerations:

1. Highlight the importance of Intellectual capital in Jordanian pharmaceutical industry and their importance in achieving high levels of performance, raising the level of these companies, and contributing to the achievement of the objectives in the long run.

2. add to the developmental work of Jordanian pharmaceutical companies mechanism as well as maintain the continuity for public good.

3. This study contributes to opening up other research areas on the subject of Intellectual capital and spurring interest in this kind of capital, especially in the Jordanian pharmaceutical companies in order to accomplish the strategic objectives of these companies.

### **Objectives of the study**

The aim of this study is to learn of the impact of Intellectual capital on marketing Performance of the Jordanian pharmaceutical industry. The independent variable is Intellectual capital, whereas the dependent variable is marketing Performance in Jordanian pharmaceutical companies.

The study also aims to identify the impact of Intellectual capital (human capital ; structural capital and technological capital ) on marketing Performance in Jordanian pharmaceutical companies.

### **Hypotheses of the study**

#### **Hypothesis HO 1**

There is no statistically significant effect of Intellectual capital (human capital ; structural capital and technological capital ) on marketing Performance in Jordanian pharmaceutical companies at a level of significance of 0.05. This give rise to the following sub-hypotheses:

#### **Hypothesis HO1-1**

There is no statistically significant effect of human capital on marketing Performance in Jordanian pharmaceutical companies at a level of significance of 0.05.

### Hypothesis HO1-2

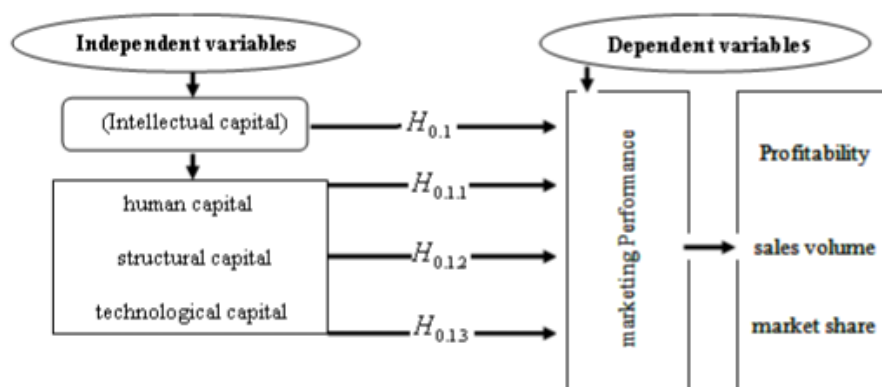
There is no statistically significant effect of structural capital on marketing Performance in Jordanian pharmaceutical companies at a level of significance of 0.05.

### Hypothesis HO1-3

There is no statistically significant effect of technological capital on marketing Performance in Jordanian pharmaceutical companies at a level of significance of 0.05.

### Model study

The dimensions of Intellectual capital (human capital ; structural capital and technological capital ) were determined based on the study by Ukenna et al. (2010). However, the marketing performance has been relying on (Eusebio et al 2006)



### The study procedural definition of terms

**Intellectual Capital:** The strategic capabilities of the organization through the skills, talents and practical knowledge necessary to accomplish the activities required by the organization's strategy (Kaplan and Norton, 2004).

### Marketing performance

Is the level of achievement of the company's goals set in the marketing plan, and will be based on the measurement of marketing performance on the (profitability, sales volume, market share) (Eusebio et al,2006).

### Literature review

Intellectual Capital (IC) is known as the new invisible asset and the most widely used definition of intellectual capital is knowledge that is of value to an organization. From this definition it is suggested that the management of knowledge (what is known) generate IC , Bayburina and Golovko (2009) explain that IC includes human capital, process capital, client capital, innovation capital and network capital. The complexity of these character represents the competitive

advantage originated within and within the company. Therefore, survival and competitive success of a firm depends highly on the strategic management of its IC as compare to financial resources. Unfortunately, one of the challenge in managing IC is when the managers are not clear that their firms possess valuable resources, which might lead to success of new strategies. The idea of IC is broad and is in general split into a few characteristics, which are human capital, customer capital, structural capital, social capital, technological capital and spiritual capital.

### **Human capital (HC)**

Human can be consider valuable asset or liability to an organization (Khan, Farooq and Hussain, 2010). Human capital refers to expert or workforce skills, knowledge and experience shared with their organization in order to add value (Baron,2011).

**Structural capital** means the capability of organization to accommodate their customers demand. Recent evidence suggests that a good organization structure, together with skilled employees provided that efficient and quality service will cause greater performance of an institution (Amrizah and Nawal, 2013).

### **Technological capital**

Information technology (IT), research and development (R&D) and improvement can be consider as technological capital. In order for knowledge to be shared swiftly and available to others, the existence technological capital is important. Collection, storing and distribution of information will be easier with the help of technological capital (Nghah, 2011).

**Marketing performance** refer the level of achievement of the company for its objectives in the marketing plan” (Ambler, etal,2004).

Market share according to (Farris, et. al, 2010 ) the percentage of the total market or piece of the market being serviced or the total sales of the company divided by total sales.

Profitability refers to the level of profits achieved by the organization compared to competitors(Chandra, 1997,p: 538) ,Profitability is a measurement of return in the form of profits received (shareholders for their investments in the organization) ,(Armstrong, 2003, p101).

### **Previous studies**

Karahan and Tetik,( 2012) The Determination of the Effect Level on Employee Performance of TQM Practices with Artificial Neural Networks: A Case Study on Manufacturing Industry Enterprises in Turkey. The aim was to test the impact of the use of the total quality tools on the performance of workers in three industries that are ISO 9000 certified in Turkey. The study sample consisted of (352) industrial establishments operating in Turkey. The study found

many results, most notably that the applications of total quality affect the performance of employees, and that the performance of workers affects the nature of the work of artificial neural networks.

Dizgah, et. al, (2011) human capital character and Organizational performance . The mean was to examine the relationship between human capital characteristics and organizational performance in banks operating in Guilin Province. The study sample include (22) government banks. The study found a statistically significant relationship at (0.05) level between human capital and organizational performance.

(Chin and sofian, 2011) The Impact of human capital and total quality management on corporate performance: a reviw. The objective of the study was to confirm the impact of human capital and TQM on corporate performance. A practical framework for integration between human capital and TQM has been developed which improves the performance of organizations.

Almasarweh, M. (2016) The Impact of Human Capital on Competitive Performance: An Empirical Study on Jordanian Pharmaceutical Companies, The study sample include of Jordanian human medicines manufacturing companies listed in the Jordanian union of Pharmaceutical Manufacturers records of manufacturing companies for 2015. This amounted to 15 companies. The study recommended that thought be given to human capital in the companies, which will lead to an enhancement in the level of the company, as well as an growth of its market contribute to and maximizing of its strengths.

Hashim, and et al (2015) Effect of Intellectual Capital on Organizational Performance, The purpose of this empirical study is to investigate the relationship between six elements of intellectual capital such as human capital, structural capital, customer capital, social capital, technological capital and spiritual capital with organizational performance in Malaysia.

### **Study approach**

The current study can be regarded as an exploratory study. It is based on the descriptive analytical technique where the questionnaire will be used to gather data and information about the supported variables of the study sample. It is the descriptive analytical way that is most suitable to achieve the objectives of the present study.

### **Study population and sample**

The sample of the research is obtain from the study population, which include of Jordanian Association of Pharmaceutical Manufacturers records of pharmaceutical manufacturing companies for 2015. 15 companies have been intentionally selected.

### **Stability study tool**

The stability or the internal consistency of the instrument use in this research to evaluate responses to paragraphs was assured using Cronbach equation alpha

(Cronbach Alpha). The end result is acceptable statistically if the value is bigger than 0.70 (Sekaran, 2006). In addition, the results show that the coefficient values stability is acceptable.

N	Dimension	Questions	( $\alpha$ )
1	Intellectual capital	13	0.864
1-1	human capital	5	0.808
2 - 1	structural capital	5	0.811
3 - 1	technological capital	5	0.836
2	marketing Performance	5	0.811
	Questionnaire	33	0.811

As the above table shows, The Alpha Cronbach indicators on the suitability of the above study tool is generally high by a factor of stability and thus achieves the purposes of the study.

**Results and test hypotheses**

**Hypothesis HO 1**

There is no statistically significant effect of Intellectual capital (human capital ; structural capital and technological capital ) on marketing Performance in Jordanian pharmaceutical companies at a level of significance of 0.05.

Table 2. The results of multiple regression contrasts the impact of (human capital ; structural capital and technological capital) analysis on marketing performance (The dependent variable is the marketing performance).

Table 2

Dependent Variable														
marketing performance														
R	R <sup>2</sup>	df			Mean square		F	B			T			Sign
		Regression	Residual	Total	Regression	Residual	Regression	human capital	structural capital	technological capital	human capital	structural capital	technological capital	0.000
0.811	0.658	4	56	60	2.45	0.024	165.23	0.321	0.245	0.11	3.12	3.27	0.64	

The results of Table 2 shows the value of the coefficient of determination to be  $R^2 = 0.658$ . This means that the independent variable (Intellectual capital) explains what percentage of discrepancy (66%) is in the dependent variable (the marketing performance). Because the value of F is 165.23 at the significance level of  $< 0.05$ , we accept the hypothesis that there is a statistically significant effect ( $0.05 \leq \alpha$ ) of Intellectual capital on marketing performance.

**Hypothesis HO 1-1**

There is no statistically significant effect of human capital on marketing performance in Jordanian pharmaceutical companies at a level of significance of 0.05.

Table 3 The results of simple regression contrasts human capital performance impact analysis (dependent variable is the marketing performance).

Table 3

Dependent Variable										
marketing performance										
R	R <sup>2</sup>	df			Mean square		F	B	T	Sig
0.789	0.623	Regression	Residual	Total	Regression	Residual	Regression	0.789	38.13	0.000
		3	57	60	4.23	0.321	321.61			

The results of Table 3 shows that the value of the coefficient of determination  $R^2 = 0.623$ . This explains the rate (62%) of the discrepancy in the dependent variable (the marketing performance). And because the value of F is 321.61 at a significance level of  $\leq 0.05$ , we accept the hypothesis that there is a statistically significant effect ( $0.05 \leq \alpha$ ) to learn the marketing performance.

#### Sub-third hypothesis HO 1-2

Table 4, There is no statistically significant effect of structural capital on marketing performance in Jordanian pharmaceutical companies at a level of significance of 0.05. The results of simple regression contrasts the impact of structural capital on marketing performance analysis (dependent variable is the marketing performance) Results of table 4 showed the value of the coefficient

Table 4

Dependent Variable										
marketing performance										
R	R <sup>2</sup>	df			Mean square		F	B	T	Sig
0.722	0.521	Regression	Residual	Total	Regression	Residual	Regression	0.722	29.37	0.000
		3	57	60	5.73	1.23	397.3			

of determination to be  $R^2 = 0.521$ . This means that the independent variable structural capital explains what percentage of (52%) discrepancy is existent in the dependent variable (the marketing performance). And because the value of  $F = 397.3$  at a level significance  $\leq 0.05$ , we accept the hypothesis that there is a statistically significant effect ( $0.05 \leq \alpha$ ) of structural capital on the marketing performance.

#### Sub-third hypothesis HO 1-3

There is no statistical effect of technological capital on marketing performance indication in Jordanian pharmaceutical companies at a level of signifi-



cance of 0.05. The results of simple regression contrasts the influence of technological capital on the marketing performance analysis (dependent variable is the marketing performance). Results showed, through the table 5, the value of the

Table 5

Dependent Variable										
marketing performance										
R	R <sup>2</sup>	df			Mean square		F	B	T	Sig
0.567	0.321	Regression	Residual	Total	Regression	Residual	Regression	0.432	21.34	0.000
		3	57	60	3.77	0.76	79.35			

coefficient of determination to be  $R^2 = 0.321$ . This means that the independent variable technological capital explains what percentage of (32%) discrepancy is present in the dependent variable (the marketing performance). And because the value of  $F = 79.35$  at a significance level of  $\alpha \leq 0.05$ , we accept the hypothesis that there is a statistically significant effect ( $0.05 \leq \alpha$ ) of skill on competitive performance.

## 2. Conclusion

The study aims to investigate the influence of intellectual capital on marketing performance in Pharmaceutical firms. The significance of intellectual capital for organizational sustainable expansion cannot be over emphasized in today's dynamic world. This specially becomes more important in intense market competition where corporations strives to present maximum value added good and services to its customers. Therefore, firms are paying attention to intellectual capital to enhance marketing performance. This study investigated how intellectual capital affects marketing performance. The study found overall significant influence of intellectual capital on marketing performance. The study also found significant association between marketing performance and all three dimensions of intellectual capital (human capital; structural capital and technological capital). The study propose that organizational should ensure systematic use of its intellectual capital including (human capital; structural capital and technological capital). In this method organizations can make best use of their human resources, better satisfy their customers and register more patents as compare to their competitors. The study proposes that efficient intellectual capital management can result in high level of motivation and dedication in employees, larger market share, leading place in the market place. The study provide important information to corporate decision makers and future researchers on this topic.

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