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Effect of Intellectual Capital on Competitive Advantage in the Jordanian Pharmaceutical Companies

Dr. Ikhlas Altarawneh
Al-Hussein Bin Talal University, College of Business and Economics, Department of Business Administration,P.O Box20, Ma'an, Jordan

Abstract
The current study is considered as a quantitative explanatory study aims to examine the effect of intellectual capital (human, relational and structural capital) on competitive advantage in Jordanian pharmaceutical companies. In addition, it aims to explore awareness of the importance of intellectual capital and dimensions of competitive advantage in the targeted companies A survey strategy was applied thorough a self-administrated questionnaire as the data collection method. 13 pharmaceutical companies that were registered in the Jordanian Association of Pharmaceutical manufacturers (JAMP) in 2016 were targeted in this study. The total number of all general managers, deputy managers, head of departments and head of divisions in the 13 companies was 220 they were all targeted, however, 207 questionnaires were returned. Statistical tests within SPSS package were used to analyze the data. Results show strong statistical significant effect of intellectual capital (human capital, relational capital and structural capital) on competitive advantage in the Jordanian pharmaceutical companies at level ($\alpha \leq 0.05$). Findings also indicate that each of the intellectual capital constructs has its own effect on the competitive advantage. According the results indicated for the awareness of the management in these companies to the importance of managing intellectual capital. For the awareness of competitive advantage dimensions the results revealed a moderate level of importance as addressed by the respondent of the study. The study has made significant contributions to the body of knowledge at academic and practical levels by extending knowledge regarding the effect of intellectual capital on competitive advantage . this study answers the call by many researchers for more studies to address the relationship the study constructs in emerging economies. Practically the study recommends that Jordanian pharmaceutical companies must provide training programs to support staff with specialized skill related to their jobs and tasks. It is also recommended that recruiting and selection employees' process should consider professional and social applicants' competencies.
Keywords: intellectual capital; competitive advantage; human capital; relational capital; structural capital; pharmaceutical; Jordan**.**

1- Introduction

The intensity of global competition has led to significant changes in the way manufacturing companies conduct their businesses. Manufacturing and services companies are under intense pressure to improve quality, customer service and competitive success (Sundaram and Mehta, 2002). Organisations confront different political, economical, social and technological changes and challenges, which create competitive challenges to which they need to pay more attention if they are to be successful in their market place regardless of their size, industry or location (Ulrich, 1997). These continuous changes and challenges justify the need for organisations to focus on their competitive advantage.

The sustainability of competitive advantage rooted in the intellectual capital rather than physical and finance assets (Mundra et al., 2011). According to (Chong et el., 2000) intellectual capital such as: stakeholders relationship, brands, trade-mark, reputation, and organizational culture are important factors for gaining sustainable competitive advantage. Therefore, companies have to manage their intangible assets effectively. The ability to leverage and develop intangible assets, particularly those providing financial and professional services, creates a core competency to organizations. In order to achieve sustainable competitive advantage knowledgeable industries such as pharmaceutical industry improve their intellectual capital effectively. Pharmaceutical industry needs to have a global competitive market position all the time. Therefore, Jordanian pharmaceutical companies need to improve their intellectual capital to advance their degree of market competitiveness.

The main aim of this study is to examine the effect of intellectual capital (human, relational and structural capital) on competitive advantage in Jordanian pharmaceutical companies. In addition, it aims to explore awareness of the importance of intellectual capital and dimensions of competitive advantage in the targeted companies. The importance of this study derived from the fact that there are huge amount of research studies conducted to examine the relationship between intellectual capital and competitive advantage but much of this literature are conducted in the developed countries, and little are conducted in developing countries. So it can be argued that this study fills the gap via examining the influence of intellectual capital on competitive advantage in the Jordanian pharmaceutical companies.

2- Literature review and research Hypotheses

2-1 Intellectual Capital (IC)

Intangible assets are increasingly becoming important towards determining organizational success. According to Bontis (2004), this success is credited with having coined the term 'Intellectual Capital' (IC) to refer to these assets and used it to emphasize the importance of general knowledge as essential to growth and development. Successful and competitive organizations tend to be those that continually concerned and aware of the importance of IC. Intellectual capital is the collective knowledge of individuals in organizations and most significantly improved the organizational competitive position by adding value to customers. This knowledge can be used to produce wealth, increase the output of physical assets, enhance the value of other type of capital, and gain sustainable competitive advantage.

Numerous definitions and classifications of IC can be found in literature by (Bontis, 1998; Bontis, 2004; Stewart, 1997; Walsh et. al., 2008; Curado,et. al., 2011; Seleim and Khalil, 2011; Kamukama et.al,2011). For example, Roos et al., (2004) indicate that Intellectual capital is all the resources that are not shown on the balance-sheet and all the intangible assets which are considered by the contemporary accounting methods such as brands, patents, and trademarks. IC includes the sum of its members' knowledge. According to Roos et al.,(2004) there are four dimensions for IC: human capital, organizational capital, renewal capital, and relational capital. Organizational or structural capital is everything that remains in the company after employees go home. Human capital is about generating intellectuality through employees' attitude, competence and their intellectual agility. Attitude is the employee's behavioral component. Competence covers skills and education. While intellectual agility is supporting employees with ability to change practices and encourage them to be creative and innovative.

Brooking (1996) defines IC as the combined intangible assets of market, intellectual property, human–centered and infrastructure assets, which enable the firm to function. According to him IC is divided into four components namely: market assets, intellectual property, human capital, and infrastructure assets. Market assts comprise brands, customer loyalty and distribution channel. For infrastructure assets include all the type of technologies, processes and methodologies that enable organization to function. Intellectual property is about know-how, trademarks and patents. Finally, Human-centered assets include abilities, skills, experiences, leadership style, and decision making and problem solving processes.

Stewart (1997) states that IC is the intellectual materials include knowledge, intellectual property, information and experience that can be utilized to create wealth. There are four components for IC according to Stewart: structural capital – it is about IT, where can be embedded; human capital – is about anything related to employee in terms of skills, knowledge and experience, as employees the most important assets in the organization; intellectual property includes trademarks, plans and all patents; and customer capital – is about all the market information used to captured and retain customers.

Bontis (2000) defined IC as the pursuit of effective use of knowledge as a finished product to be opposed to information as the raw material. Bontis also, identifies three dimensions to measure the IC: human, relational and structural capital. Human capital represents the organizational knowledge stock as represented by its employees. He adds that human capital is a foundation of innovation and strategic renewal, whether it is from re-engineering new process, throwing out old files, improving individual skills, or from brainstorming in the research lab. Structural capital according to Bontis (2000) includes all the stocks of knowledge that creates value to the organization and not related to human such as: processes, manuals, databases, strategies, routines and organizational charts. He also argues that if organization has poor systems, policies and procedures, the overall IC will not reach its complete potential. Organizational with strong structural capital will have the encouraging culture that allows individuals to innovate, and learn new things. Relational capital according to Bontis (2000) includes the knowledge rooted in all types of organizational relationships with the significant stakeholders such as customers, suppliers, competitors, trade associations and government. He further adds, that the relational capital is the knowledge embedded in the marketing channels, supplier relationships and customer relationships that an organization develops through the course of conducting business.

2.2 Intellectual capital measurements

IC cannot be measured via traditional accounting methods, which are mostly based on tangible assets. There are many important non-financial items included with the measurement of IC, such as: innovation; knowledge; human skills and experiences and customer and employee satisfaction. Chen et al., (2004) categorize IC measurements into four elements namely: human, structural, innovation, and customer capital.

- *Human capital*: is a mixture of employee's attitude, competence and creativity and attitude. Employees' competence includes: skills, experiences and talents, employees' attitude includes motivation and satisfaction. Employees' competence refers to the employees' learning ability, qualities of employees and strategic leadership. On the other hand, employees' attitude might be identified by corporate value, employees' turnover rate, and the degree of employees' satisfaction. Employees' creativity allows them

to use their knowledge in flexible way and to make innovations constantly. Employees' creativity indicators could be: employee's creative ability and their ability to create new ideas.

- *Structural capital*: it includes organizational culture, business routines, organizational structure, informational systems, organizational learning, and operational processes. Corporate culture is the way company act in term of values, beliefs, faith and behavior shared by all the staff. Organizational structure includes both formal and informal organizational relationship which consists of the power relationship, authority and responsibility positions and the control system. Organizational learning is the result of the regular learning, accumulating knowledge, and coping with changes. Finally, information system includes the repository, disposal and communication methods for the internal information of a company.
- *Innovation capital*: presents new products, services, materials, markets and technologies. Innovation capital is the competences and abilities used to bring new technology, new product, or new service in order to meet and satisfy customers' needs and wants. Innovation capital has become a significant driver for a continuous improvement. There are three categories for innovation capital: innovational mechanism; innovational achievements; and innovational culture.
- *Customer capital:* it is the value rooted in the relationships with the key stakeholder that a company develops when conduct business. According to Chen et al., (2004) customer capital can be categorized into: the basic abilities of marketing; customer loyalty; and the intensity of market. The basic ability of marketing helps organization to increase its market strength, customer's loyalty and competitiveness. Market intensity refers to the current status of market and its potential. While, customer's loyalty that can be building up through customer satisfaction.

Delgado et al., (2011) classified IC into three major components namely: human, organizational and relational capital. Human capital includes the experiences, skills, knowledge, abilities and attitudes possessed by organizational members. Organizational capital consists of all the intangible assets that shape the organizational structure, culture and all the internal organizing principles. Organizational capital according to them, enhances the flow of knowledge, provides consistency and guidance and improves organizational effectiveness through coordination because it combines different functions of the company. Finally, relational capital is about the intangible assets that organization captures when it obtains and maintains successful relationships with certain stakeholders such as suppliers and customers. Relational capital, emphasizing relationship processes the organization can maintains with the external stakeholders.

For the purpose of this study, it can be concluded that IC is intangible assets that create value for the organization separately and jointly with tangible assets. It includes three elements namely: human capital, organizational or structural capital and relational capital. Human capital is about the value generated from knowledge, innovation, innovative skills, employees' satisfaction, employees' loyalty, organization know-how, skills, creativity, and experiences that employees take home when they leave organization after work. Relational capital is defined as the knowledge resources linked to the external relationships with the firm's stakeholders such as: customers, suppliers, investors, creditors, or other organizations. Structural capital is defined as the value of the knowledge assets that stays within the firm when people have left their workplace. It comprises organizational routines, procedures, systems, cultures, intellectual property, information systems, and databases.

2-3 Competitive Advantage (CA)

Competitive advantage (CA) is a critical strategic organizational objective which any organization seeks to achieve and maintain. To confront environmental challenges and changes, organizations should create and sustain its CA from any unique specific organizational sources. The rapid change and challenges that organizations face today, globalization impacts, the continually changing in consumer needs and wants, extensive competition, and the revolution of knowledge and information technology, all these reasons were behind the popularity of the CA concept in the contemporary literature of management (Al-Rousan and Qawasmeh, 2009). Porter & Kramer (2006) state that in today's competitive markets CA is at the heart of a firm's performance. In addition, they argue that CA grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it. In order to gain and sustain CA, organizations must create rare, valuable and inimitable resources through possessing the right capabilities (Barney, 1991).

2-3-1 Competitive Advantage Definitions:

To date, there have been a variety of theoretical frameworks and perspectives attempting to explain CA, up till now the definition of CA still being debated (Rumelt, 2003). However, there are many definitions of CA can be found in literature. Table (1) summarizes the definitions of CA. For the purpose of this study, CA can be defined as to what extent an organization is able to add superior values to its customers than its competitors, and as a result attaining a competitive position related advantage.

Table (1) Competitive advantage Definitions

Competitive Advantage Definition	Author/s
CA has been described as: the superior position based on some combination of differentiation, cost, or operating in a protected niche.	Day (1984)
CA is the ability of a firm to earn more returns on investment that the competitors or above the average in the industry.	Porter (1985).
CA is to what extent a firm can generate and sustain a superior and defensible position over its rivals.	Tracey et al., (1999)
CA is any factor or characteristic that allows the company to differentiate its service to customers more efficient and effective than competitors and create better customer value to achieve superior performance.	Ma (1999)
The activities that increase effectiveness or efficiency that competing firms do not have, regardless whether those other firms are in a particular firm's industry.	Barney (2001)
CA is to what extent an organization is able to add more value to its customers than its competitors, and as a result attaining a position of relative advantage.	Thompson (2001)
A firm gains CA when its actions in the market create economic value and when few competing firms are engaging in similar actions.	Barney (2002)
CA is the extent to which one organization is able to create a defensible position over its competitors.	Cardy & Selvarajan (2006)
Competitive advantage is about the capabilities used in the organization to distinct and differentiate itself from its competitors	Li et al., (2006)

2-3-2 Competitive Advantage Strategies and Sources:

The systematic way of building CA requires consistency among organisational primary activities (human resources, technological resources, information resources and financial resource), and the way they are interacted. According to (Barney, 1991) an organization is said to have a CA when it implements a strategy that create value and hard to be imitated by competitors. In the same context, Hill & Jones (2004) state that CA can be gained by value leveraging as well as cost leveraging. Higher degree of value leveraging represents higher customer value again higher degree of cost leveraging tends to lower cost structure. The combination of value and cost leveraging opportunities creates higher price flexibility and hence greater CA.

Competitive advantage is built from different generic strategies such as: cost leadership, differentiation and focus strategies. Within the *cost leadership strategy*, an organisation seeks to secure a cost advantage among its competitors by reducing its overall costs in order to be able to provide its products and services within a competitive lower price and relative to products and services' quality received by the customer and, at the same time, achieve a high profit margin (Porter & Kramer, 2006). This strategy requires different managerial practices; using new technology to increase the efficiency and accuracy of doing work; devising more efficient work methods so that an organisation could eliminate the waste of time, also increasing the workers' competencies and maintaining competitive workforce (Wheelen & Hunger, 2008).

Differentiation strategy according to Porter (1980, 1981, and 1985) it is achieved by serving customers' needs differently, ideally and uniquely. Differentiation strategy involves cost increasing, which is recouped if the customers are willing to pay the necessary premium price. Organisations could differentiate in different ways: creating high quality products and services, introducing innovative or creative products and services, having a superior location preferred by customers, promoting or packaging products and services, or, by creating strong relationships with customers and unique customer services management..

Focus strategy, according to Porter & Kramer (2006) is where a company chooses to concentrate on only one segment or a limited range of segments. Focus strategy combined with the other two competitive strategies, or either lower cost or differentiation. Cost focus is a low-cost competitive strategy that focuses on a particular customer group or geographical market and attempts to serve only that niche, to the exclusion of others. Differentiation focus, concentrate on a particular customer group, product line segment, or geographical market.

It can be concluded that, in any organizations, the challenge is not how to gain CA, but the challenge is to sustain CA. Therefore, the new challenges have changed the bases of the CA; thus new models and sources are needed to enable organizations to differentiate themselves from their competitors. The new sources of competition must go beyond the variable tasks of costs, technology, distribution and product features, to identify other capabilities valued by customers. Organizations must focus on people and their capabilities such as: speed, responsiveness, relationship, and agility, etc. In other words, redefinition and redeployment of intellectual capital and functions should be considered. Organizations have been concerned about how they could improve their profitability while reducing costs, through using their intellectual capital.

2-3-3 Competitive Advantage Dimensions:

Many studies through the literature about CA have addressed extensively the competitive dimensions and priorities which can help firms gain and sustain CA. the following are a brief discussion on such dimensions:

- Quality:

Quality is one of the crucial competitive factors in the marketplace. Organization creates CA through quality by providing products or services that meet or exceed customer expectations and needs. Juran (2004) described quality as "Fitness for use" where fitness is about the goods and services that satisfy the customers' needs. Kahreh et al., (2011) contend that in order to achieve quality, organization should add distinctive features and attributes to product or services to enhance their competitive position and add value to customers. There are eight dimensions for quality to be achieved namely: performance; features; reliability; conformance; durability; serviceability; aesthetics and perceived quality (Reeves & Bendar, 1994). These dimensions match the customer perspective.

Accordingly, it can be argued that quality is one of the major sources of CA, by meeting customer requirements. Many studies have linked quality to competitive strategies. Porter, (1985) argues that firms which compete on quality can adopt a differentiation strategy and position their products based on several attributes to satisfy customer needs which might lead to the ability of charging premium price.

- Cost:

Cost is the ability to manage efficiently all the operation involved, including all the related aspect such as overhead cost and added value cost without hearting the quality of the product or service. Cost can be fixed or variable, direct or indirect, and long or short-term. In addition, the cost can be expressed by its objectives. Juran (2004) states that there are three types of costs for quality: appraisal costs, failure costs and prevention costs. According to Abu-Moghli et al., (2012) companies should take in their account the cooperation between cost and uniqueness of their products and services. Organizations must reduce costs without hurting the quality of the products or services. Generally most of organizations choose to reduce costs in many different ways such as: reducing employee compensation rates, using backward or forward integrations strategies, tightening fixed costs, controlling the raw materials and use either just-in-time or mass production method (Dilworth, 1992; Abu-Moghli et al., 2012; Kahreh et al 2011).

Porter, (1980; 1985) argues that CA can be achieved by adopting the strategy of cost leadership. There are three features for this strategy: economies of scale, standardized related products and low cost comparing to competitors. CA can be divided into: lower cost that ends up with low price comparing with competitors, and the ability to innovate and differentiate products or service to end up with premium price that exceeds the extra cost of doing so. This idea is behind the logic of linking the cost leadership strategy to CA (Porter, 1991).

- Flexibility:

Flexibility can be defined as the ability of the processes to switch from one product to another or from one customer to another at the least cost or impact (Abu-Moghli et al., 2012). Literature classified flexibility by using different dimensions; Upton (1994) classifies flexibility into two forms: action flexibility and state flexibility. Action flexibility is the capacity for taking new action to meet new circumstances, while state flexibility is the capacity to continue functioning effectively despite changes in the environment. According to (Das, 2001) flexibility can be classified into three categories: volume flexibility (the ability of a manufacturing sys- tem to vary total production volume economically); Market flexibility (the ability to adapt to a changing market environment easily); and new product flexibility (the ability of a manufacturing system to introduce and manufacture new parts and products). Zhang et al., (2003) categorize flexibility into: (1) mix flexibility (the ability of a company to produce different mix of products efficiently and effectively) and (2) labor flexibility (the ability of the workforce to do a broad range of manufacturing tasks efficiently and effectively). Flexibility also includes product flexibility which is defined as the company's ability to change the design of the product according to the changes in the customer's needs and tastes. The second flexibility is about the respond to the volume of demand. This flexibility may lead to the introduction of new product, the diversity of the products and on-time delivery (Abu-Muaghli et al., 2012; Kahreh, 2011).

2-4 Intellectual Capital and Competitive Advantage

Sustainable CA is dependent on building and exploiting distinctive competencies. Therefore, resources which are distinctive, difficult to transfer and hard to be imitated by competitors are required. IC is important to all type of organizations because it helps to create changes in people's behavior and values. IC brings with it a whole set of new values about what is good and what is bad management. Values embedded in IC are useful for organizations to gain a good competitive position in the market. IC is a key driver of innovation and CA in today's knowledge based economy. Numerous studies within the literature investigated the relationship between intellectual capital (IC) and competitive advantage (CA) (Stewart, 1997; Edvinsson and Malone, 1997; Schiuma and Lerro, 2008; Kamukama et al., 2011; Jaradate et al., 2012; Phusavat et al., 2011; Vargas and Noruz, 2010). IC refers to all intangible resources that determine the value reflecting the level of organizational competitiveness. IC can leads

product development and new product development, new services and new processes through better innovation. Moreover, IC represents a critical knowledge factor to enhance and support continuous improvement for organizational performance (Schiuma and Lerro, 2008). According to Edvinsson and Malone (1997) IC is the sum of everything and everybody in the company that gives it a CA in the marketplace.

Natural resources, technology, and physical resources are easy to be imitated they do not consider as a sources of CA anymore (Kamukama et al., 2011). According to the resource-based view, organization gained sustainable CA by resources that are inimitable, rare, valuable and non substitutable (Barney, 1991). These resources are mostly unseen assets, which in a real sense they are intangible assets. IC is one of the most significant resources that are valuable, invisible and the most influential competitive weapon that influence organizational performance (Stewart, 1997). In support of this, Jaradate et al., (2012) argue that effective controlling of inimitable IC is better for gaining sustainable CA than financial investments and physical resources.

Welbourne (2008) argues that what bring the real values for organization are not the people you hire, but the relationships those people have with each other and with the key factors of the external environment. Accordingly, human and relational capitals are essentially related because the relationship that contributes to firm competitiveness raised, created and sustained by individuals within the organization. However, the importance of IC elements (human, relational and structural) is different in influencing competitive position and wealth of the organization (Bontis, 1998; Stewart, 1997). There were enormous empirical studies in literature examined the different contribution of individual IC elements to firm competitiveness and performance in different industries. For example, Wang & Changa (2005) state that there is a direct affects of all IC elements on CA in technological information industries, with the exception of human capital. Intellectual capital could potentially contribute to a firm's brand. Higher brand value is expected to strengthen long-term organizational performance, including productivity, profitability and innovation (Keller, 2008). In the same context, IC is the knowledge, skills, experiences and learned lessons that is to be improved and best utilized by a firm in order to perform its business effectively and achieve sustainable CA (Roose et al., 2005). From the above point of views, it can be concluded that despite various and diverse definitions, it is important that IC must be managed well in order to get the best out of its element (human, relational and structural) to produce products and services in the competitive manner. Moreover, Phusavat et al., (2011) state that IC elements have a positive influence on the financial performance in the manufacturing firms in term of profit growth, return on equity, return on assets, and employee productivity.

Kamukama, (2013) suggests that managers need to be aware that physical resources and financial assets need to be associated with intangible resources to get the long term survival and superior competitive position in the market. Organization must manage human capital as individual's skills and experiences, mange structural capital as the quality of knowledge related tools, and manage relational capital as the strength of relationships with its key stakeholders. Because of these resources are valuable, rare and hard to be imitated they help firms to gain sustainable CA. The aim of these IC elements (human, structural and relational) is to value the intangible asset and reassess the knowledge gaps to gain CA.

Based on the literature above, the following hypotheses are formulated:

Main hypothesis: *Ho: There is no significant effect of Intellectual Capital (Human Capital, Relational Capital and Structural Capital) on competitive advantage in the Jordanian Pharmaceutical companies at level ($\alpha \leq 0.05$).*

Sub-hypotheses:

HO.1: There is no significant effect of Human Capital on competitive advantage in the Jordanian Pharmaceutical companies at level ($\alpha \leq 0.05$).

HO.2: There is no significant effect of Relational Capital on competitive advantage in the Jordanian Pharmaceutical companies at level ($\alpha \leq 0.05$).

HO.3: There is no significant effect of Structural Capital on competitive advantage in the Jordanian Pharmaceutical companies at level ($\alpha \leq 0.05$).

3- Methodology and study design

The current study is considered as a quantitative explanatory study aims to examine the relationship between intellectual capital and competitive advantage in pharmaceutical companies in Jordan. In addition, it aims to explore awareness of the importance of intellectual capital and dimensions of competitive advantage in the targeted companies. A survey strategy was applied thorough a self-administrated questionnaire as the data collection method.

3-1 Population and sampling

13 pharmaceutical companies that were registered in the Jordanian Association of Pharmaceutical manufacturers (JAMP) in 2016 were targeted in this study. The entire population was chosen and surveyed, thus the need for sampling was negated. Analysis unit was top and middle managers in the pharmaceutical manufacturing. The

total number of all general managers, deputy managers, head of departments and head of divisions in the 13 companies was 220 , however, 207 questionnaires were returned with response rate (94%), two questionnaires were excluded as they were incomplete.

3-2 Data collection method

Primary data was gathered through a self-administrated questionnaire which was built based on the previous related studies, however, the item scales were modified to better fit with the context of this study. The questionnaire consists of two parts: the first part includes the demographic information about the respondents such as: age, gender, work experience, academic level and their position in the company. The second part measured the variables' dimensions. Five points Likert-scale was used as follow: (1): Strongly disagree, (2): Disagree, (3): Uncertain, (4): Agree, and (5): Strongly agree. Intellectual capital was measured through three main dimensions: human capital contains three statements; relational capital with three statements; and structural capital with four statements and were adopted mainly from Bontis (1998, 2000, 2004); Biri et al., (2013); Seleim & Khalil (2011). While, competitive advantage was measured by 14 statements, and were adopted from Chi et al., (2009); Andreeva & Kianto (2012); Al-Zoubi (2012).

4- Results and hypotheses testing

4-1 Sample and organizational Background Results

Table (2): sample background results

		Frequency	Percent
Gender	Male	139	67.8
	Female	66	32.2
	Total	205	100
Age	Less than 30 years	60	29.3
	30 < 40 years	74	36.1
	40 < 50 years	56	27.3
	50 years and above	12	5.9
	NA	3	1.5
	Total	205	100
Educational Level	Bachelor Degree	150	73.2
	Master Degree	30	14.6
	PhD	3	1.5
	Others	22	10.7
	Total	205	100
Work of Experience	Less than 5 years	43	21.0
	5 to < 10 years	51	24.9
	10 to < 15 years	51	24.9
	15 years and above	60	29.2
	Total	205	100
Respondents' Job Titles	Manager	51	24.9
	Deputy Manager	16	7.8
	Head of Department	72	35.1
	Head of Division	66	32.2
	Total	205	100

Results on Table (2) shows that 139 of the participants were males with a percentage of 67.8% and 66 were female shaping a percentage of 32.2%. This indicates that the number of males in the managerial level of Jordanian pharmaceutical companies is almost double of the number of female. It shows also the age of the largest group of the sample was (30 – 40) years old with the percentage of 36.1%. It can be figured out from the above table that most of the people who occupied managerial levels are still young people with good experience. This is an indication that the majority of workers in the managerial levels are still a young age which is characterized by the ability to tender and innovate as the pharmaceutical industry.

Table (2) also shows that (150) of respondents' education was reported as bachelor degree with the percentage of (73.2%). The second most frequent level (30) of respondents' education was reported as master degree with the percentage of (14.6), indicating that Jordanian pharmaceutical companies seek to recruit high degree of qualification for top and managerial levels. In terms of work experiences the table shows that the largest group of respondents with frequency of (60) and percentage of (29.2%), indicates that their years of experience is 15 years and above. The second largest groups are the respondents with (5 < 10) years and (10 < 15) years of experience, with frequency of (51) and the percentage of (24.9%) for each category. This result

indicates that Jordanian Pharmaceutical companies attract and maintain good experienced employees. (72 or 35.1%) of the participants indicated that their job title is head of department, (66 or 32.2) indicated that their job title is head of division. Manager was the third frequent of the respondents job title with the frequency of (51) and percentage of (24.9%).

4-2 Analysis of the Intellectual Capital constructs

Table (3) shows the values of means, standard deviation and relative importance for the intellectual capital in the Jordanian pharmaceutical companies. As indicated in the table structural capital was the most intellectual capital being addressed by the study sample as it ranked the first by a mean of (3.73) and (0.81) for SD, while the relational capital was the lowest intellectual capital being addressed by the respondents as its mean was the least (3.67) reflecting a moderate importance level. The overall intellectual capital in the Jordanian pharmaceutical companies recognized by a mean of (3.70) reflecting a high degree importance level as addressed by the respondents of the study.

Table (3) Means, Standard Deviations and Relative Importance for the Intellectual Capital Constructs

No.	Intellectual Capital Constructs	Mean	SD	RI	Level	Rank
1	Human Capital	3.71	0.73	74.20	high	2
2	Relational Capital	3.67	0.85	73.40	moderate	3
3	Structural Capital	3.73	0.81	74.60	high	1
	Intellectual Capital	3.70	0.68	74.00	high	

(1 – 2.33) low; (2.34 – 3.67) moderate; (3.68 – 5.00) high.

4-2-1 Analysis of human capital construct results

Table (4) Means, Standard Deviations and Relative Importance for the Items of Human Capital Construct.

No.	Items	Mean	SD	RI	Level	Rank
1	The company is keen to attract the human resources who have adequate skills and experience in various areas of its work.	3.68	0.96	73.60	high	2
2	The company devote more time and effort to improve and develop employees' knowledge and skills	3.44	0.99	68.80	moderate	3
3	The company relies on the specialized research competencies of new product development.	4.02	0.92	80.40	high	1
	Human Capital	3.71	0.73	74.20	high	

Table (4) presents the values of means, standard deviation and relative importance for the items related to human capital construct in the Jordanian pharmaceutical companies. It can be seen that item number (3) which states that "The company relies on the specialized research competencies of new product development" was the most item being used as addressed by the study sample since it ranked the first by a mean of (4.02) with the high level of importance as (80.40) for RI, while item number (2) which states that " The company devote more time and effort to improve and develop employees' knowledge and skills " was the lowest item being used as its mean was the least (3.44). The overall human capital recognized by a mean of (3.71) reflecting a high level of importance as addressed by the respondent of the study.

4-2-2 Analysis of Relational capital construct results

Table (5) Means, Standard Deviations and Relative Importance for the Items of Relational Capital Construct

No.	Items	Mean	SD	RI	Level	Rank
1	The company adopts the alliance strategies with other companies to benefit from their expertise.	3.73	0.98	74.60	high	1
2	The company maintains a long-standing relationship with suppliers.	3.69	1.06	73.80	high	2
3	The company gets customers' feedback to the final product before final release.	3.57	1.00	71.40	moderate	3
	Relational Capital	3.67	0.85	73.40	moderate	

Table (5) presents the values of means, standard deviation and relative importance for the relational capital in the Jordanian pharmaceutical companies. The table indicates that item number (1) which states that "The Company adopts the alliance strategies with other companies to benefit from their expertise" was the most item being used as addressed by the study sample as it ranked the first by a mean of (3.73) with (74.60) for the RI, while item number (3) which states that "The company gets customers' feedback to the final product before final release" was the lowest item being used as its mean was the least (3.57) with the least importance as it RI was (71.40). The overall relational capital recognized by a mean of (3.67) reflecting a moderate level of importance as addressed by the respondent of the study.

4-2-3 Analysis of structural capital construct

Table (6) Means, Standard Deviations and Relative Importance for the Items of Structural Capital Construct.

No.	Items	Mean	SD	RI	Level	Rank
1	The company is keen to document the knowledge in manuals and easily accessible databases.	3.67	1.11	73.40	moderate	3
2	The systems and procedures in the company support innovation and new ideas	3.67	1.12	73.40	moderate	3
3	The company owns the mechanics of techniques for the exchange and sharing of knowledge among all parties inside and outside the company.	3.87	0.99	77.40	high	1
4	The company develops clear strategies and procedures are clear to the management of intellectual property rights (talent, patents, and brand) as a major asset for the company.	3.71	1.05	74.20	high	2
	Structural Capital	3.73	0.81	74.60	high	

Table (6) presents the values of means, standard deviation and relative importance for the items of structural capital construct in the Jordanian pharmaceutical companies arranged decently. Item number (3) which states that "The company owns the mechanics of techniques for the exchange and sharing of knowledge among all parties inside and outside the company" was the most item being used as addressed by the study sample as it ranked the first by a mean of (3.87) with (0.99) for SD and (77.40) for RI, while item number (2) which states that "The systems and procedures in the company support innovation and new ideas " and item number (1) which states the " The company is keen to document the knowledge in manuals and easily accessible databases" were the lowest items being used as their mean was the least (3.67) with the same level of importance as (73.40) for the RI. The overall structural capital recognized by a mean of (3.73) reflecting a high level of importance as addressed by the respondent of the study.

4-3 Analysis of the Competitive Advantage Items

Table (7) Means, Standard Deviations and Relative Importance for the Items of Competitive Advantage Construct.

No.	Items	Mean	SD	RI	Level	Rank
1	The company is characterized by rapidly responding to the adoption of modern technology in their administrative and operational processes	3.65	0.90	73.00	Moderate	9
2	The company is characterized by responding quickly to meet the customers' needs & desires.	3.82	0.86	76.40	High	3
3	The company is characterized by quick response to the environmental changes that affect the industry.	3.73	0.94	74.60	High	5
4	It is easier to gather information about the company's customers and competitors.	3.70	0.92	74.00	High	8
5	The company is distinguished by its products development and new products development to meet the needs of customers.	3.90	0.92	78.00	High	1
6	The company cooperates with international centers to improve their ability to achieve good quality and excellence in their work.	3.76	1.04	75.20	High	4
7	The company offers its products with more benefits and high specifications better than competitors.	3.88	1.04	77.60	High	2
8	The company characterized by having a distribution channels for quick and efficient delivery of products to customers better than competitors	3.72	0.96	74.40	High	6
9	The company has distinctive location for its offices and factories, compared with competitors.	3.61	1.04	72.20	Moderate	10
10	The company has lower distribution and promotion costs compared with competitors.	3.45	0.99	69.00	Moderate	12
11	The company offer prices for its products lower than competitors' prices.	3.45	0.90	69.00	Moderate	12
12	The Company reserves at the lowest level of inventory, compared with competitors.	3.28	0.97	65.60	Moderate	14
13	The company is running and use of equipment to the maximum possible efficiency.	3.72	0.94	74.40	High	6
14	The company is securing raw materials and components at the lowest cost compared with competitors.	3.54	1.00	70.80	Moderate	11
	Competitive Advantage	3.66	0.63	73.20	Moderate	

Table (7) summarizes the values of means, standard deviation and relative importance of the items for the competitive advantage construct in the Jordanian pharmaceutical companies arranged. The table indicates that item number (5) which states that "The company is distinguished by its products development and new

products development to meet the needs of customers" was the most item being used as addressed by the study sample as it ranked the first by a mean of (3.90) and a high level of relative importance as RI was (78.00), while item number (12) which states that " The company reserves at the lowest level of inventory, compared with competitors" was the lowest item being used as its mean was the least (3.28) with a moderate level of importance as RI was (65.60). The overall competitive advantage recognized by a mean of (3.66) reflecting a moderate level of importance as addressed by the respondent of the study.

4-4 Testing the Hypotheses

The main hypothesis:

HO: There is no significant effect of intellectual capital (human capital, relational capital and structural capital) on competitive advantage in the Jordanian pharmaceutical companies at level (α ≤ 0.05).

Table (8) Multiple Linear Regression for Testing the Effect of Intellectual Capital on Competitive Advantage

Ind. Variable	R	R^2	Cal. F	Tab. F	Sig(f)	Constructs	β	t	Sig(t)	Decision
Intellectual Capital	0.673	0.452	55.34	2.65	0.000	Human Capital	0.191	2.94	0.004	Reject
						Relational Capital	0.363	4.95	0.000	
						Structural Capital	0.227	2.91	0.004	

*The effect is significant at level (α ≤ 0.05)

Table (8) indicates the results of multiple linear regressions for testing the effect of intellectual capital on competitive advantage. The calculated (Cal.) f value (55.34) is greater than the tabulate (Tab.) f as (2.14). This result suggests a statistical effect of intellectual capital on competitive advantage as the related probability (Sig. f = 0.000) was ≤ 0.05). According to the results included in the table above the value of R^2 expresses the percentage of variation in the dependent variable (competitive advantage) that could be referred to the independent variables (intellectual capital). Accordingly, the intellectual capital explains a percentage of 45.2 %.

The t statistics tests the linearity significance of each intellectual capital constructs in relation to the dependent variable. Human capital, relational capital and structural capital showed a significant linearity importance in the prediction model, the magnitude of effect of these constructs on the dependent variable reflected from beta (β) coefficient as (0.191), (0.363), and (0.227) respectively they were statistically significant because the related probability values (sig. t) were ≤ 0.05.

As a result the null hypothesis is rejected and the alternative one is accepted which indicates that " There is a significant effect of intellectual capital (human capital, relational capital and structural capital) on competitive advantage in the Jordanian pharmaceutical companies at level (α ≤ 0.05)".This fact justified based on the probability value of f test included in the table which was ≤ 0.05. This finding provides evidence to managers as decision makers in the Jordanian pharmaceutical companies about the importance of the intellectual capital as a tool for gaining competitive advantage.

The above table (8) also includes the test of each sub hypothesis related to the third main hypothesis as shown next.

HO-1: There is no significant effect of human capital on competitive advantage in the Jordanian pharmaceutical companies at level (α ≤ 0.05).

The t test value mentioned in table (8) was (2.94) with a probability (Sig.t = 0.004) suggests a significant effect of human capital on competitive advantage in the Jordanian pharmaceutical companies as the probability value was less than (0.05). The effect magnitude was expressed by the standardized beta (β) coefficient (0.191) to reflect how much human capital affect competitive advantage. This value means that there is a positive significant effect of human capital on competitive advantage, thus, if the competitive advantage has increased by one unit, the magnitude effect of the human capital will be (0.191), with the constant of other constructs. As a result the null hypothesis is rejected and we accept the alternative one which indicates that "there is a significant effect of human capital on competitive advantage in the Jordanian pharmaceutical companies at level (α ≤ 0.05)". This finding provides evidence for managers in the Jordanian pharmaceutical companies about the importance of human capital to gain competitive advantage.

HO-2: There is no significant effect of relational capital on competitive advantage in the Jordanian pharmaceutical companies at level (α ≤ 0.05).

The t test value mentioned in table (8) was (4.95) with a probability (Sig.t = 0.000) suggests a significant effect of relational capital on competitive advantage in the Jordanian pharmaceutical companies as the probability value was less than (0.05). The effect magnitude was expressed by the standardized beta (β) coefficient (0.363) to reflect how much relational capital affect competitive advantage. This value means that there is a positive significant effect of relational capital on competitive advantage, thus, if the competitive advantage has increased

by one unit, the magnitude effect of the relational capital will be (0.363), with the constant of other constructs. As a result the null hypothesis is rejected and we accept the alternative one which indicates that "there is a significant effect of relational capital on competitive advantage in the Jordanian pharmaceutical companies at level ($\alpha \leq 0.05$)". This finding provides evidence for managers in the Jordanian pharmaceutical companies about the importance of relational capital to gain competitive advantage.

HO-3: There is no significant effect of structural capital on competitive advantage in the Jordanian pharmaceutical companies at level ($\alpha \leq 0.05$).

The t test value mentioned in table (8) was (2.91) with a probability (Sig.t = 0.004) suggests a significant effect of structural capital on competitive advantage in the Jordanian pharmaceutical companies as the probability value was less than (0.05). The effect magnitude was expressed by the standardized beta (β) coefficient (0.227) to reflect how much structural capital affect competitive advantage. This value means that there is a positive significant effect of structural capital on competitive advantage, thus, if the competitive advantage has increased by one unit, the magnitude effect of the structural capital will be (0.227), with the constant of other constructs. As a result the null hypothesis is rejected and we accept the alternative one which indicates that "there is a significant effect of structural capital on competitive advantage in the Jordanian pharmaceutical companies at level ($\alpha \leq 0.05$)". This finding provides evidence for managers in the Jordanian pharmaceutical companies about the importance of structural capital to gain competitive advantage.

5- Discussion

The main purpose of this study is to examine the effect of intellectual capital (human, relational, and structural capital) on competitive advantage in Jordanian pharmaceutical companies. As a results showed in table (8) the null hypothesis is rejected and the alternative one is accepted which indicates that "There is a significant effect of intellectual capital (human capital, relational capital and structural capital) on competitive advantage in the Jordanian pharmaceutical companies at level ($\alpha \leq 0.05$)". The value of R^2 expresses the percentage of variation in the dependent variable (competitive advantage) that could be referred to the independent variables (intellectual capital). Accordingly, intellectual capital explains a percentage of (45.2 %) of the variance in competitive advantage. The value of calculated f equals (55.34) with the significant f equals (0.000) which is ($\leq$ 0.05). Therefore, intellectual capital constructs together have a significant positive effect on the competitive advantage in the Jordanian pharmaceutical companies.

This result could be due to best understanding of the benefits and importance of intellectual capital by the managers of Jordanian pharmaceutical companies as one of the major drivers for gaining competitive advantage. To gain competitive advantage organization must focus on the resources that are rare, valuable and hard to be imitated. Intellectual capital as intangible assets has become more valuable than tangible asset for organizations to gain success and to be more competitive in the market. Through the good management of intellectual capital, organization gets more innovative people with good skills. Good innovative people add more value for organization to gain competitive advantage through product differentiation. Effective management of intellectual capital means building good relations with customers and suppliers in order to have customer loyalty and committed suppliers. Managers on Jordanian pharmaceutical companies realize that intellectual capital (Human, Relational and Structural capital) include resources that valuable and hard to be imitated by others, which provide sustainable competitive advantage and superior performance for the organization. These findings are consistent with the studies of (Al Zoabi, 2012; Kamukama, 2013; Hamza , 2008; Curado & Bontis, 2007). All of these studies found that intellectual capital has a strong and positive significant effect on competitive advantage and organizational performance.

Moreover, findings in the table above indicate that each of the intellectual capital constructs has its own effect on the competitive advantage. Through these results, the sub-hypotheses (HO-1), (HO-2) and (HO-3) were investigated. For (HO-1), the human capital with the results (β = 0.191, Sig. t = 0.004) has a significant positive effect on competitive advantage as the Sig. t $\leq$ 0.05. Therefore, the null hypothesis rejected and the alternative one accepted. This finding supported well in the literature of intellectual capital, (Kamukama, 2013; Phusavat et al., 2011). In support of (HO-2), the relational capital with the results (β = 0.363, Sig. t = 0.000) has a significant positive effect on competitive advantage as the Sig. t $\leq$ 0.05. Therefore, the null hypothesis rejected and the alternative one accepted. This finding supported well in the literature of intellectual capital, (Kamukama, 2013; Hamza & Ismail, 2008; Curado & Bontis, 2007). For (HO-3), the structural capital with the results (β = 0.227, Sig. t = 0.004) has a significant positive effect on competitive advantage as the Sig. t $\leq$ 0.05. Therefore, the null hypothesis rejected and the alternative one accepted. This finding supported well in the literature of intellectual capital, (AlZoabi, 2012; Kamukama, 2013; Hamza, 2008; Curado & Bontis, 2012). These results indicate those managers in the Jordanian pharmaceutical companies aware of the importance of each one of the intellectual capital factors and how they might increase the competitiveness in the market place.

In addition, this study aims to explore awareness of the importance of intellectual capital and dimensions. To achieve this objective the researcher has recognized the means, deviation and the relative

importance related to intellectual capital constructs (human capital, relational capital, and structural capital) in the Jordanian pharmaceutical companies as addressed by the sample of the study, as shown in table (3). The overall intellectual capital in the Jordanian pharmaceutical companies recognized by a mean of (3.70) reflecting a high degree importance level as addressed by the respondents of the study. These results are true since pharmaceutical companies are knowledge–based-intensive companies, and this type of companies need to have a high skilled and educated people with good experience. This can be figured out for the personal information analysis in table (2), According to these results it can be indicated for the awareness of the management in these companies to the importance of managing intellectual capital effectively to achieve a superior competitive position in the domestic and global market. The results indicated that structural capital was the most intellectual capital being used as addressed by the respondents' answers as it ranked the first by a mean of (3.73). These results showed the agreement of all respondents about the relative importance of structural capital as (RI = 74.60). Most of the pharmaceutical companies in Jordan formulate effective strategies and procedures to manage their intellectual property rights (talent, patents, and brand) as a major asset for the company. Also these results indicate that many pharmaceutical companies take into account the importance of having easily accessible database. Moreover, many Jordanian pharmaceutical companies have clear procedures to support innovation and new ideas.

The relational capital was the lowest intellectual capital addressed by the respondents of the study as its mean was the least (3.67) which is too close to the high level as the scale was (3.68 – 5) high. However the relative importance of the relational capital was the least as (73.40). This result can justified from the relative importance of the item number three related to this construct which states that "The company gets customers' feedback to the final product before final release" was the lowest item being used as its mean was the least (3.57) with the least relative importance (RI=71.40) as addressed by the respondents of the study. This result means that not all the pharmaceutical companies get feedback to the final products before final release.

Importantly, for the awareness of competitive advantage dimensions the results revealed a moderate level of importance as addressed by the respondent of the study as the mean was (3.66) with (73.20) for the relative importance. The results indicate that most of the pharmaceutical companies in Jordan realize the importance of the competitive advantage in order to confront the rapid environmental challenges and change, globalization and the extensive worldwide completion. They seek to gain competitive advantage to enhance their competitive position, market share and increase profitability. Jordanian pharmaceutical companies are aware from the dimensions and strategies of competitive advantage as quality, cost and flexibility. For flexibility, this can be illustrated from the mostly high agreement of importance on the items (1-5) that cover the issues related to flexibility. Item number (5) which states "Company is distinguished by its products development and new products development to meet the needs of customers" was the highest mean (3.90) with the high relative importance (RI = 78.00) as addressed by the respondents of the study. This is a good indication for the understanding of competitive advantage strategies. They realize that competitive advantage can be gain through differentiation strategy via either product development or new product development. Item number (1) which states "The company is characterized by rapidly responding to the adoption of modern technology in their administrative and operational processes" was the lowest mean (3.65) with the moderate level of relative importance (RI = 73.00). This could be due to need for more advanced technology.

For quality, this can be illustrated from the items (6-9) that cover the issues related to quality. Item number (5) which states "The company offers its products with more benefits and high specifications better than competitors" was the highest mean (3.88) with the high relative importance (RI = 77.66) as addressed by the respondents of the study. This is a good indication for the understanding of competitive advantage strategies. They realize that competitive advantage can be achieved when they offer a superior benefit and value to customers. Item number (7) which states "The company has distinctive location for its offices and factories, compared with competitors" was the lowest mean (3.61) with the moderate level of relative importance (RI = 72.20). This could be due to need for better location for some companies in term of offices or factories.

Cost dimension can be illustrated from the items (10-14) that cover the issues related to cost. Item number (13) which states "The company is running and use of equipment to the maximum possible efficiency" was the highest mean (3.72) with the high relative importance (RI = 74.40) as addressed by the respondents of the study. This is a good indication for the understanding of competitive advantage strategies. They realize that competitive advantage can be achieved using cost leadership strategies without hurting the quality. Item number (12) which states "The company reserves at the lowest level of inventory, compared with competitors" was the lowest mean (3.28) with the moderate level of relative importance (RI = 65.60). This could be due to need for better inventory management or to the fluctuations in demand in some of the pharmaceutical companies.

6. Conclusions

The study addressed empirical evidence that have not been addressed before in the literature, more especially in the Jordanian pharmaceutical industry. The model of the study tested by using the sample of 205 usable

questionnaires backed from the respondents of the 13 pharmaceutical. The study presented that there was a relative contribution of intellectual capital elements in effecting competitive advantage. The results showed that competitive advantage can be created via the improvement of intellectual capital. It can be seen from the results that managers at the Jordanian pharmaceutical companies are aware of the importance of intellectual capital as a tool to create, improve and gain more success and superior competitive position in the local and global market.

The main contribution of this study comes from the fact that most of the previous studies focused on the relationship of intellectual capital and competitive advantage. This research investigates the impact of intellectual capital on competitive advantage in Jordanian pharmaceutical companies. This has not been adequately examined in the past by other researches. This research provides a better understanding of the concept of intellectual capital and competitive advantage. The research ascertains the importance of intellectual capital in order to gain sustainable competitive advantage. This research adds more contributions through providing theoretical taxonomies of the research's variables as intellectual capital and competitive advantage drown from the related literature review and previous studies. These taxonomies include the dimensions and sub-dimensions for all the variables collected from different related studies. Also the researcher presented operational definitions from his point view for all the dimensions and the constructs of the study.

This study has many managerial implications. First since competitive advantage is no longer rooted in tangible assets, the importance intellectual capital resources must be aware of. Companies are recommended to identify high experienced people and assign them the role as intellectual capital champion. These people can prepare plans and formulate strategies for managing intellectual capital. Second: Jordanian pharmaceutical companies must pay more attention to the relationships with the key stakeholders such as customers and suppliers. Good relationships will strengthen customer's loyalty, supplier's commitment, and help organization to acquire new knowledge. Third: since human capital is recognized as the main construct that enhance the other intellectual capital factors, it is recommended that Jordanian pharmaceutical companies must provide training programs to support staff with specialized skill related to their jobs and tasks. It is also recommended that recruiting and selection employees' process should consider professional and social applicants' competencies. Future research in the same field with the same variables is advised to verify more justifications of the results by using qualitative research or by using both qualitative and quantitative research together. It would be useful to contact the customers of Jordanian pharmaceutical companies as another sample of the study to confirm the answers of items related to the competitive advantage.

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