

## The Impact of the Conceptual Development of Intellectual Capital on Enhancing the Efficiency of the Pioneering Application of the Competitive Advantage Dimensions in the Jordanian Public Shareholding Industrial Companies from the Point of View of Corporate Managers

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### Abstract

*This study aimed to identify the impact of the conceptual development of intellectual capital on enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies. To achieve the goals of the study, the researcher used the descriptive and analytical method, where a special tool was developed to measure the impact of the aim of the study, the study tool has been verified as correct and stable, and then distributed to the study sample which is (100) in response to the managers of Jordanian industrial companies. The results of the study showed that there is an impact of the conceptual development of intellectual capital on enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies. The results also showed the effect of innovation capital, relational capital, structural capital, and human capital in enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies. In the light of the results of the study, the study recommended a set of recommendations, including: the necessity of the management of the researched companies in seeking to take advantage of its intellectual capital, which represents the non-material assets and providing support to them as well as providing all the requirements and physical facilities from devices and equipment and creating the appropriate climate beside material and moral incentives to urge individuals to creativity by Presenting ideas and innovations that have positive effects in improving the quality of the service provided to reach global competitiveness.*

**Keywords:** Intellectual capital, competitive advantage, Jordanian industrial companies

### Introduction:

Intellectual capital has become an essential element for the success of any business across the industry and an important part through which to retain the competitive position of companies and increase the market value added. Where Intellectual capital strategies are included in the internal audit work that leads to the provision of a high quality information base and reports. the concept of intellectual capital and its components is an influential factor on internal audit and its standards, which are knowledge, skills, experience, work ethics, culture, and the values embodied in human thought, which is a real capital that companies can count on to achieve their goals. Intellectual capital has a creative impact on the performance of businesses, which can lead to institutional excellence at various levels. (Osama, Al-Matarneh, 2009) Therefore, this study has shown the impact of the conceptual development of intellectual capital on enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies. Study importance: the importance of the study is divided into: Theoretical importance: This study will provide an explanation on the importance of the impact of the conceptual development of intellectual capital, and the preparation of an academic study in this area would add to the scientific libraries another asset enriching theoretical literature. Applied importance: It is hoped that industrial companies will benefit from the results of this study: the industrial sector contributes directly to the process of economic growth through the absorption of local labor, as well as working to turn the wheel of growth forward. Questions of the study problem: The main question is: Is there an impact of the conceptual development of intellectual capital on enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies?

### The following sub-questions arise:

Sub-Question 1: Is there an impact of human capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies?

Sub-Question 2: Is there an impact of Structural capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies?

Sub-Question 3: Is there an impact of relation capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies?

Sub-Question 4: Is there an impact of creative capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies?

Study hypotheses:

The main hypothesis: there is no impact of the conceptual development of intellectual capital on enhancing the efficiency of the pioneering application of the competitive advantage dimensions in the Jordanian public shareholding industrial companies.

The following sub-questions arise:

Sub-Hypothesis 1: there is no impact of human capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies

Sub- Hypothesis 2: there is no impact of Structural capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies

Sub- Hypothesis 3: there is no impact of relation capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies

Sub- Hypothesis 4: there is no impact of creative capital on the efficiency of the pioneering application of the dimensions of competitive advantage (quality, cost, flexibility, differentiation) in the Jordanian public shareholding industrial companies

Intellectual rooting of intellectual capital and its pioneering effects:

The great change in the modern world economy and its concepts resulting from the rapid development of technology and communication and the emergence of innovations and inventions , , And what these creative ideas brought of the advantages and additions to the quality of goods and services that satisfy the wishes of customers and even exceed all their expectations and increase their satisfaction, which means an increase in corporate profits and returns and the addition of a very large competitive power , is one of the most important things that seemed to interest recently quickly and clearly. Since the nineties of the last century began the process of interest in the knowledge-based economy or the so-called intellectual capital, through the review of Microsoft, for example, we can see that the value of its assets was (115) billion US dollars, of which intellectual capital constitutes (90%) which Only the rest is what constitutes physical capital, since these giants companies have for a long time begun to invest heavily in intellectual capital without the need for physical investment as before (Ben Abbou and BouQsri, 2011, 2-3).It is now imperative for companies that want to be leaders and reap the profits and the largest market shares to focus on continuous innovation and renewed ideas by relying on the new technologies, skills, creations and knowledge available that customers desire more than on physical investments, This means that these companies should disclose the true value of them, so that investors can access the financial statements of credibility and reliability, since intellectual capital was not seen as a key asset in the reports of companies only a few years ago in some companies such as (Arthur Anderson) and (Ernst & Young) (Abdel Mounim, 2008, 13-14).Therefore, intellectual capital in general is considered a relatively modern concept and many accounting and management studies have started to pay great attention to it by clarifying what it is and the possibility of determining its value and what its divisions. However, many companies still do not have a clear vision for it and the main idea that revolves around it. The Chartered Institute of Management Accountants in the United Kingdom (CIMA, 2003) defines intellectual capital as “knowledge-based sections owned by an enterprise, and will bring a future stream of benefits, including technological and innovative capabilities, management and consultancy expertise”.

(Guthrie & Petty, 2000, 241) defines it as the distinctive capabilities of a limited number of individuals working in the organization, which enables them to make intellectual contributions that enable the organization to increase its productivity and achieve high levels of performance compared to similar organizations.

Whereas (Marr, 2004: 560) defined it as "intellectual capital is" a group of knowledge assets that can be attributed to an enterprise and contribute effectively to improving its competitiveness by adding value to the most important stakeholders of the enterprise.

(Kavida & Sivakouar, 2009) went on to say that there is no general acceptance of intellectual capital, but rather terms that are used interchangeably because they represent intangible assets for future benefits, The study pointed out that economists call it the knowledge capital and management experts refer to it as intellectual capital and accountants call it intangible capital.

(Khan et al., 2012, 22) defines Intellectual capital as containing all the resources of an organization that would increase the value of an organization by increasing the efficiency and merit of its intellectual assets.

(Gogan and Doran ,2014) defined intellectual capital as all the continuous skills and knowledge of employees that are unique and not owned by any other organization and increase their competitive advantage.

From the foregoing, the researcher shows that all researchers in their various fields of thought so far have not been able to reach a common definition of the concept of intellectual capital.

The researcher agrees with Karabay (2011) that the concept of intellectual capital always expresses a series of distinct meanings for researchers in this concept, as the different definitions of intellectual capital or what is known as knowledge are all unanimous on the need for the element of excellence in it.

Therefore, intellectual capital can be viewed as:

- 1) Organizational knowledge as well as making knowledge.
- 2) Ability to apply skills in the most difficult situations.
- 3) Knowledge gained through training and experience.
- 4) The system used to understand situations and effects.
- 5) Knowledge in how to run a business.
- 6) Knowledge used to avoid deadlocks.
- 7) Knowledge in how to find information and how to get it.

Therefore, the concept of intellectual capital is a concept that is constantly renewed because of the rapidly changing environment surrounding all parts of the company and the organization, from the integration of skills and expertise of all individuals and companies and organizations to the advantage in dealing with their suppliers to the quality of the product and service provided to customers. Competitive Advantage and Intellectual Dimension Affecting Entrepreneurs: The company's management works to achieve the competitive advantage of the company through its products that meet the needs and desires of customers or the value that customers wish for these products. Al-Lami (Al-Lami, 19,2008) believes that the operations function contributes to achieving the competitive advantage of the industrial company from the performance objectives of the competitive priorities that the company seeks to achieve, which reflects the overall performance of the operations. The most common dimensions, each of which is an essential dimension to achieve the competitive advantage of the company. These dimensions are cost, quality, flexibility and differentiation and because of the importance of these dimensions in achieving a competitive advantage for the company it will be briefly addressed:

- 1- Cost dimension: Companies seek to obtain a greater market share as a basis for achieving their success and superiority, which is providing their products at a lower cost than their competitors. (Slack, et.al, 2004,44) shows that the lowest cost is the main operational goal of companies competing through Cost and even companies that compete through competitive advantages other than cost, they strive to achieve low costs for their presented products , (Evans and Collier, 2007,124) shows that the company can reduce costs through the efficient use of available production capacity as well as the continuous improvement of product quality and innovation in product design and process technology, as this is an important basis for reducing costs as well as assisting managers in supporting and assigning the company's strategy to be a leader in the cost field. (El Taweel and Ismail, 2009).
- 2- Quality dimension: (Slack, et.al, 2004,45) explains that quality is an important competitive advantage that points to doing things correctly to deliver products that are tailored to customer needs. (Krajewsky and Ritzman, 2005,62) indicates that customers want Products with quality that meet the characteristics required by them, which are the characteristics they expect or see in the advertisement, companies that do not provide products with quality that meet the needs, desires of customers and their expectations are not able to survive and succeed in the behavior of competition
- 3-Flexibility dimension: (Chase, et.al, 2001,26 )explains that the flexibility dimension is an important dimension which means that the company's ability to provide various products at the required time, as well as the company's ability to develop existing products and improve its operations to present new products. (Slack,*et.al*,2004,45 ) explains that

flexibility means the company's ability to change operations to other methods and this may mean a change in the performance of operations as well as a change in the way and time the operations are performed

4-Differentiation dimension: The differentiation dimension is the primary basis for competition between companies in the markets by focusing on reducing time limits and speed in designing new and distinctive products and presenting them to customers in the shortest possible time. (Slack, et.al, 2004,64)The researcher agrees with (Gogan & Duran, 2014) that the concept of intellectual capital is one of the concepts related to competitiveness among companies looking for entrepreneurship and institutional excellence not only at the local level but also globally.

## 1. Research Methodology

### • Data Collection Method and Sampling Framework

Research methodology involves describing, explaining and predicting phenomena in addition to the research plan. It is necessary for the researcher to recognize the research and its contents to be able to identify the type of research. However, this research adopted a descriptive and analytical approach. A quantitative survey was used to collect the necessary data. The study population included all managers in the Jordanian Shareholding Industrial Companies. A convenient sampling techniques was used to select the participants. 110 questionnaires were distributed. 100 questionnaires were analyzed. Table (1) below outlines the sample characteristics.

**Table (1): Sample characteristics**

Personal Information		Frequency	Percent
Educational level	Diploma(college) degree	17	17.0
	Bachelor's degree	50	50.0
	Master degree	25	25.0
	PhD degree	8	8.0
Experience	Less than 5 years	35	35.0
	11-15 years	37	37.0
	More than 15	28	28.0
Total		100	100%

### Instrument Design

The research is based on questionnaire that was developed for the purpose of this study. Face validity and contents validity of the questionnaire were made. The answers were classified according to five Likert scale. The questionnaire includes two parts; the first part contains 2 items that related to personal information; the second part contains 43 items related to the research variables.

## 2. Data Analysis

Partial least squares (PLS) was chosen for the current study using SmartPLS software. It was used in a two-stage approach, measurement and structural model testing.

### • Measurement model

The measurement model can be assessed by examining the reliability, convergent validity and discriminant validity. Specifically, reliability which refers to the internal consistency of measurement, can be assessed by checking if the value of composite reliability (CR) is more than 0.7, the average variance extracted (AVE) is greater than 0.5 and Cronbach's  $\alpha$  is greater than 0.6 (Hair et al., 2006). Table 2 shows that the CR values ranged from 0.96 to 0.97 and the AVE values ranged from 0.61 to 0.70. These values are higher than the acceptance value 0.70 and 0.50 which indicate a good construct reliability. Moreover, the statistical test of the reliability of the structured items from the questionnaire in the study is tested with Cronbach Alpha. The Cronbach alpha reliability coefficient ranged from (0.95 – 0.96). This given above reliability given by the questionnaire can be further analyzing (Sekaran, 2016). Furthermore, in order to check the convergent validity, loading factor for each item was calculated. All item loadings are larger than 0.6 and t values indicate that all loadings are significant at 0.05 which indicates that the scale has a good convergent validity.

**Table (2): Result of construct assessment**

Constructs	Items	Factor loading	Mean	SD	Cronbach's $\alpha$	CR	AVE
<b>Human Capital</b>	Employees share intellectual knowledge through the experience of old employees provided to new employees in solving their professional obstacles.	0.727	4.718	0.45	0.955	0.960	0.615
	The employees of the company possess a complete Entrepreneurial knowledge that is constantly updated about the operations carried out by the company in light of their practical reality.	0.730	4.695	0.461			
	Employees are keen to complete the work in a pioneering intellectual way that grows from their renewed intellectual sense	0.736	4.626	0.484			
	The employees' scientific expertise contributes to providing excellent solutions to their practical problems.	0.723	4.641	0.48			
	The company's employees have solid intellectual experience in their industrial business	0.739	4.634	0.482			
<b>structural capital</b>	The employees of the company perform their required tasks in a steady intellectual and Entrepreneurial manner	0.817	4.725	0.446	0.945	0.950	0.623
	The company seeks to take advantage of the intellectual knowledge of its employees to serve the aspirations and directions of the company	0.772	4.687	0.464			
	Staff feel comfortable while dealing with each other.	0.817	4.679	0.467			
	The employees of the company have the courage to do creative work.	0.809	4.664	0.472			
	The company continuously performs quality assessment procedures to serve their future pioneering aspirations	0.805	4.672	0.47			
<b>relational capital</b>	The company gives priority to fulfilling the promises made to its customers in order to win them over.	0.838	4.672	0.47	0.947	0.961	0.681
	The company is keen to meet the consumer needs of its products that suit their tastes and desires	0.827	4.695	0.461			
	The company continuously provides Entrepreneurial services to the community	0.805	4.695	0.461			
	The company is concerned with applying social responsibility towards society in an efficient manner	0.810	4.695	0.461			
	The company is exchanging experiences with the community and working to stir up the brainstorming method with them	0.716	4.726	0.464			
	The company is modernizing and developing its products in line with the needs and requirements of customers.	0.722	4.433	0.481			
<b>innovation capital</b>	The company works to develop its products based on market studies and to determine the needs and desires of its customers.	0.727	4.718	0.45	0.956	0.940	0.655
	The company's products are developed using the expertise and skills of the company.	0.730	4.695	0.461			
	The company allocates a good amount of research and development efforts to develop their products.	0.827	4.695	0.461			

	Coordination and cooperation takes place between the departments of production, development, research and development to develop the company's products.	0.805	4.695	0.461			
	The company seeks to follow scientific methods by designing and improving production processes with the help of computers	0.817	4.725	0.446			
	The company's management adopts modern and developed methods and techniques in work to reach creativity in the work presented.	0.772	4.687	0.464			
	The Company's creative improvements maximize its market share and increase its competitiveness.	0.723	4.641	0.48			
<b>Quality</b>	The company's products are always compatible with the needs and aspirations of customers, and always meet their renewed desires.	0.837	4.702	0.457	0.95 7	0.96 3	0.701
	The company's products comply with recognized and predetermined Entrepreneurial quality standards and specifications.	0.892	4.664	0.472			
	The company's management adopts pioneering intellectual methods and strategies aimed at producing products of the highest quality and excellence.	0.823	4.649	0.538			
	The company's management prepares long-term quality goals and discloses them within its goals and strategic plans.	0.888	4.656	0.475			
	The company's management determines the procedures and practices that help in achieving quality goals in line with the company's future aspirations.	0.789	4.603	0.548			
<b>Cost</b>	Achieving minimum production costs is a key Entrepreneurial objective for the company.	0.815	4.588	0.537	0.95 7	0.96 3	0.701
	The company's management adopts cost-cutting method to achieve competitive advantage in an efficient and pioneering manner.	0.807	4.466	0.646			
	The company's management studies the prices of similar products in the market when deciding to reduce the cost.	0.844	4.55	0.527			
	The company's management monitors and evaluates the performance of its machines, equipment and programs periodically and continuously.	0.812	4.58	0.524			
	The company's management motivates its members to participate in the intellectual programs, courses and workshops that aim to improve their productivity, reduce error rates and deviations at work, and allow for exchange of experiences.	0.890	4.534	0.529			
<b>Flexibility</b>	The company's products are flexible, adjustable and adaptable to suit future expectations and needs of customers.	0.860	4.565	0.511	0.96 8	0.97 1	0.705
	The company has the Entrepreneurial ability to produce new and premium products in record time.	0.888	4.534	0.499			
	The company is improving and developing the components of its products in line with modern industrial trends.	0.807	4.765	0.446			
	The company adheres to the specified timelines for delivering its products to its customers.	0.772	4.677	0.464			
	The company has the Entrepreneurial ability to offer new products with minimal cost	0.763	4.741	0.49			

<b>Differentiation</b>	The company seeks to acquire and control specific sites from the market.	0.730	4.342	0.451	0.966	0.942	0.671
	The company's products outweigh the quality and price over the products provided by competing companies that operate in the same field.	0.837	4.675	0.461			
	The company possesses human cadres with Entrepreneurial experiences, intellectual skills and competencies.	0.815	4.695	0.464			
	The company's management of its human resources is subjected to new and advanced training programs to achieve differentiation.	0.817	4.725	0.446			
	The company seeks to meet the needs and requirements of customers as quickly as possible.	0.807	4.765	0.446			

Bootstrapping method in Smart PLS software was used to test the statistical significance of path coefficients. Figure 2 shows the P value for all research variables and the PLS model of the study.

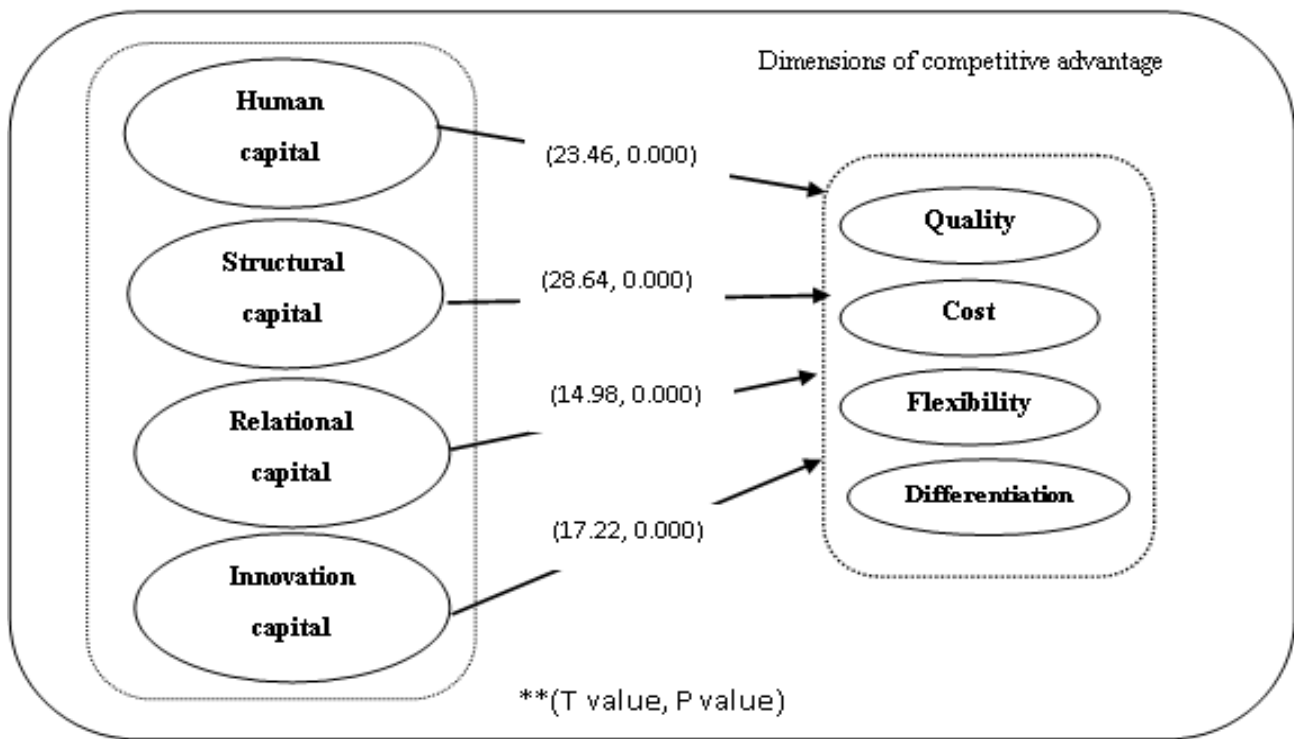


Figure (2) Result of PLS

**Structural model**

**Discussion and conclusion**

Against this backdrop, the present study attempts to ascertain and further our understanding concerning the interaction among the aforementioned variables. The outcome presented in figure 2 provided support for the research hypotheses. A detailed information and direction of the hypotheses will be discussed in the following paragraphs. Specifically, (Human Capital) has a significant impact on competitive advantage dimensions (Quality, Cost, Flexibility, Differentiation) with values ( $t=23.46$ ,  $p \leq 0.001$ ). Thus, H1 was supported. However, 65.1 percent of competitive advantage dimensions' variance was explained by human capital. In addition, the analysis result reveals that the factor (Structural Capital) has a significant impact on competitive advantage dimensions (Quality, Cost, Flexibility, Differentiation) with values ( $t= 28.64$ ,  $p \leq 0.001$ ) and can explain 0.44 percent of competitive advantage dimensions' variance. Supporting H2. Furthermore, (Relational Capital) has a significant positive influence on competitive advantage dimensions (Quality, Cost, Flexibility, Differentiation) with t values (14.98) and ( $p \leq 0.001$ ) and can explain 0.53 percent of competitive advantage dimensions' variance. Thus, H3 was supported. Finally, the analysis result reveals that the factor (Innovation Capital) has a significant impact on competitive advantage dimensions (Quality,

Cost, Flexibility, Differentiation) with values ( $t= 17.22$ ,  $p \leq 0.001$ ) and can explain 0.28 percent of competitive advantage dimensions' variance. Thus, H4 was supported.

### 3. Table (3): Summary of hypothesis testing results

No.	Path (hypothesis)	t	p	R <sup>2</sup>	Results
1	Human Capital competitive advantage dimensions - <b>H1</b>	23.46	***	0.65	Supported
2	Structural Capital competitive advantage dimensions - <b>H2</b>	28.64	***	0.44	Supported
3	Relational Capital competitive advantage dimensions - <b>H3</b>	14.98	***	0.53	Supported
4	Innovation Capital competitive advantage dimensions - <b>H4</b>	17.22	***	0.28	Supported

#### Results :

- 1-Intellectual capital is the important axis of the survival of companies and without this capital, the simplest companies today cannot continue. Therefore, this capital must be preserved with quality and this is done by providing a good work environment and studying work obstacles and finding the best solutions to them, and this is done through studying Characteristics of intellectual capital to reach global competitiveness
- 2-Intellectual capital is the collection of knowledge, information, skills and expertise of economic value Whether it is external or implicit, which entitles the person to an ownership that allows him to benefit from it in order to develop The company and achieve economic growth
- 3-The results of the statistical analysis showed the effect of the conceptual development of intellectual capital with its various components on the pioneering application of the dimensions of the competitive advantage of Jordanian industrial joint-stock companies.

#### Recommendations

- 1- Urging the companies to show the necessary attention to the intellectual capital through attracting and developing it in a real way to support the competitive advantage and as the real capital of the company.
- 2- the necessity of the management of the researched companies in seeking to take advantage of its intellectual capital, which represents the non-material assets and providing support to them as well as providing all the requirements and physical facilities from devices and equipment and creating the appropriate climate beside material and moral incentives to urge individuals to creativity by Presenting ideas and innovations that have positive effects in improving the quality of the service provided to reach global competitiveness.
- 3- Establish a specialized unit in the researched companies concerned with caring for individuals with skills and experience And outstanding performance, and provide support to them along with financial and material facilities to urge them to redouble their efforts and raise the level of services to reach global competitiveness.
- 4-Using the method of mind storming in creating innovative and entrepreneurial ideas by companies through conducting joint workshops for both employees and managers at various administrative levels to solve all obstacles that stand in the way of achieving global competitive advantage.
- 5- The necessity of developing a strategic approach to develop the creative thinking of workers in companies to reach distinguished companies that have a pioneering competitive advantage

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