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Intellectual Capital and its Impact on the Innovation.

Empirical study applied on the UNRWA Gaza field Office

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نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة عمادة الدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ **محمد مروان خليل الأغا** لنيل درجة الماجستير في **كلية *التجارة*/ قسم إدارة الأعمال** وموضوعها:

Intellectual Capital and its Impact on the Innovation Empirical study applied on the UNRWA Gaza field Office

وبعد المناقشة التي تمت اليوم السبت 02 رمضان 1433 هـ، الموافق 2012/07/21م الساعة الثانية ظهرًا، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

أ.د. ماجـد محمد الفـرّا	**مشرفاً ورئيساً**
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وبعد المداولة أوصت اللجنة بمنح الباحث درجة الماجستير في **كلية *التجارة*/ قسم إدارة الأعمال.**

واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق ،،،

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Dedication

This work is lovingly dedicated to the memory of my mother Suad Shurrab and my uncle Dr. Ihsan Al Agha, who taught me to love, value and appreciate education and whose commitment, strength and faith inspired my career life.

I also dedicate this work to my father Dr. Mawrwan, my loving wife Nashwa, my aunt Majdeia, my siblings; Jihan, Mona, Khalil, Amr and Ahmad and finally to my sons Marwan, Anas and the soul of my son Abdallah.

who supports me in everything, to my friends who helped me finished this project, and most of all to the Almighty God who gives me strength and good health while doing this.

I finally dedicate this work to all my friends and colleagues.

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List of abbreviations

	Abbreviation	Denotation
1	IC	Intellectual capital
2	HC	Human capital
3	SC	Structural capital
4	RC	Relational Capital
5	GFO	Gaza field office
6	UNRWA	United Nations Relief and Works Agency
7	OD	Organizational development
8	DIC	Direct Intellectual Capital methods
9	MCM	Market Capitalization Methods
10	ROA	Return on Assets methods
11	SC	Scorecard Methods
12	R&D	Research and development

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Abstract

The research aims to review intellectual capital components, characteristics and its correlation to innovation through diagnosing and identifying the impact of intellectual capital to the innovation for the UNRWA-Gaza field office (GFO) senior staff members.

Intellectual capital is an essential resource for companies in light of modern knowledge economy, which is another form of capital recognized in the new economy. The study presented different measurement models, however the adopted model is Skandia Navigator Model developed by Edvinsson and Malone. It consists of intellectual capital of the company from the following basic components:

1. Human capital
2. Structural capital
3. Relational capital

The study questionnaire targeted 104 from UNRWA-GFO senior staff members with response rate 84.2% according to certain criteria defined by consulting five experts and decision makers in the field.

The data analysis conducted through different tools using mean and sig value to describe the characteristics of intellectual capital nature components, and spearman to test the correlation between the study variables.

The study findings were about the value of intellectual capital components proportional weighted mean values are: human capital (64.2%), structural value (56.9%) and relational value (65.5%), which show that all the components needed to be improved. The correlation test found that: all the intellectual capital components: human, structural and relational are positive correlated to innovation. Where the study recommend promoting intellectual capital concept and educating senior staff members on the importance of measuring, managing and developing intellectual capital. In-addition to develop innovation indicators that are linked to UNRWA strategy.

الملخص

تهدف الدراسة الى استكشاف مفهوم رأس المال الفكري و عناصره من حيث وصف حالتــه و اختبــار العلاقة بين رأس المال الفكري و الابداع لدى العاملين في فــي وكالــة غــوث و تــشغيل اللاجئــين الفلسطينيين – الأونروا إقليم غزة.

رأس المال الفكري (Intellectual Capital) من الموارد الأساسية للمنظمات الحديثــة فــي ظــل إقتصاد المعرفة ، وهو شكل آخر من أشكال رأس المال المعترف به في الإقتصاد الجديــد . ويتكــون رأس المال الفكري للشركة من المكونات الأساسية التالية :

1. رأس المال البشري
2. رأس المال الهيكلي
3. رأس مال العلاقات

يمثل هذا البحث دراسة وصفية تحليلية لرأس المال الفكري ، مكوناته ، تقسيماته ، طرق قياسه و أثره على لابداع لدى العاملين في وكالة غوث و تشغيل اللاجئين الفلسطين الأونروا – إقليم غزة، من خلال استخدام نموذج اديفنسون و الذي يعتبر أقرب نموذج قياس لحالة الأونروا من وجهة نظر الباحث.

وشملت الدراسة 104 مدير عامل في الأونروا حيث كانت نسبة الردود 84.2% بناء علــى المعــايير التي تم تحديدها في المقابلات التي تمت مع خمسة من صانعي القرار و الخبراء في هذا المجال.

عملية تحليل البيانات تمت من خلال تحديد قيم الوسط الحسابي و معدلاته لوصف مكونات رأس المــال الفكري بالاضافة الى اختبار سبيرمان لاختبار العلاقات للفرضيات.

وكانت النتائج واضحة في ضرورة اتخاذ اجراءات لتحسين مستوى رأس المال الفكري و مكوناته مــن خلال عدة مقترحات تم عرضها في الدراسة. حيث خرجت الدراسة بإستنتاج بــأن قــيم رأس المــال الفكري هي: البشري 64.2%، الهيكلي 56.9% و العلاقات 65.5%، بالاضافة الــى وجــود علاقــة ايجابية بين مكونات رأس المال الفكري الثلاثة و الابداع لدى العاملين في الأونروا و هــو مــا يؤكــد ايجابية فرضيات الدراسة.

و أوصت الدراسة بضرورة توعية المدراء بمفهوم رأس المال الفكري و أهميتــه وطرفــق ادارة فــي المؤسسة مع ربط مؤشرات الابداع لدى العاملين في الأونروا باستراتيجياتها و خططها.

Chapter 1

Introduction

1. Introduction to the research

1.1. Preface

The value of an enterprise is made of physical assets, various financial assets and, finally, intangible assets, i.e., intellectual capital (IC). The term intellectual capital conventionally refers to the difference in value between tangible assets (physical and financial) and market value (Magrassi 2002). Measuring the real value and the total performance of intellectual capital's components is essential for any corporate head who knows how high the stakes have become for corporate survival in the knowledge and information age. So, the main point is how an organization can affect the firm's stock price using the leverage of intellectual assets. (Khavandkar and Ehsan, 2009)

UNRWA is unique in terms of its long-standing commitment to one group of refugees and its contributions to the welfare and human development of four generations of Palestine refugees. Originally envisaged as a temporary organization, the Agency has gradually adjusted its programmes to meet the changing needs of the refugees. Today, UNRWA is the main provider of basic services - education, health, relief and social services - to over 5 million Registered Palestine refugees in the Middle East (UNRWA website, 2011).

Recently, UNRWA has developed a comprehensive Organizational Development (OD) to overcome the current shortcomings and pitfalls on the various levels including the HR capacity building, compensation scheme and most importantly the appraisal system. (Mousa, 2011). One of the main aims the OD is looking after the intellectual capital in developing staff capacity building, re-hierarchy of organizational chart according to the changes requirement. The new hierarchy created new post with new tasks. This forced UNRWA to evaluate its staff carefully to fill the new posts, which forced the staff member to get higher certificate and develop themselves to meet the new posts requirements.

This is the main reason UNRWA has accumulated experience and expertise, some of them overqualified for their job title.

From this standpoint, the research idea came to the researcher attention, wherever the intellectual capital is one of the modern topics in the business field which is not

saturated in the local organizations researches, the research is focusing on analyzing and linking the impact of Intellectual capital on the innovation in the UNRWA-Gaza field office (GFO)

1.2. Background

Intellectual Capital is often described as the difference between the market- and the booking value of an enterprise. It is undisputed that the intellectual capital represents the most important asset of a knowledge based organization (Auer, 2004). This value is usually not declared in annual reports and does not appear in conventional analysis models. Intellectual Capital must be converted into knowledge resources to formulate an Intellectual Capital statement. The most common classifications or types of knowledge resources are 1) technologies, 2) processes, 3) stakeholders and (of course) 4) employees. The three components of IC are interactive: The human capital raises the structural capital; both together generate the relational capital. (Auer, 2004)

Executives know the importance of fixed assets and financial capital, but they are unclear about the value of intellectual capital (Auer, 2004). Increasingly, there is criticism from stakeholders that traditional balance sheets do not account for the intangible factors that influence an organization's value and its growth prospects.
So, financial analysts are asking for standardized tools to measure and benchmark intangibles. While searching for best practices, it not easy to find a convincing approach, but he has found some ideas (Auer, 2004).

Additionally, Global competition and the ever-changing nature of innovation and creativity as a critical factor, force business enterprises to transfer new values or bring out new dimensions in addition to the current ones. These obligations also require the complete redesign of present structures, perceptions, and approaches in management and organizational atmosphere. One of the tools making this metamorphosis possible is the acquired intellectual capital. (Lee and Florida, 2010)

1.3. Problem statement

The research problem represented in investigation the impact of UNRWA's intellectual capital on its innovation aspects; however this statement is divided into three questions:

- Do the UNRWA intellectual capital participate in the development of innovation
- Is there a correlation and differences between intellectual capital components and innovation
- Does the UNRWA top management have a clear view of its intellectual capital?

1.4. Study objectives:

In light of the above research statement; the research aims to diagnose and identify the impact and relationship between intellectual capital components and innovation for UNRWA senior staff members. This includes the following objectives:

1. Investigate the UNRWA intellectual capital level and its participation in developing its innovation.
2. Evaluate the level of innovation in UNRWA-Gaza Field Office (GFO).
3. Explore the relationship between intellectual capital and innovation
4. Presents the recommendations according to the study finding and results.

1.5. Study variables

The study contains two types of variable, dependent and independent variables, each variable divided into sub-variables as following:

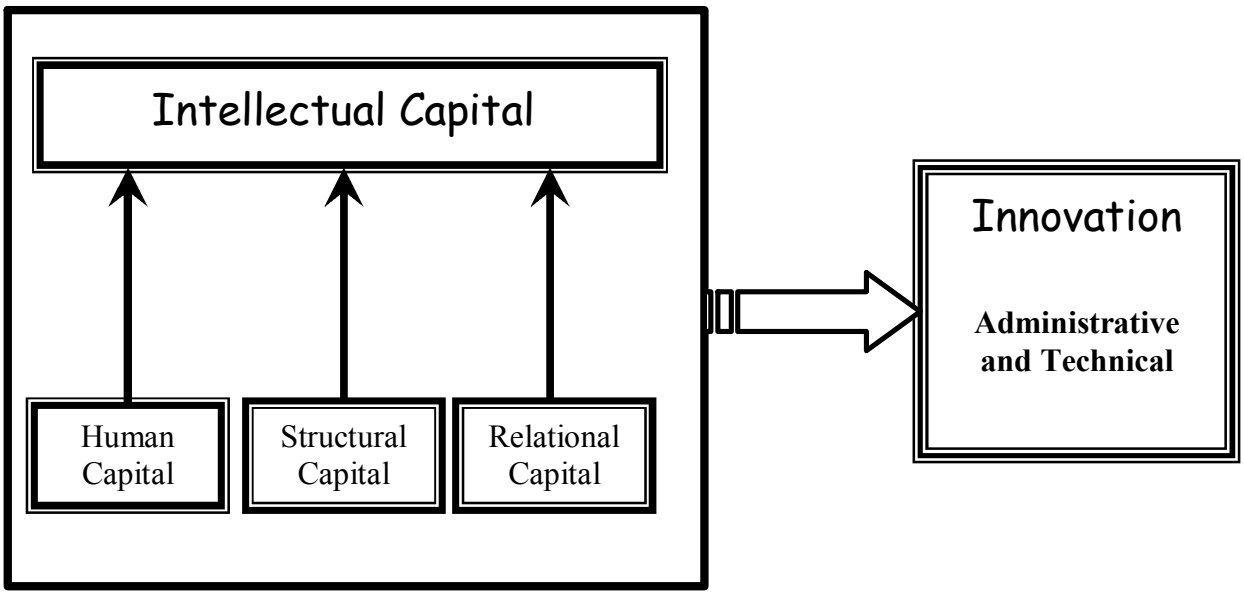
1.5.1. **Independent Variable:** Intellectual capital which is represented by different field:

1. Human Capital
2. Structural capital
3. Relational capital.

1.5.2. **Dependent Variable:** Innovation which is represented in two types:

1. Technical innovation
2. Administrative innovation

Figure (1.1): **Research variables chart**



1.6. Research Hypotheses

The research consist of two main hypotheses, each hypotheses segmented to three sub- hypotheses according to the Intellectual Capital variables.

Hypothesis number (1):

Intellectual capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).

Sub- hypotheses:

H-1.1: Human capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).

H-1.2: Structural capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).

H-1.3: Relational capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).

Hypothesis number (2):

There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its impact on the innovation due to personal characteristics

Sub- hypotheses:

H-2.1: There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its impact on the innovation due to job title.

H-2.2: There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its impact on the innovation due to job grade.

H-2.3: There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its impact on the innovation due to chain of supervision

1.7. Study importance:

Theoretically, many researchers have emphasized the influence of intellectual capital on business performance; and empirical studies are still under development. Even though some researchers have contributed to intellectual capital studies, most of them conducted empirical researches on industries and profit businesses in general (Abdel-Aziz, 2010). None of the studies were to non-profit organizations as the case with this research, which is applied to the UNRWA – Gaza field which one of United Nations organizations, an International non-profit organization.

This research will describe the intellectual capital status at UNRWA-GFO in-order to identify the positives and negatives and how Intellectual capital impacts its innovation aspects as well.

This research will add important value on the business studies library with important conclusions and recommendations at the same time to UNRWA programs and departments for the enrichments of its research and development (R&D).

1.8. Study limitations

Although the research has reached its aim, there were some unavoidable limitations. First, Because of the population limit, this research was conducted only on a small size of population who are working in Gaza field office, wishing that I could apply the study on all UNRWA five fields and more participants. Therefore to generalize the results for larger group. Second, limited research available on this topic applied to non-profit organizations.

1.9. Thesis structure:

The study consists of five chapters:

- Chapter ONE: (Introduction), includes a brief description of the study framework. It also includes a statement of the problem, research hypothesis, objectives, importance of the study and outline of the thesis.

- Chapter TWO: (Literature review), includes a brief discussion of relevant area in three sections including: intellectual capital and innovation, previous studies locally and internationally and brief description about United Nations Relief and Works Agency for Palestine Refugees-UNRWA, activities in general and especially in Gaza.

- Chapter THREE: (Methodology), includes research design, study population and sample, the instrument ―questionnaire, piloting, data collection, data entry and analysis.

- Chapter FOUR: (Data analysis and discussion), includes characteristics of UNRWA intellectual capital, percentages, significance and correlation tables relating to questionnaire's data, study constructs and hypotheses. In-addition to interpretation of the analysis results

- Chapter FIVE (Conclusions and Recommendations), includes conclusions and the recommendations of the study, also the recommended topics for further studies.

- Bibliography and references.
- Appendixes.

Chapter 2

2. Literature review

2.1. Section one: Intellectual capital and innovation

2.2. Section two: Previous studies

2.3. Section three: United Nations Relief and Works Agency for Palestine refugees-UNRWA, Gaza Field Office

CHAPTER TWO:

Section one

2.1. Intellectual Capital and innovation

2.1.1. Introduction and Background

This chapter aims to give background about the concept and dimensions of Intellectual capital (IC) in general, also it highlights the innovation and how Intellectual capital and innovation are interrelated.

This chapter consists of two sections 1) Intellectual capital and 2) Innovation.

The literature Intellectual capital (IC) in the recent years has great increase as well as having an important share in the researches and organizational analysis overseas and their effects on the results of institutions applying such heuristics. (Zerenler, 2008)

In the area of knowledge, the intangible assets of the organizations have most likely taken the place of tangible assets and have probably become the most important resources that create value for their business nowadays. “Intellectual capital”, namely the knowledge assets, has become one of the most-discussed business management topics, and it determines success or failure of modern enterprises (Thomas, 2003). Many researchers regard intellectual capital as assets that generate a company’s competitive advantage and value (Bontis, 1999, 2001, Edvinsson & Malone, 1997; Roos & Roos, 1997; Stewart, 1997).

Nowadays Organizations are struggling to respond to the changes in the business environments, technology development and demands fluctuation, under such pressure organizations become to focus on innovation and the importance of intellectual capital embedded in employees, organizational structure and processes, interactions with customers and suppliers, as innovation and intellectual capital have been considered the key driver of the economy and competitive advantage (Aija, 2005; Ernst, 2002; Balachandra and friar 1997; Griffins, 1997; Shu-fang Lin, 2004)

2.1.2. Intellectual Capital

Intellectual capital has become increasingly important in the area of knowledge management; organizations create much of their value through soft, intangible and human factors. The quality of people, organizational structure and relationships is what gives the organizations their competitive edge (Taylles, Pike, and Sofian, 2007).

- **Definition**

There is a wide range of definitions of intellectual capital in contemporary literature and no generally accepted definition exist, Van Der Meer-Kooistra and Ziljstra (2001) listed different definitions of intellectual capital one of the definitions is " {IC Intellectual Capital} is intellectual material that has been formalized captured and leveraged to produce a higher-valued assets". This definitions limits intellectual capital to what has been captured and formalized and therefore does not include tacit knowledge. Another definition which Van Der Meer-Kooistra and Ziljstra reflected over is "Intellectual capital is information, knowledge applied to works to create value" another problem concerning the matter is the definition of the concept is both vague and imbricate each other.

Another definitions for instance, definitions such as total of the things, acknowledged by the people in an enterprise and helping it gain sur-petition (Stewart, 1997:24); data value of an enterprise (Walsh, 1991:58); intellectual riches such as data, information, intellectual property and experiences, which can be utilized to gain wealth (Rivette, 2000:168); recorded data of an enterprise and knowledge, skill and experiences of the employees in it as the non-sensorial and invisible properties (Klein, 1998:39) interpret the intellectual capital differently with respect to its scope.

Stewart (1997:72) defines the intellectual capital as the data of an enterprise, which can be utilized to create extra advantages or the total of the things, Marr (2005) explains it as the intellectual material, formalized, owned and activated to produce more valuable property. According to Brooking (1997:364), intellectual capital is the discrimination/gap between the ledger value of an enterprise and the value, which is determined to pay for it.

Hijan, (2011) defines the Intellectual Capital as group of people having knowledge, experience and achievements enabling them to effectively participate in improving the overall organization performance thereby participating in improving the quality of their society and economy

Moreover, there are various definitions of intellectual capital in the literature. Stewart (1997) defined intellectual capital as the total stocks of the collective knowledge, information, technologies, intellectual property rights, experience, organization learning and competence, team communication systems, customer relations, and brands that are able to create values for a firm.

Magrassi (2002) defined the term intellectual capital conventionally refers to the difference in value between tangible assets (physical and financial) and market value

Intellectual capital was also defined as the total stocks of all intangible assets and capabilities in a company, which can create values or competitive advantages (Edvinsson and Malone, 1997; Stewart, 1997). In addition, the disclosure of intellectual capital can be referred to as supplementary information to the financial statements of a company. Therefore, the concept of intellectual capital can bring a revolution to the traditional accounting system (Edvinsson and Malone, 1997; Stewart, 1997).

- **Strategic Perspective of Intellectual Capital**

Intellectual capital can be defined as a group of people who have the knowledge, experience and achievements that enable them to contribute to the performance of their organization; and thus contribute to the development of their communities and indeed the world, and therefore can be considered:

- Part of the human capital of the organization.
- Consists of a group of employees who have the knowledge and organizational capabilities rather the others.
- Aims to produce new ideas or old ideas develop.
- Seeks to expand the market share of the organization.
- Do not concentrate in a certain administrative level without the other.
- Does not require the availability of academic degree.

However, it could be sources are often not drawn to it, but is ignored and fought in some cases. But the case of the non-attention to the intellectual capital it is due to the occupying of organizations and communities in the issue of unemployment as a political, social and economic impact on their practices of the community.

Among occupying organizations and communities on the topic of intellectual capital, we find that there are organizations standing lookout for this category of society, by creating a culture of conflict and destructive competition, there is no place for such innovators.

Based on the previous review for the definitions of 'intellectual capital' concept in different definitions but in the same theoretical framework, which considers the non-material wealth in a broader perspective, determining its scope and components, managing and reporting it. (Zerenler, 2008)

According to the above we can identify the intellectual capital as following:

Intellectual capital is knowledge that can be exploited for some money-making or other useful purpose. The term combines the idea of the intellect or brain-power with the economic concept of capital, the saving of entitled benefits so that they can be invested in producing more goods and services. Intellectual capital can include the skills and knowledge that a company has developed about how to make its goods or services; individual employees or groups of employees whose knowledge is deemed critical to a company's continued success; and its aggregation of documents about processes, customers, research results, and other information that might have value for a competitor that is not common knowledge.

However there is a broad consensus that Intellectual Capital consist of structural capital, relational capital and human capital (Taylles, Pike, and Sofian, 2007). This could be illustrated as the following:

- Part of the organizations capital
- Consist of group or collection of employees owning the knowledge and organizational capabilities rather than others.

- Aiming to create new ideas or developing the old techniques and tools
- Aiming to develop the overall organization activities and market share
- It is non essential to hold academic certificate
- Considered as competitive advantage for the organization could not be imitated or duplicated.

Finally to understand the intellectual capital imbedded in the organization requires members to assess their core competencies; those areas where they can achieve or have achieved best of the world status. The intellectual capital of any organization represents the wealth of ideas and ability to innovate which will determine the future of the organization.
But the question: why have management accountants and financial analysts avoided this area until recently? The most obvious answer is that intellectual capital is not only difficult to measure but also difficult to evaluate.

In the past, accountants have assumed a position which either ignore the problem or write them off as impossible to solve (Luscombe, 1993; Bontis, 2003). It is important to realize that intellectual capital is real and provides value (Andreou; Bontis, 2007).the clear example of Microsoft whose accounting book value is significantly less than its market value based on share price to see that there must be some explanations of this excess market valuation. Arguably this excess is the market valuation of the intellectual capital stock and organizational learning flows of the company (Abdel-Aziz, 2010).

- **Components of Intellectual Capital**

There are different views about determining the component of intellectual capital in the article concerned. Edvinsson (1997) explains that intellectual capital consists of human, structural and customer capitals. However, Bontis (1999) investigates it as three different components: such as human, structural, and relational capitals. Edvinsson (1997)'s categorization of capital is seen in Figure (2.2).

Generally the components forming the intellectual capital may be listed as employee, structural, and customer capital.

1) **Employee Capital (Human Capital):** Human capital is the sum of components such as: employees knowledge, capabilities, experience, attitudes, wisdom, creativities, commitments etc common measures of human capital are number of employees with e.g. master degree and average length of service of employee, Human capital is not owned by the organizations and can therefore be lost when employees leave the company (Chen, Lin and Chang, 2006) however, the innovations produced through the human capital can become intellectual assets which organizations can have ownership of it. So the measuring and managing the process from human capital and relation capital to intellectual assets is very complex (Taylor, 2007).

Employee capital' is different from the more familiar term "human resources", although it has often been used interchangeably with human resource (Edvinsson and Malone, 1999; LeBlanc et al., 2000). "Human resource" implies that workers are not merely cost or expenses to be minimized, but a precious resource that companies must treasure. The term "employee capital" points to the concept that human are not merely resources which companies must treasure, but also are "capital" that can be invested to yield income and other useful outputs over long periods of time (Becker, 1975).

Puntillo (2009) stated that Human Capital consists of the people who make up the organization and who contribute to its success through their skills and motivation. At the base of each organization are the people, or better, the system of knowledge, competences, capabilities, creativity and innovation founded on the knowledge of each person operating in the firm but also the entrepreneurial, organizational, and working qualities which come together to constitute the business institution.

The goal of enterprises is to possess own employee capital on a rate it can be utilized as profitable. For that reason, employee capital has been created and used only if the employees of an enterprise could direct their time and skills mostly to innovative activities (Stewart, 1997:95). In this sense, employee

capital is the total of the experiences, skills and capabilities of executives and employees (Edvinsson and Malone, 1997).

Stewart (1997) considers employee capital as the source of organizational culture and innovation.

Development of human capital can be possible through considering the ideas of employees and listening to their suggestions to develop the business. It is possible to enlist the component of employee capital, which is also considered as the corporate capability of an enterprise, in the sense of benefiting from the acquired knowledge of the people in its body, as mentioned below (Guthrie, 2001):

- Know-How
- Training
- Professional Adequacy
- Studies Aimed at Data Production
- Studies Aimed at Forming Capability/Skill,
- The Joy of Entrepreneurship, Invention, Accepting and Rejecting Skills and Revolutionism.

2) **Structural Capital (organizational capital):** Structural capital is the packaged competence in components such as: manuals, networks, process descriptions, the stock of organizational commitment, reward systems, management systems, organizational capabilities, information technology systems, managerial institution, operation process, database, managerial philosophies, company image, organizational culture, copy rights, patents, trademarks etc. owned by the company (Chen, Lin and Chang, 2006). The structural capital sometimes consist of sub-groups such as process capital and innovation capital as Skandia Model developed by Edvinsson and Malone (Ax, Johansson, & Kullven, 2005) commonly used measurement of structural capital are: number of patents acquired and value of software.

Puntillo (2009) explained that the Organizational capital depends on the capacity of the firm to retain knowledge and to re-use it in the productive process; the infrastructure allows human capital to express its potential. It is represented by the ensemble of operational knowledge and business routines, by internal processes, and by the degree of management cohesion. Organizational capital includes the components linked to innovation, to the processes and the culture of the firm and is subdivided into innovation capital and process capital. The former includes brands, patents, and software and so on, whilst the latter relates to process manuals, database, managerial best practices, IT networks and so on.

3) **Relational Capital:** Relational capital consist of relations with external parts that may provide benefits to the organization, some commonly used measurements are customers satisfaction and market share. Knowledge spillover between firms in the same sector, suppliers, customer and universities are examples of components viewed as relational capital. Universities are an important source of knowledge production which organizations can take part of at low managerial cost vis e.g. publications. A stable link with customers and suppliers generate a tacit knowledge transfer between organizations and together they can find successful path. High mobility of skilled labor inside the area and low mobility outside of that area can also generate knowledge spillover effects that may provide benefits to the organizations inside the giving area. During the 1990s, researches toward innovation activities become popular, especially research toward innovation activities that initiated from knowledge gain due to relational capital. Knowledge spillover, collective learning, etc were put forward as important source of innovation (Capello, 2011).

Relational capital puts forward the value of the relationship of an enterprise with customers, suppliers and the rest of the society for consideration and states the loyalty of mentioned ones to the enterprise (Chwalowski, 1997). In addition to that, any enterprise with a customer has a customer capital. Among all intellectual properties, customer capital has the most outstanding value. Mouritsen et al (2001) define this capital as the

title value of an enterprise, continuing relationships of it with the buyer persons and organizations.

Puntillo (2009) defined the Relational capital as the ensemble of intangible values matured in the relations of the firm with its external environment (clients, distributors, suppliers, investors) and which is expressed, for instance, through esteem and reputation amongst the client base, good union relations, deserved credit with the banks, and the trust and consent which the firm enjoys amongst its employees. In practice, it is the trust assets (customer satisfaction, customer loyalty, brand awareness, business image, etc.) 'stored' in the memory of subjects external to the business, which enable the sharing and reciprocal transfer of knowledge and information relating to the respective activities and needs, and allow the business to carry out its economic function in a more rational way, in terms both of effectiveness and efficacy (Bontis N, 2001).

- **Intellectual Capital Measurement and Reporting**

There are numerous ideas on why organizations should measure their intellectual capital. According to the European Commission (2006), the general idea is that the organizations show how it is creating value by developing and using its intellectual capital. Furthermore, the organizations also present how it uses its knowledge resources. Another important reason for measuring intangible assets is that it captures information, often lacking in accounting measures, about the company's value drivers for long term. (Ittner, 2011)

The European commission (2006) emphasizes two main reasons for intellectual capital reporting. (1) Reporting of intellectual capital provides additional information which can be used to improve the management of the organization as a whole. (2) Reporting of intellectual capital complements the financial statement of the organization and therefore provides a boarder. More truthful image of the company. However, according to Andriessen (2004) the main reasons for reporting and measuring intellectual capital is that there is belief that intangible

resources are not managed properly and that intangible resources needs to be managed in a different way than other resources. He also implies that measuring and follow up on intangible assets gives managers d foundation for making trade-off decisions. Furthermore, he has identified additional reasons for measuring and reporting intangible assets:

1. Focusing attention, "what gets measured gets managed
2. Improving management of intangible resources
3. Creating resources based strategy
4. Monitoring effects from actions.
5. Translating business strategy into action
6. Weighting possible course of action
7. Enhancing the management of the business as a whole

Marr, Gray, & Neely (2003) have identified even more reasons why measuring intellectual capital helps the organization to formulate their strategy. Since the organizations need to allocate resources with the help if e.g. key performance indicators, assist in the diversification and expansion decisions, therefore the underlying assumptions is that by measuring the organization's intellectual capital, the company becomes aware of what kind of resources the organization may be missing and consequently may beneficial and important to acquire.
Measurement of intellectual capital can also be used as a complement and as a basis for compensation to avoid myopia problems. (Basta, Bertilsson, 2009)
Basta, Bertilsson, 2009 explained as well that Behind intellectual capital reporting there is an idea that the traditional financial information only provides with information concerning the past performance of the organization and none of the future potential. There is an implicit notion that the future potential of the organization is in its intellectual capital. As mentioned above, reporting of intellectual capital will create a transparency that allows the managers of the organizations to manage its intangible resources better. By creating transparency it helps management to allocate resources, to monitor development and to create strategy, in summary: it facilitate decision making for the organizations (European Commission, 2006). In addition it is important to know what to focus on and according to Ittner (2008) the choice of components and the methods to measure

these is more influential to performance than the overall choice of category. Moreover, researchers have found that organizations use a diversified basket of measures performs better (Van der Stede, Chow, and Lin, 2006). However, none of these measures will help if the management is sufficient. In order to be successful, measuring and reporting of intellectual capital requires commitment and involvement from the management (Boedker, Guthrie, and Cuganesan, 2005).

Although many good things may come from the implementation of a more profound intellectual capital reporting, it can also cause problems. Sub-optimization, for instance, might always be a problem when measuring regardless what measures it concerns (Merchant & Van der Stede, 2007).

- **Intellectual capital measurements methods:**

The research into measuring the Intangible Assets or the Intellectual Capital of companies has produced a plethora of proposed methods and theories over the last few years. In this latest update of the Paper I provide a brief overview of approaches that I have come across with links to more information. The list is an ever-expanding community effort (Karl-Erik Sveiby, 2010).

- **The Four Approaches for Measuring Intangibles**

According to Luthy (1998) and Williams (2000) they approached measuring tools for intangibles fall into at least four categories of measurement approaches. The categories are an extension of the classifications suggested by:

1. **Direct Intellectual Capital methods (DIC).** Estimate the $-value of intangible assets by identifying its various components. Once these components are identified, they can be directly evaluated, either individually or as an aggregated coefficient.

2. **Market Capitalization Methods (MCM).** Calculate the difference between a company's market capitalization and its stockholders' equity as the value of its intellectual capital or intangible assets.

3. **Return on Assets methods (ROA).** Average pre-tax earnings of a company for a period of time are divided by the average tangible assets of the

company. The result is a company ROA that is then compared with its industry average. The difference is multiplied by the company's average tangible assets to calculate an average annual earning from the Intangibles. Dividing the above-average earnings by the company's average cost of capital or an interest rate, one can derive an estimate of the value of its intangible assets or intellectual capital.

4. **Scorecard Methods (SC).** The various components of intangible assets or intellectual capital are identified and indicators and indices are generated and reported in scorecards or as graphs. SC methods are similar to DIS methods, expect that no estimate is made of the $-value of the Intangible assets. A composite index may or may not be produced.

- **History of Intellectual Capital**

The concept "intellectual capital" was first introduced from a sausage-maker. He is Ralph Stayer, the CEO of a Wisconsin company called Johnsonville Foods. In the fall of 1990, he got into a wide-ranging conversation about what wealth is. Time was, Stayer said, that natural resources–land, minerals, and fisheries were the most important source of national wealth and the most important asset of corporations. Then capital money, capital goods like machines and factories became paramount. Now that was giving way to brainpower, to "intellectual capital." Interesting, he agreed, that this paramount asset isn't tracked by accountants the way land and financial capital are (AL Mafraji, Saleh 2003).

Intellectual Capital became popular in the early and mid 1990s. It is an instructive aside to point out that knowledge management has exploded so rapidly that we can already speak of its predecessor of only a few years ago in the past tense. Intellectual Capital represents the awareness that information is a factor of production, as economists would phrase it, in a category with land, labor, capital and energy“.1 In the early and mid 1990s there was an increasing awareness in the business community that knowledge was an important organizational resource that needed to be nurtured, sustained, and if possible accounted for. (Koenig 2000).

(Koenig, 1998) in his paper “FROM INTELLECTUAL CAPITAL TO KNOWLEDGE MANAGEMENT: WHAT ARE THEY TALKING ABOUT” quoted from Peter Drucker (REF), as he commonly does, put it perhaps most compellingly: We now know that the source of wealth is something, specifically human knowledge. If we apply knowledge to tasks that we obviously know how to do, we call it productivity. If we apply knowledge to tasks that are new and different, we call it innovation. Only knowledge allows us to achieve those two goals. (Talero and Gaudette, 1998).

The interest in the topic of intellectual capital in the Arab world since the mid-nineties, it has represented in the conferences and seminars that dealt with some of the dimensions subject of intellectual capital. Among these conferences and seminars; Seminar on "Human Development industry excellence and leadership" that have been held by the Center for professional expertise of the Department "BMIK" in Cairo in 1981, also held in Manama, "International Conference on Education, training and human resource development", 1998, where was the most prominent dimensions represented in the "ways to develop the human element to keep pace with economic developments, social and technological development.” Also held in Sana'a, the National Conference of reform and development of administrative and financial "under the supervision of the Ministry of Civil Service and Administrative Reform in Yemen, where the conference discussed the issue of intellectual capital and that by emphasizing the need to mainstream policies and programs of training and rehabilitation to improve administrative efficiency.

2.1.3. Innovation

Innovation is a complex concept and even the definition of innovation so far ambiguous, different researcher’s emphasis on different parts of innovation because of different stand points. For instance, Frankel (2000) have brought attention to the importance of quantifying, evaluating, and benchmarking innovation competence and practice, Burgelman (2004) have emphasized on the importance of resource availability in the innovation process. Adams (2006) point out that the literature related to innovation has overlooked the innovation management.

Parsons (1903) defines **Innovation** as the creation of better or more effective products, processes, technologies, or ideas that are accepted by markets, governments, and society. Innovation differs from invention or renovation in being a substantial positive change rather than a modest incremental change (Wikipedia, 2011).

(Shukla, 2009) stated that innovation may be defined as exploiting new ideas leading to the creation of a new product, process or service. It is not just the invention of a new idea that is important, but it is actually "bringing it to market", putting into practice and exploiting it in a manner that leads to new products, services or systems that add value or improve quality. It possibly involves technological transformation and management restructuring. Innovation also means exploiting new technology and employing out-of-the-box thinking to generate new value and to bring about significant changes in society.

Management expert Peter Drucker said that if an established organization, which in this age necessitating innovation, is not able to innovate, it faces decline and extinction.

Innovation needs knowledge; new product or service derive from a process begins with invention, proceeds with product (service) development and result in market introduction. In order for innovation to be commercially successful it needs to combine scientific and technical knowledge with knowledge of the market of working environment. Traditionally innovation analysis has been limited to the organization of the individual firm (human-and structural capital). However lately the notion that the external source of knowledge (relational capital) can help to stimulate innovation has gained acceptance (Feldman, 1994).

Organizational innovation may be new processes or strategies such as implementing a new systems for handling of work processes, turning in new market, renewing processes to realize capital used within the organization e.g. Just in Time-JIT (Hitt, Ireland, & Hoskisson, 2007).

The UK department of trade and industry defined the innovation as the successful exploitation of new ideas (DTI, 1998), innovation in other words is about bringing

new ideas to create new services, product, process or business model. However managing innovation can be see one of the most challenging business matters of organizations, as innovation itself is a complex process (Shu-fang Lin, 2004).

Researches proposed many aspects that could be used to measure innovation capabilities divided in to three categories: 1) Input 2) Output 3) Organization.

1) **Inputs**: of innovation involves resources of innovation activities including people, financial resources and tools (Hipp and Grupp, 2005; Scott and Bruce, 1994). Henard and McFadyen (2008) mentioned that the creativity capability of people is the driving force for a company's innovation. The use of use of tools and techniques such as total quality management always promoting creativity.

2) **Outputs:** Often consist of factors such as sales of new product or services, project efficiency and effectiveness and performance.

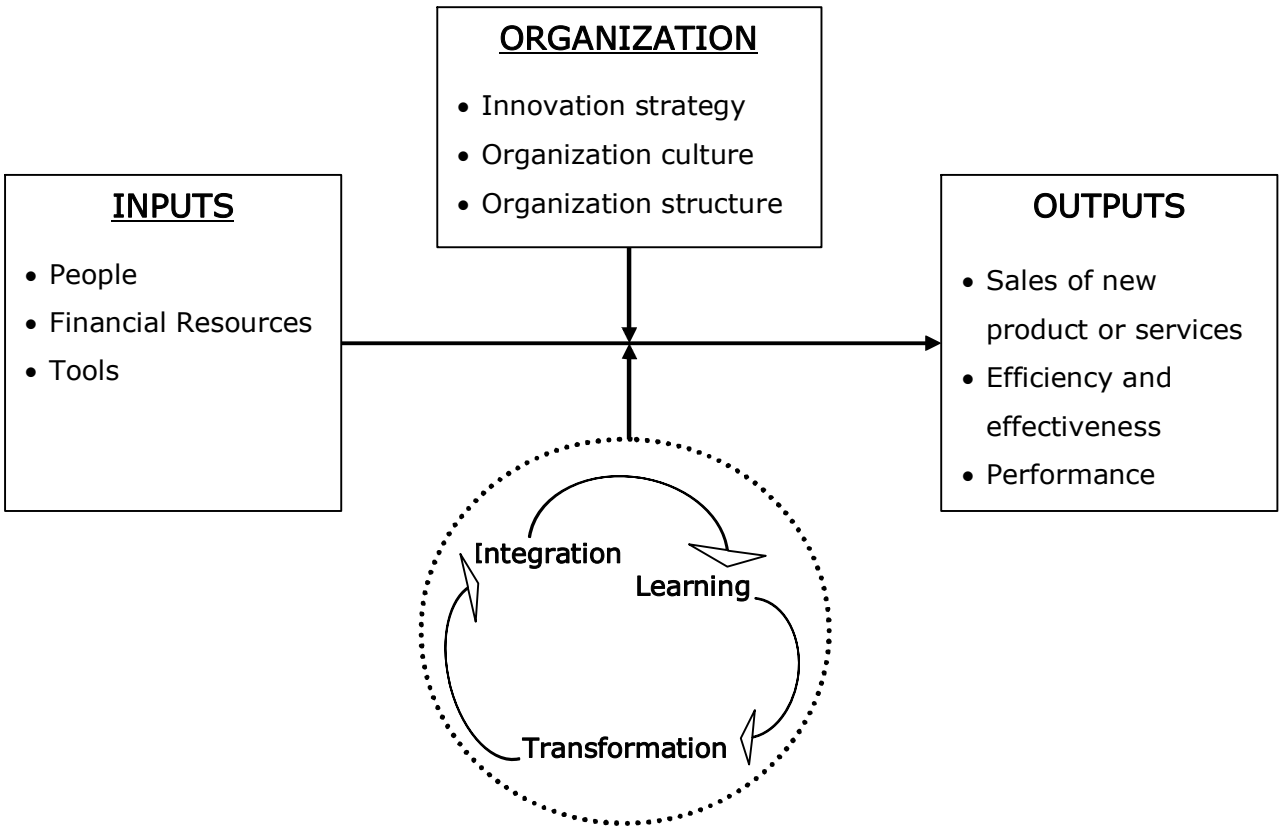
3) **Organization Factors:** concerning the innovation strategy, organizational culture and structure (Richard et al., 2003; Subdbo, 1997).

However, the knowledge is playing an importance role in the innovation process; few researches explained how the intellectual capital linked to innovation. Carneiro (2000) stated that both explicit and tacit knowledge helping organizations to achieve their innovation objectives. As knowledge could be embedded in individuals, organizational routines, management processes or dealing with customers and suppliers. It is important to transfer these knowledge resources into valuing creating process. Subramaniam Youndt (2005) noticed that several studies ***tend to designate the organization's knowledge resources as intellectual capital,*** as intellectual capital can be regarded as a bundle of critical resources utilized for competitive advantage.

Shang (2008) defined three underlining processes for managing intellectual capital: integration, learning and transformation.

1) **Integration** involves integrating internal and external knowledge and resources. Dyer and Singh (1998) claim that the combination of complementary resources is essential to gain competitive advantage which is difficult for competitor to imitate or duplicate.
2) **Learning:** is the process by which repletion and experimentation enables tasks to be performed better and quicker and make new production opportunities to be identifies (Teece, 1997:520). Thus learning enable organizations to create knowledge or build new thinking within the organization culture.
3) **Transformation:** refers to the capability to sense and monitor environment changes and reconfigure its resources and structure to adopt with potential changes (March and Simon, 1993).

Figure (2.1): Theoretical Framework of intellectual capital and innovation.



Reference: Zerenler and Hasiloglu (2008)

- **Innovation Performance.**

The relationship between innovation and geography has become an important theme for research into economic growth. While the links between innovation and growth have long been discussed (Nelson and Winter, 1982), more recently the work of Porter (1990), Scott (1988), Acs (2002) has focused attention on the ways in which localized knowledge and technology spillovers may promote innovation.

In particular, it is argued that face-to-face contact between local firms and organizations remotes knowledge exchanges, which in turn are assumed to facilitate innovation (Storper and Venables, 2004). However, knowledge can also be transferred by the movement of human capital expressed by exchange labors and experts.

Yet, the type of knowledge transfers resulted from mutual exchange of labors and experts (labor mobility) are largely absent from the innovation literature within organizations and firms concept. Little is therefore known about the importance for innovation of human capital mobility.

- **Sources of innovation**

There are several sources of innovation. According to the Peter F. Drucker the general sources of innovations are different changes in industry structure, in market structure, in local and global demographics, in human perception, mood and meaning, in the amount of already available scientific knowledge, etc. Also, internet research, developing of people skills, language development, cultural background, skype, facebook, etc.

MIT economist Eric von Hippel has identified end-user innovation as, by far, the most important and critical in his classic book on the subject, Sources of Innovation. In addition, the famous robotics engineer Joseph F. Engelberger asserts that innovations require only three things: 1. A recognized need, 2. Competent people with relevant technology, and 3. Financial support.

Innovation by businesses is achieved in many ways, with much attention now given to formal research and development (R&D) for "breakthrough innovations." R&D help spur on patents and other scientific innovations that leads to productive growth in such areas as industry, medicine, engineering, and government. (Schumpeter 1934).

- **Barriers to Innovation**

The company culture and leadership are two prominent barriers to innovation. If your company's culture isn't set-up to accept new ideas and creative contributions from its staff then inventions will be unable to break through to the marketplace.

Your organization may be structured so that the development of an innovation is more challenging than at another business. This confining structure can be physical or, alternatively, systemic in terms of the company's culture.

Creativity is the mental and social process—fuelled by conscious or unconscious insight—of generating ideas, concepts, and associations.4 Innovation5 is the successful6 exploitation of new ideas: it is a profitable outcome of the creative process, which involves generating and applying in a specific context products, services, procedures, and processes that are desirable and viable. Naturally, people who create and people who innovate can have different attributes and perspectives. (Serrat, 2009).

- **Why Innovation is important?**

Studies have confirmed that all businesses want to be more innovative. One survey identified that almost 90 per cent of businesses believe that innovation is a priority for them. The conclusion is that the importance of innovation is increasing, and increasing significantly. In the current day innovativeness has become a major factor in influencing strategic planning. It has been acknowledged that innovation leads to wealth creation. Even though efficiency is essential for business success, in the long run, it cannot sustain business growth. (Shukla, 2009).

2.1.4. Intellectual Capital & Innovation Performance Integration

The distinctive competence of a company can generate better managerial effectiveness, operation efficiency, and innovation than its competitors, and can further provide more value and benefit for its customers (Hill and Jones, 2001). On the other hand, the more intellectual capital of a company is, the more distinctive is the unique competence of the company, the better (Edvinsson and Malone, 1997). Moreover, the more the unique competence of the company is, the better innovation performance can be achieved (Garcia and Calantone, 2002). The distinctive competence of the company can be regarded as the result of intellectual

capital within the firm. Hence, when a company has more intellectual capital, it would create better innovation performance. In other words, when a company has more intellectual capital, it would have more innovative competence to further increase its new product development performance.

Namely, there is obviously positive correlation between the existing intellectual capital within the organization and its innovation performance.

Intellectual capital in this study was defined as the total stocks of all kinds of intangible assets, knowledge, capabilities, and relationships, etc, at employee level and organization level, within a company.

This study referred to literatures of the past and classified intellectual capital into employee capital, structural capital, and customer capital (Bontis, 1999). "Employee capital" in this study was defined as the summation of employees' knowledge, skills, capabilities, experience, attitude, wisdom, creativities, and commitment, etc and was embedded in employees, not organizations. A company can increase its innovation performance through its employee capital.

In this research, "structural capital" was defined as the stocks of organizational capabilities, organizational commitment, knowledge management systems, reward systems, information technology systems, databases, managerial institution, operation processes, managerial philosophies, organizational culture, company images, patents, copyrights, and trademarks, etc, within a company; it is embedded in organizations, and thereby cannot be taken away by employees. Structural capital might best be described as the supportive infrastructure of employee capital. Therefore, a company can enhance its innovation performance through its structural capital. "Customer capital" in this study was defined as the stocks of connections, interactions, relationships, linkages, closeness, goodwill, and loyalty between a firm and its customer, downstream clients, strategic partners or other external stakeholders.

A company can gain important information or support about innovation form its suppliers, clients, strategic partners, or other external stakeholders. Therefore, a company can enhance its innovation performance through its customer capital.

If a firm has more intellectual capital, it would have better performance on innovation.

2.1.5. The research model (*Skandia's IC Navigator)*

Origin: The IC Navigator was developed at the Swedish financial services company Skandia by a team led by Leif Edvinsson (Edvinsson & Malone, 1997). It incorporates the presumption that intellectual capital represents the difference between market and book value of the company (Edvinsson & Malone, 1997; Luu, Wykes, Williams, & Weir, 2001).

Despite the weaknesses of Skandia's IC Navigator, most researchers agree that Skandia's considerable efforts to create a taxonomy to measure a company's intangible assets… emboldened others to look beyond traditional assumptions of what creates value for organizations" (Bontis, 2001). Petty concludes, "Edvinsson's work was very much about the process" (Petty & Guthrie, 2000).

Concepts: The total Market Value of a firm is equal to its Financial Capital plus its Intellectual Capital. The components of IC are Human Capital, Structural Capital. Structural Capital can be deconstructed into Organizational Capital and Customer Capital. Organizational Capital can in turn be deconstructed into Innovation Capital and Process Capital (Edvinsson & Malone, 1997).

Model adopted: The research model adopting **Edvinsson model of Intellectual Capital,** Edvinsson and Malone (1997) considered a pioneers in working with intellectual capital. Their views are complementary even though not identical. Their objective was to explain the importance of intellectual capital in organizations including its key features, measures, and management approaches. They view management of intellectual capital as a vital step in building a wealth-enhancing and value-sustaining organization.

Edvinsson model is the best that outlines the direct association between intellectual capital and UNRWA (organization) employee innovation by dividing the higher-order construct of intellectual capital into three components: human capital, structural capital and relational capital as explained in figure (2.2).

1. Human capital: Knowledge that stays with employees Skills, experience, abilities combined human capability for solving business problems. Therefore, human capital can leave an organization when people leave. Human capital also encompasses how effectively an organization uses its people resources as measured by creativity and innovation.

2. Structural capital: Knowledge that stays with the firm Routines, Processes, Culture, Datasets and R&D, buildings, hardware, software, patents, and trademarks. In addition, structural capital includes such things as the organization's image, organization, information system, and proprietary databases. Structural capital is the supportive infrastructure that enables human capital to function.

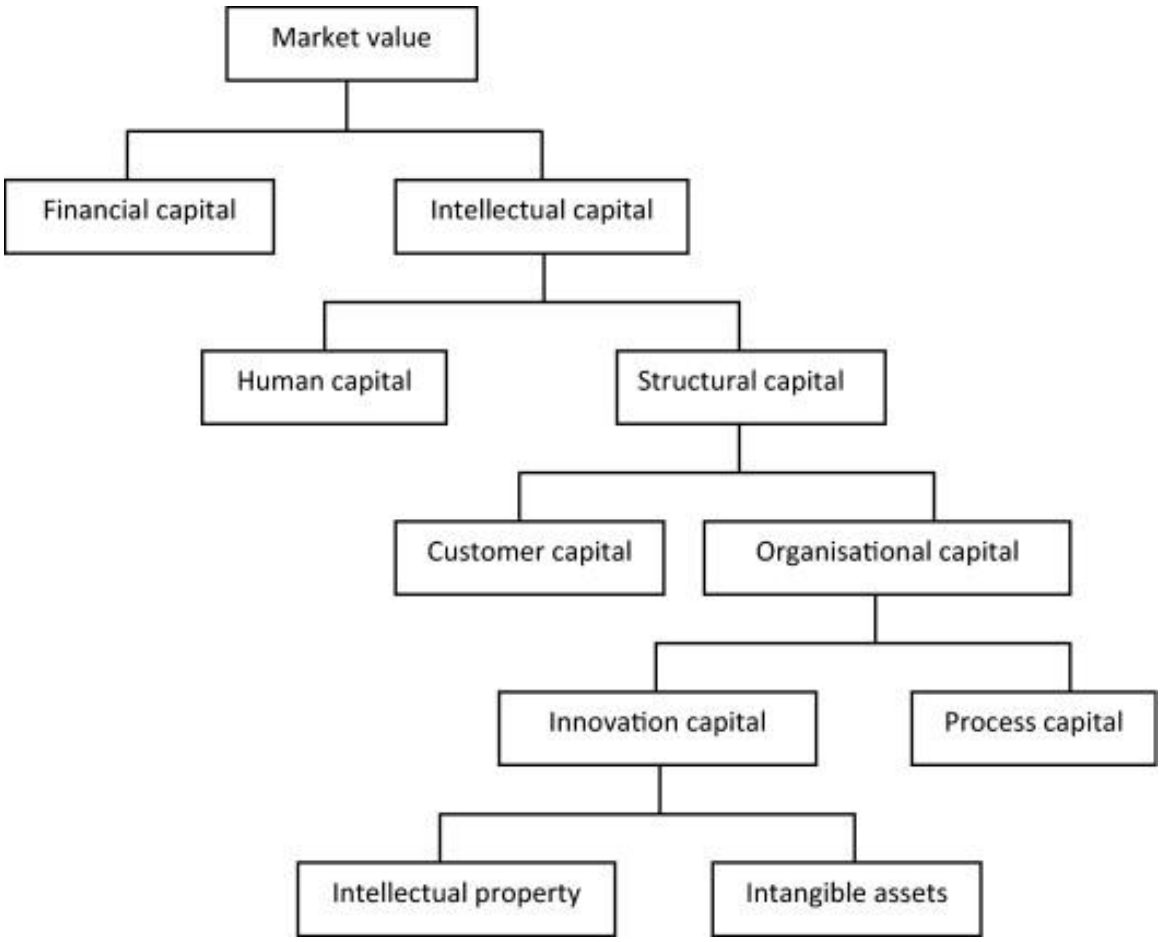
3. Relational (or Network): capital Knowledge derived from networks Resources linked to external relationships Customers, suppliers, partners

Differences between this study and others:

This study differs from the other study in different dimensions as following:

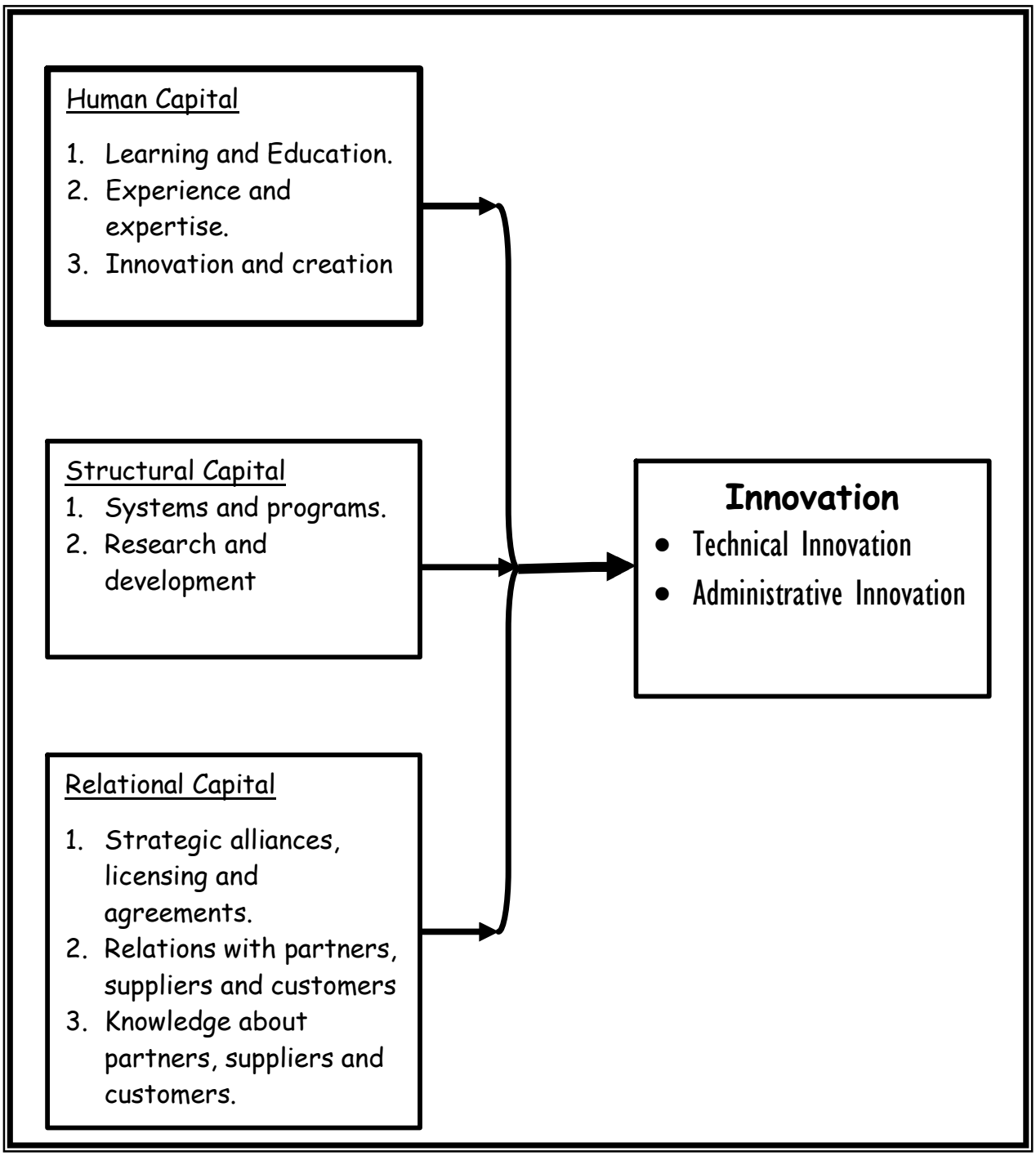
- This study is applied at nonprofit international organization meanwhile other studies are applied at profit organizations.
- Other studies mostly applied at more thane one organizations however this study is applied at one organization only.
- In this study some fields are excluded within the Intellectual capital components according to the study area of work.

Figure (2.2): Edvinsson Intellectual capital model



Source: Edvinsson (1997)

Figure (2.3): Research model



CHAPTER TWO:

Section two

2.2. Previous studies:

Many studies addressed the relationship between innovation and intellectual capital. Most of these researches provided conceptual framework rather than empirical evidences on how intellectual capital is linked to innovation. Few studies discussed the impact of intellectual capital on innovation in clear and direct concept.

Below will revise the main studies and researches approaches the impact of the intellectual capital on the innovation, organizational creativity and performance.

The previous studies divided to two sections: 1) Local and Arab studies, 2) International studies.

2.2.1. Local and Arab studies.

1. **Shaban (2011)**
   Intellectual capital and its role in achieving the competitive advantage of the Palestinian cellular communication company- Jawwal.

This study aimed at examining the variation in the components of intellectual capital (Human, structural and relational capital) in achieving the competitive advantage. The study targeted 120 different administrative posts in Jawwal.

The study found that there is a significant relationship between the availability of intellectual capital requirements in its three components and achieving the competitive advantage of Jawwal, also show that there is a variation in the role of intellectual capital components in achieving the competitive advantage of the company, in which relational capital contribute more than the other two components of intellectual capital in achieving the competitive advantage of the company.

2. **Abdel-Aziz , Jawad and Bontis (2010)**

   Intellectual capital and business performance in the pharmaceutical sector of Jordan

The aim of this study is to empirically test the relationship between intellectual capital due to human capital, structural capital, relational capital variables and business performance within the pharmaceutical sector of Jordan. Used A valid research instrument was utilized to conduct a survey of 132 top- and middle-level managers from all 15 members of the Jordanian Association of Pharmaceutical Manufacturers.

Findings of the study stated that a correlation and path analysis were conducted to ascertain the validity of the measures and models. Statistical support was found for the hypothesized relationships.

The findings offer valuable insights on the generalizability of intellectual capital in a novel research setting.

And Intellectual capital measurement is of primary interest for senior executives of pharmaceutical firms in Jordan.

This research reported is among only a few to investigate the issue of intellectual capital in Egypt and the first to study pharmaceutical firms

3. **Abdul Monem, (2009).**

   The intellectual capital and its effects on the efficiency & value of Jordanian industrial corporations – a case study of (CJC) company.

The study aimed to revise the theoretical concept of intellectual capital, and its practical significance, types, general framework, measurement tools and how to keep it, as well as the importance of its articulation in the financial statements

The research focuses on the concept of intellectual capital divided into its components 1) human capital 2) structural capital and 3) relational capital)and its impact on raising the efficiency and value of the Jordanian industrial corporations, implemented on the leading manufacturer ready made cloths Jordanian company which has franchise (Van Hausen) as case study.

Data gathering in this study conducted though direct Interviews with the mangers and decision makers of the company.

The study findings and conclusions were about there is ambiguity in the understanding of the intellectual capital concept and importance in Jordanian ready-made clothes company and confusion between Intellectual capital and intellectual property concept. With no clear effect of the concept on the efficiency of the company and its market value, as well as the lack of a vision of how to measure and articulate it in the financial statements.

4. **Hamlan (2008).**
   Study and Analysis of Intellectual Capital at the Light of the Recent Developments of Globalization

This study aimed to study the growing concept of intellectual capital; as one of the modern researching fields nowadays, as most common study discussed the theoretical framework of this concept. Thereby definition, components (i.e. human capital, structural capital, relational capital) importance and how to measure it, in the light of current business challenges and competition.

The study indicated that there are high degree motives stimulating organizations to prepare intellectual capital statement. And reveal the role of intangible assets, such as the development of innovation and organizational creativity which will lead to obvious increase the market value of the businesses.

Also, the process of preparing the intellectual capital financial statement; many difficulties available that could delay the preparing the above mentioned statement as the sample respondent acknowledged that.

Concerning the intellectual capital dimensions the researcher found that human capital is one of the most important of its components as well as the knowledge, skill, and capabilities bossed by the employees playing an important role as competitive advantage to participate in improving the innovation capabilities and enhancing the performance.

Finally, this statement will provide a better understanding of stakeholders and that the decadence of this the statement will show the real value of the organizations and provide a comprehensive picture of the elements Wealth

5. **Kazim (2008):**

   Intellectual capital and organizational creativity

The study aimed to identify the dimensions of intellectual capital on the performance of General Electricity company employees, where the targeted group of managers, assistants and heads of departments in the company and after analyzing the results and hypothesis testing to reached the conclusion that the structural capital positively affected in the organizational creativity meanwhile the other components (Human capital and relational capital) have no significant impact.

The recommendations stated that there is a need to give attention to human and relational (customers) capital by building human capacity and expand relations with customers.

6. **Attiya (2008).**

   Intellectual Capital and Knowledge Management: Relation and Effect, A survey for a Sample of Governmental Banks Mangers in Al Dywania

The study aims to identify the effect of intellectual capital in knowledge management for a sample of governmental banks mangers in Al Dywania.

The study focuses on the relationship between intellectual capital and knowledge management, and do the current organizations own intellectual capital which discussed through three variables (human capital, structural capital, relational capital) which enables them to benefit from the banking experiences and apply it.

The study was applied on mangers, heads of departments, customers and personal interviews in a sample of governmental banks.

The findings of the study were as the followings:

- First, the important role of banks in employing the activities service to support the function of virtual knowledge.
- Second, the implied knowledge is found in the employers and the bank's support in this direction.

7. Shabat and Ahmed (2008).

Human Capital and Entrepreneurship

This study aimed to know the human capital at the entrepreneurship organization by applying on one of entrepreneurship organizations at Gaza City "Kazem Abu Shaeban Sons Co.". The study based on the owner's experience, employees skills, training, the demanded characteristics, age and sex of the employees (components of human capital). The research study used the observation three times in the research stages.

The research findings show that the company depends mainly on the expertise's that inherited from generation to generation, especially on the owners experience as he is the father of the company in producing refreshments. Also the company takes on its consideration some of the important of employee characteristics when the company selects any of them, such as flexibility in dealing with customers and adjustment with the work environment. The company also takes on its consideration the ages of its employees that their ages did not exceed the twentieth – just an exception for the women to not be hired because of the circumstances, traditions and social norms of the Gazans. The company trains the employees for extended periods of time to enable them to perform their duties and tasks when they participate in the production process or distribute to the customers.

8. Al Khateeb (2008)

Investment in intellectual capital as determinism for development.

The aim of this research to highlight the investment in human capital as one of the three components of the intellectual capital as the determinism of development in theoretical background using the descriptive methodology.

The study findings stated that Intellectual capital concentrate on the human aspects by their knowledge experience and capabilities

2.2.2. International studies

1. **Besharati1, Kamali and Mahdavi (2012)**

   An Investigation of Relationship between Intellectual Capital and Innovation Capital with Financial Performance and Value of Companies Accepted in Tehran Stock Exchange.

The aim of this paper is to understand the intellectual capital and innovation capital with financial performance and value of Companies Accepted in Tehran Stock Exchange.

The Paper finding indicated that there is no significant relationship between intellectual capital and corporate value, there is a significant relationship between intellectual capital and financial performance of corporations, there is no significant relationship between innovation capital and corporate value, and there is a significant negative relationship between innovation capital and financial performance of corporations.

2. **Amiri, Jandaghi and Ramezan (2011)**

   An investigation to the impact of intellectual capital on organizational innovation.

The study aimed to investigate the impact of intellectual capital on the organizational creativity of the survived organizations. The researchers classified intellectual capital to three variables: human, structural; and relational capital. The organizational innovation divided into two variables: incremental and radical innovation. The research conducted the study through testing six hypotheses, four main departments targeted in the study with 135 questionnaires using correlation test.

The findings were about that there are strong positive relationships among all components of intellectual capital, but the researched department needed to develop their knowledge management and proposed many suggestions to achieve that e.g. to hire knowledge manager or IC department.

3. **Chang (2011).**

   Intellectual Capital and Value Creation-Is Innovation Capital a Missing Link?

The aim of the research is to examine the role of innovation capital in the creation of value for business organizations. Taking an intellectual capital (IC) perspective (i.e. human capital, structural capital, relational capital), the paper considers R&D investment and its impacts on the companies' operating, financial, and market performance.

To investigate the different components of intellectual capital using financial measures, a modified Value Added Intellectual Coefficient (VAICTM) is used for analysis.

The study is conducted on 367 Taiwan semiconductor companies using Pearson correlation and linear multiple regression whereas financial information is generated from a third party database from Taiwan Economic Journal.

The result shows that a company's IC in general has a negative impact on its financial and market performance. However, the association between innovation capital which captured by R&D expenditure efficiency (RDE) and companies' operating, financial and market performance is significant. The results provide a different perspective apart from extant research.

4. **Lee and Florida (2010)**

   Innovation, human capital, and creativity

The aim of this paper is to argue that innovation is a joint product of human capital and creativity. The capacity to innovate is seen to be a function of a region's ability to attract human capital and to provide low barriers to entry for talented and creative people of all backgrounds. Multivariate models are used to test the joint effects of research and development expenditure, human capital, creativity/diversity, and industry mix on regional innovation. New measures of creativity (the *bohemian index*) and diversity (the *gay index*) are introduced.

The paper findings suggested that innovation at the regional level is positively and significantly associated with both human capital and creativity.

5. **Shih, Chen and Morrison (2010).**
   The Impact of Intellectual Capital on Business Performance In Taiwanese Design Industry.

The above study aimed to transform into a knowledge-based economy, there is an increasing need for Taiwan to explore how intellectual capital creates value for companies. This paper presents empirical data in understanding how human, structural and relational capitals influence business performance; specifically in the context of Taiwanese design companies. An Intellectual capital questionnaire was adopted to measure the intellectual capital components, including human capital, structural capital, and relational capital. 87 samples are collected and the data are analyzed by Partial Least Squares (PLS) method.

The empirical result of PLS shows that intellectual capital does have significant influence on Taiwanese design companies' performance. However, due to Taiwanese design companies' organizational structure, structural capital does not support a positive influence on their performance. Also, it is indicated that 'number of employees in the company' and the 'company age' influence the structural capital on business performance.

It is possible so for design industries as well, as its intangible assets are far more important than its tangible assets. 2008 Taiwan has so far obtained at least 165 international design awards, which is an improvement from the 133 awards in 2007, and 148 in 2006 (Yang, 2008). This is the evidence that Taiwanese design industry has the potential to contribute to the nation's economy. It was the first time for design industry to be officially considered in "Challenge 2008 – National Development Plan", in which design industry development is included as sub-plan. Also, Taiwan Design Center (TDC), a national design center, was founded to foster the development of Taiwanese design industry.

6. **Shari, Shang and Lin (2009)**

A model of intellectual capital management capability in the dynamic business environment

This paper aimed to discuss the way in which intellectual capital (IC) can be managed to assist organization to overcome dynamic challenges. An intellectual capital management capability (ICMC) model is developed which permits the management of an organization to realize the potential of IC by measuring the maturity level of its IC through its components whom are human capital, structural capital and relational capital.

The model is consistent with dynamic capability theory, which suggests leveraging internal and external resources in response to environment changes to sustain competitive advantage. By utilizing in-depth interviews with 25 chief executive officers from firms possessing high IC, this study seeks to inform the readers of the preliminary work and the way in which the maturity level of ICMC can be measured through the development and deployment of dynamic capabilities. The verification and enhancement of the proposed model has also clarified our understanding on the evolutionary path of management capabilities of IC.

7. **Puntillo (2009)**

Intellectual Capital and business performance. Evidence from Italian banking industry

This study aimed to investigate empirically the relation between the value creation efficiency and firms' market valuation and financial performance, by using data drawn from 21 banks enlisted in the Milan Stock Exchange, Italy.

The results do not show any strong association between the studied variable, and the different measures of the firm's performance.

The interpretation of the results of this empirical study is reported in the following observations.

The correlation between IC value and business performance measured by profitability indicators is low for reasons linked to the intrinsic limitations of the profitability indicators themselves.

8. **Yih Wu, Chang and Chen (2008)**
   Promoting Innovation through the Accumulation of Intellectual Capital, Social Capital, and Entrepreneurial Orientation

This study aimed to explore how a firm's operational mode can reinforce the advantages of intellectual capital on innovation. Specifically, the main purpose of this study is to develop a comprehensive research model to integrate the interrelationships among social capital, entrepreneurial orientation, intellectual capital (i.e. human capital, structural capital, relational capital), and innovation. In addition to identifying the influences of intellectual capital on innovation, this study focuses in particular on the mediating effect of intellectual capital and the moderating effects of social capital and entrepreneurial orientation on innovation, which have largely been neglected in previous literature.

The results support the mediating role of intellectual capital and the moderating roles of entrepreneurial orientation and social capital on innovation. Specifically, firms that have higher levels of social capital and entrepreneurial orientation tend to amplify the effects of intellectual capital on innovation.

9. **Zerenler, Hasiloglu and Sezgin (2008).**
   Intellectual Capital and Innovation Performance, empirical Evidence in the Turkish Automotive Supplier.

The aim of this study was to investigate the influence of intellectual capital of Turkish automotive supplier industry upon their innovation performance. This study showed that three types of intellectual capital –employee capital, structural capital, and customer capital– had a significantly positive relationship with innovation performance.

Moreover, the results also indicated that the higher the growth rate of an industry, the stronger were the positive relationships between three types of intellectual capital and innovation performance. Besides, customer capital was the greatest among these three types of intellectual capital in Turkish automotive supplier industry, employee capital was the next, and structural capital was the least.

This shows two points; first, Turkish automotive supplier industry emphasized the interactive "relations" with their suppliers, clients, and partners; second, it was imperative for Turkish manufacturing enterprises to develop their structural capital to increase their innovation performance.

10. Subramaniam and Youndt (2005)

The influence of intellectual capital on the types of innovative capabilities

This study aimed at examining aspects of intellectual capital influenced various innovative capabilities in organizations. In a longitudinal, multiple-informant study of 93 organizations.

The study findings revealed that that human, organizational, and social capital and their interrelationships selectively influenced incremental and radical innovative capabilities. As anticipated, organizational capital positively influenced incremental innovative capability, while human capital interacted with social capital to positively influence radical innovative capability. Counter to our expectations, however, human capital by itself was negatively associated with radical innovative capability. Interestingly, social capital played a significant role in both types of innovation, as it positively influenced incremental and radical innovative capabilities.

11. Lybaert, Tiri and Vandemaele (2004)

In search for a link between innovation, intellectual capital and company performance

The paper aimed at exploring the relationship between innovation/intellectual capital and the economic performance of firms in Flanders. For this purpose, use is made of a longitudinal firm-level dataset, built up by matching data from two different statistical sources: the Flemish CIS-3 (concerning innovation activities during 1998–2000) and a set of economic performance indicators drawn from the Belgian Belfirst (relating to the period 1998–2004).

The paper findings suggested that it is very difficult to make general conclusions on the relation between innovation and growth. In the sample, results depend on the definition of firm growth as a performance measure as well as on the method used to analyze the data.

12. Dakhil and Clercq (2004)

Human capital, social capital, and innovation: a multi-country

The study aiming at examines the effects of two forms of capital, i.e. human capital and social capital, on innovation at the country level. The researcher used secondary data from the World Development Report on a country's overall human development to test for a relationship between human capital and innovation. Used previous conceptualizations of social capital as comprising trust, associational activity, and norms of civic behavior to test for relationships between these indicators of social capital and innovation using data from the World Values Survey. Unlike most previous studies that examined human and social capital within a given country, also develop and empirically test a theoretically grounded model that relates human and social capital to innovation at the societal level across 59 different countries, thus providing a more global view of the role of these two forms of capital in generating value.

The study found strong support for the positive relationship between human capital and innovation and partial support for the positive effect of trust and associational activity on innovation. However, contrary to prediction, also find a negative relationship between norms of civic behavior and one of innovation measures.

13. Lin, (2004).

Intellectual capital and Innovation – Yuanpei University, department of business administration.

This study aimed to provide empirical evidences on how the organization enhances its innovation capabilities through management of intellectual capital within its components (human capital, structural capital, relational capital). The research based on single case study, data gathered from annual reports and articles were supplementary interviews conducted.

The overall findings in this study provide strong support for the premise that managing intellectual capital enhances innovation that intellectual capital to positively influence innovation capability.

The study stated that managing intellectual capital is crucial to innovation. The frequent process of managing intellectual capital, learning and transformation enhances the capability of innovation.

14. Nakahara (2001)

Innovation management using intellectual capital

This is a theoretical study aimed to explore the importance of intellectual capital which is knowledge built up over the course of the corporation's business and serves as a vital resource for moving to a more effective and efficient business model. The researcher explained that in a borderless economy, corporations must search for new solutions to overcome problems that have an immediate impact on their competitiveness and a long-term impact on their survival. These solutions are usually found in developing innovations in strategies, products, processes, and marketing. However, for these innovations to come to fruition, corporations must be able to harness the intellectual capital within them. Therefore, it is important for industrial practitioners to think about the concept and purpose of intellectual capital. R&D, which drives the creation of new industries and businesses, is the key focus for the future of the company. The conduct of this vital task is enabled by intellectual capital that is constructed through continuous accumulation and updating of knowledge. A computer-aided management technology, and Score Method, a management system of individual projects in R&D, are applied for strategy planning and R&D management. These technologies position a company for the future advanced information society, in which global networks will take on greater importance, and where intellectual capital will also be of global proportions. The survival of an organization will depend largely on how successfully it can use the global network.

In conclusion, it is very important to shift the corporate philosophy from tracing the past achievement to focusing on the future strategy making full use of intellectual capital.

15. Bontis, and Richardson (2000).

Intellectual capital and business performance in Malaysian industries.

The aim of this empirical study is to investigate the three elements of intellectual capital, i.e. human capital, structural capital, and customer capital, and their inter-relationships within two industry sectors in Malaysia.

The main conclusions from this particular study are that: human capital is important regardless of industry type; human capital has a greater influence on how a business should be structured in non-service industries compared to service industries; customer capital has a significant influence over structural capital irrespective of industry; and finally, the development of structural capital has a positive relationship with business performance regardless of industry.
The final specified models in this study show a robust explanation of business performance variance within the Malaysian context which bodes well for future research in alternative contexts

2.2.3. Comments on previous studies

From the above discussion and presentation obviously appeared that the intellectual capital considered on of the most important topics of human resource management even in writing or researches. Which reinforced by the special periodical journal "Journal of Intellectual Capital" issued since 2001, discussing different topics, researches and papers related to this topic.

Intellectual capital in the various presentations considered one of strategies employed by different governments and systems. Due to the concentration on investments in the elites instead of neglect them to participate in the economic development and solving the unemployment problem.

Regarding to the above discussion where to UNRWA the 60 year age adopted at the foundation and operation of the total qualified and competent individuals where they are looking for excellence in the performance of their employees and their output has been obviously appeared in the recruitment of experiences both in

the administrative or professional staff. As well as the administrative system and its ongoing plans to develop within the continuous development of staff, plans and processes.

So this research was conducted to identify the impact of intellectual capital in the innovation of staff members in international non-profit organization UNRWA, Gaza field office.

However this is considered the first Intellectual capital study conducted and applied on non non-profit and non-governmental international organizations especially in Palestine which will explain the importance of taking care of Intellectual capital in such organization.

This study approached the intellectual capital from three components: 1) Human capital, 2) Structural Capital and 3) Relational Capital. However most of the previous studies approached the same components but some of them approached only the Human capital which was obvious in the study title of Dakhil and Clercq (2004) who approached also the social capital which is differs from this study.

Other studies approached the Innovation in different aspects especially in Amiri, Jandaghi and Ramezan (2011) who approached it as incremental and radical innovation, however this study approached Technical and administrative innovation which is agree with Zerenler, Hasiloglu and Sezgin (2008) who used the same innovation aspects.

CHAPTER TWO:

Section three

2.3. United Nations Relief and Works Agency for Palestine refugees-UNRWA, Gaza Field Office (GFO)

2.3.1. About UNRWA

UNRWA (the United Nations Relief and Works Agency for Palestine Refugees in the Near East) provides assistance, protection and advocacy for some five million registered Palestine refugees in Jordan, Lebanon, Syria and the occupied Palestinian territory, pending a solution to their plight. Which is funded almost entirely by voluntary contributions from UN member states. (UNRWA, 2010)

The Agency's services encompass education, health care, relief, camp infrastructure and improvement, community support, microfinance and emergency response, including in times of armed conflict.(UNRWA, 2012)

2.3.2. Establishment

Immediately after the 1948 Israeli occupation to the Palestinian territories, emergency assistance was provided by international organizations such as the International Committee of the Red Cross, League of Red Cross Societies and the American Friends Service Committee.

The United Nations established the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) under UN General Assembly Resolution 302 (IV), of 8 December 1949, as a subsidiary organ of the United Nations. The Agency inherited the assets of the UNRPR and took over the ICRC's refugee registration records. (UNRWA brochure, 2011)

2.3.3. UNRWA's mandate

The UNRWA (2012) stated that its original mandate is:

- "carry out direct relief and works programs in collaboration with local governments"
- "consult with the Near Eastern governments concerning measures to be taken preparatory to the time when international assistance for relief and works projects is no longer available"
- Plan for the time when relief was no longer needed.

2.3.4. UNRWA services

The UNRWA (2012) presented its establishment; the Agency has delivered its services both in times of relative calm in the Middle East, and in times of hostilities.

UNRWA's work exemplifies an international commitment to the human development of Palestine refugees, helping them:

- Acquire knowledge and skills
- Lead long and healthy lives
- Achieve decent standards of living
- Enjoy human rights to the fullest possible extent.

UNRWA is unique in terms of its long-standing commitment to one group of refugees, and its contributions to the welfare and human development of four generations of Palestine refugees. Originally envisaged as a temporary organization, the Agency has gradually adjusted its programmes to meet the changing needs of the refugees.

2.3.5. UNRWA working area

UNRWA provides education, health, relief and social services to eligible refugees among the 5 million registered Palestine refugees in its five fields of operation (UNRWA, 2012):

1. Jordan
2. Lebanon
3. Gaza Strip
4. the Syrian Arab Republic
5. The West Bank, including East Jerusalem.

2.3.6. Who are Palestine refugees?

Under UNRWA's operational definition, Palestine refugees are people whose normal place of residence was Palestine between June 1946 and May 1948, who lost both their homes and means of livelihood as a result of the 1948 Arab-Israeli conflict. (UNRWA, 2012)

2.3.7. UNRWA Gaza field office –GFO

The Gaza Strip, a narrow piece of land on the Mediterranean coast, is home to a population of more than 1.8 million. Gaza covers an area of just 360 square kilometers and is considered one of the most densely populated areas in the world. (UNRWA appeal, 2010)

An estimated 1.1 million people, or three-quarters of the entire population, are Palestine refugees registered with UNRWA. About half a million refugees live in Gaza's eight refugee camps. (UNRWA, 2012)

2.3.8. GFO Programs

UNRWA (2010) annual report demonstrated that UNRWA's human development and humanitarian services encompass primary and vocational education, primary health care, social safety-net, community support, infrastructure and camp improvement, microfinance and emergency response, including in situations of armed conflict. The services are delivered within five programs:

1. Education

According to the UNRWA education 2011 annual report illustrated that UNRWA operates one of the largest school systems in the Middle East and has been the main provider of basic education to Palestine refugees for 60 years.

Education is UNRWA's largest program, accounting for more than half of the Agency's regular budget.

The Agency operates one of the largest school systems in the Middle East, with nearly 700 schools, and has been the main provider of free-of-charge basic education to Palestine refugees for over sixty years.

In 2010/2011, across its five fields of operation, UNRWA's education program comprised:

- 700 schools
- 22,904 educational staff
- 482,795 enrolled pupils
- 49.9 percent female pupils
- 10 vocational training centers
- 6,209 training places
- Three educational science faculties
- 1,415 teachers in training
- 1,700 student teachers

2. Health

More than 4,000 UNRWA health workers provide one of the most cost-effective and efficient health delivery systems in the Middle East. (UNRWA, 2012)

3. Relief and social services

UNRWA provides basic food supplies and cash subsidies, as well as emergency cash grants and adequate shelter to the most vulnerable refugees. (UNRWA, 2012)

4. Microfinance

UNRWA's microfinance department promotes economic development, and alleviates poverty among Palestine refugees and other poor and marginalized groups. (MMP 2011 annual report)

5. Infrastructure and camp improvement

The infrastructure and camp improvement program improves the physical and social environment of UNRWA refugee camps. (UNRWA, 2012)

6. Emergency programs

Over the past 60 years, UNRWA has taken action to mitigate the effects of emergencies on refugees' lives. (Emergency appeal, 2011)

2.3.9. Gaza Field Office structure and Labour force

Gaza field office considered the largest field of UNRWA services meanwhile the largest number of workers which is reflected in their grades and posts.

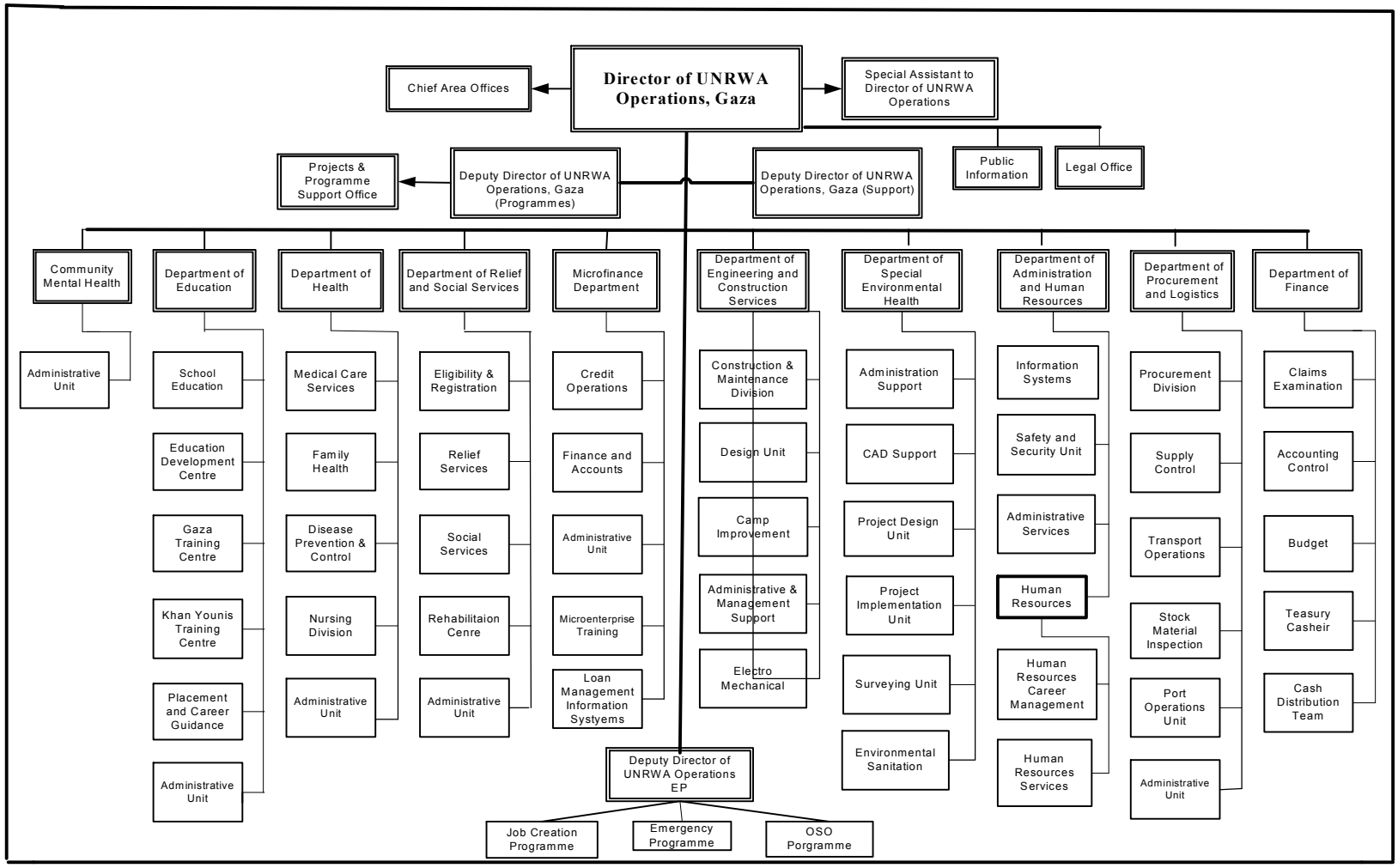
According to the UNRWA annual report 2011, the below table shows the classification of UNRWA labour force in GFO and the distribution of senior staff from Grade 14 to grade 20 among the departments whom will be the targeted group (population of the study)

Table 2-1 Description of UNRWA labour force distribution

	Department	Total Number of Employees	Employees Grade lower than 14	Employees Grade from 14 to 20
1	Education	**9192**	**8998**	**194**
2	Health	**857**	**698**	**159**
3	Relief and social services	**206**	**199**	**7**
4	Engineering, Infrastructure and camp improvement	**596**	**578**	**18**
5	Micro-finance	**50**	**39**	**11**
6	Emergency	**271**	**259**	**12**
7	Procurement and Logistics Department-PLD	**240**	**233**	**7**
8	Administration and finance	**261**	**245**	**16**
9	Office of DUO-G	**44**	**26**	**18**
Total		**11717**	**11275**	**442**

Source: UNRWA Human resource and development department (2011)

Figure (2.4): UNRWA organizational chart



Source: UNRWA Human resource and development department (2011)

Chapter 3

3. Research Methodology

This chapter aims to describe the methodology and procedures were conducted in the research including data source, population, data collection tools, questionnaire design and distribution, response rate, validity and reliability of the questionnaire.

3.1. Research method

The analytical descriptive method followed in this study aiming at presenting quantitative and qualitative measurement and analysis thereby it is the common technique used in business and social studies.

The research data was collected to carry out the study and answer the research questions while as primary and secondary data were used to enrich and conduct this study (details illustrated below at point 3.2)

3.2. Period of study

The study was carried out during the period from the beginning of August, 2011 to June 2012. Data collection was carried out during May 2012.

3.3. Source of data

The study data presented in the content extracted from two source, Primary and secondary sources as following:

3.3.1. Primary

This study used two primary sources of data as following:

1. Interview: five interviews were conducted with Experts and UNRWA key persons to identify criteria of the study population selection, mainly the intellectual capital of UNRWA. The interviews helped in developing the questionnaire.

2. The study tested hypotheses with a structured questionnaire survey that was conducted in UNRWA Gaza field office (GFO). The questionnaire is especially designed as data collection tool to study the relationship between the IC and innovation of UNRWA according to the adopted model-(Skandia Navigator™, Edvinsson and Malone, 1997. consisting the following sections:

.

- Section one: considers the Human Capital components, Learning and education, Experience and expertise and innovation management (24 questions)
- Section two: Considers the Structural Capital components, Systems & programs and Research & Development. (15 questions)
- Section three: Considers Relational Capital components, Strategic alliances, licensing & agreements, Customer & Supplier relations and Customer Knowledge. (20 questions)
- Section four: Considers the UNRWA rank compared to the professional local environment. (6 questions)
- Section five: Considers the personal characteristics of the targeted group (3 questions)

The respondents were asked to indicate their agreement with any particular item on a 10-point scale ranging from strongly disagree (1) to strongly agree (10).

3.3.2. Secondary

To demonstrate the theoretical literature of the subject, the researcher used books, periodicals, published papers articles, UNRWA's reports and statistics related to the study title. In addition, internet, web sites and electronic links.

3.4. Study population

For the sake of accuracy; purposive sample is used in the questionnaire distribution among the study population which is 163 employees.

The total number of UNRWA's-GFO employees is **11717**. UNRWA grading system classify its employees to 20 grades beginning from grade one the lowest and ending with grade twenty the highest.

The study population covered the employees' grades from 14 to 20 according the criteria followed by the researcher defining the employees whom could be considered as intellectual capital. The criteria were established by the interview conducted by the researchers with five experts (three internal –UNRWA and two outside the UNRWA) Appendix (5) explaining the initial interview concept paper.
(See detailed population distributions in table (3.1)

3.4.1. Specifications of the target group

The targeted group consists of all senior staff members from grades 14 to 20 whom exactly 442 according to UNRWA statistics on December 2012, which represent around 5.4% from the total staff members.

The selection of the above targeted group within grades from 14 to 20 for the study is done according to the results and recommendations of the interview held with five decision maker candidates from the UNRW GFO and two experts in related fields outside the UNRWA.

Duo to the results the recommended all the interviewees unanimous agreed to exclude the school principals and medical physicians (Doctors) from the targeted group for the reasons of their actual duties are executive without any flexibility and innovative thinking in the working processes and limited authorities with nil influence in the decision making process as well as they explained that their previous grades of school principals was 11 but according to certain circumstances the former Director raised their grade to improve the education level and performance which don't reflect their participation in the decision making process.
After excluding the school principals (177) and physicians (102), the total number of the study purposive sample will be (163).

Table 3-1: UNRWA employees' distribution according to the local grades scale

	Department	Figure -1	Figure -2	Figure -3	Figure -4	Comments
		Total Number of Employees	Employees Grade lower than 14	Employees Grade from 14 to 20	Study population	
1	Education	**9192**	**8998**	**194**	**17**	Figure (3)Including the (177) school principals
2	Health	**857**	**698**	**159**	**57**	Figure (3)Including (102) Physicians
3	Relief and social services	**206**	**199**	**7**	**7**	
4	Engineering, Infrastructure and camp improvement	**596**	**578**	**18**	**18**	
5	Micro-finance	**50**	**39**	**11**	**11**	
6	Emergency	**271**	**259**	**12**	**12**	
7	Procurement and Logistics Department-PLD	**240**	**233**	**7**	**7**	
8	Administration and finance	**261**	**245**	**16**	**16**	
9	Office of DUO-G	**44**	**26**	**18**	**18**	
Total		**11717**	**11275**	**442**	**163**	

Source: UNRWA Human resource and development department (2011)

3.5. Response rate

Out of the 163 sample 146 staff members were accessible and received the questionnaires were distributed, 123 questionnaires were returned with response rate 84.2%, and 19 questionnaires excluded from the received items for technical problems and considered invalid. However 104 questionnaires were valid for the data analysis.

	Description	Number	Percentage
1	Population	442	
2	Sample	163	36.8%
3	Accessible candidate	146	89.5%
4	Responded Questionnaires	123	84.2%
5	Invalid Questionnaires	19	15.4%
6	valid Questionnaires	103	84.5%

3.6. Pilot Study

The measurement has been applied on 30 employees who were randomly selected according to same study population criteria by utilizing the random sample method aiming at checking the validity and reliability of the questionnaire. The pilot sample has been distributed on the 24th of April 2012 and was collected the next day.

3.7. Validity and reliability

3.7.1. Validity of referees

The initial questionnaire has been given to a five of referees, three of them holding PhD certificates and two are experts in designing questionnaires to judge its validity according to its content, the clearness of its items meaning, appropriateness to avoid any misunderstanding and to assure its linkage with the study objectives and hypothesis.

3.7.2. Validity of the questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include criterion-related validity and structure validity.

- **Criterion Related Validity**

Internal consistency of the questionnaire is measured by a scouting sample, which consisted of 30 questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole filed.

- **Structure Validity of the Questionnaire**

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of liker scale.

- **Reliability of the Research**

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring. The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the

stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient.

- **Cronbach's Coefficient Alpha**

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

3.7.3. Validity

Table (3.2) clarifies the correlation coefficient for each item of the **Learning and education** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-2 Correlation coefficient of each item of Learning and education and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	The competence of UNRWA's employees as a whole is equal to the most ideal level (matching with their work requirements and responsibilities).	0.809	0.000*
2.	The UNRWA gets the most out of its employees when they cooperate with one another in team tasks.	0.592	0.000*
3.	UNRWA's employees undergo continuous training programs every year.	0.815	0.000*
4.	UNRWA's employees continuously learn from others (colleagues and outsiders).	0.830	0.000*
5.	The ratio of educated personnel is on average compared with industry (no. of Phf). Master and Bachelor degrees compared with what should her.	0.688	0.000*
6.	UNRWA devotes a lot of time and effort to update and develop employee's knowledge and skills.	0.800	0.000*
7.	UNRWA's services have been continually improving over the past few years.	0.774	0.000*
8.	Employees learning and education affect UNRWA's productivity.	0.712	0.000*

* Correlation is significant at the 0.05 level

Table (3.3) clarifies the correlation coefficient for each item of the **Experience and expertise** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-3 Correlation coefficient of each item of Experience and expertise and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	UNRWA's employees are experts in their respective areas	0.796	0.000*
2.	UNRWA's employees consistently perform at their best.	0.855	0.000*
3.	UNRWA's employees have worked for many years in the firm (employee turnover is very low).	0.531	0.001*
4.	The UNRWA prides itself on being efficient.	0.811	0.000*
5.	The staff is highly professional.	0.863	0.000*
6.	The UNRWA has the lowest costs per transaction of any in the comparison with other international organizations	0.781	0.000*
7.	Employees' experience and expertise affect UNRWA's productivity.	0.805	0.000*

* Correlation is significant at the 0.05 level

Table (3.4) clarifies the correlation coefficient for each item of the **Innovation and creation** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-4 Correlation coefficient of each item of Innovation and creation and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	UNRWA's employees are considered creative and bright compared with other international organizations	0.627	0.000*
2.	UNRWA's employees are keen to voice their opinions in group discussions.	0.727	0.000*
3.	UNRWA's employees usually come up with new ideas.	0.884	0.001*
4.	Large numbers of new ideas are launched compared with competitors.	0.902	0.000*
5.	UNRWA's employees are continuously	0.872	0.000*

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
	encouraged to bring new knowledge and ideas to the business and share their knowledge with their colleagues.		
6.	UNRWA systems support staff innovation	0.871	0.000*
7.	UNRWA's employees are satisfied with their UNRWA's innovation policies and programs.	0.916	0.000*
8.	UNRWA's employees are highly motivated and committed to share new great ideas within the UNRWA as it should be.	0.917	0.000*
9.	Employees' innovation and creation affect UNRWA's value in the relevant market	0.876	0.000*

* Correlation is significant at the 0.05 level

Table (3.5) clarifies the correlation coefficient for each item of the Systems and **programs** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-5 Correlation coefficient of each item of Systems and programs and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	The UNRWA has succession training programs for each and every post position (major positions).	0.756	0.000*
2.	The UNRWA's culture and atmosphere are supportive and comfortable.	0.939	0.000*
3.	The UNRWA's recruitment programs are comprehensive and dedicated to hiring the best candidates available.	0.836	0.000*
4.	The UNRWA has a well developed reward system related to performance.	0.898	0.000*
5.	The UNRWA supports its systems according to the international standards.	0.905	0.000*
6.	Staff have sufficient influence over decisions make within the UNRWA	0.773	0.000*
7.	The UNRWA is not a bureaucratic nightmare.	0.901	0.000*
8.	UNRWA's systems and programs affect UNRWA's value in the relevant market	0.844	0.000*

* Correlation is significant at the 0.05 level

Table (3.6) clarifies the correlation coefficient for each item of the Research **& Development (R & D)** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-6 Correlation coefficient of each item of Research & Development (R&D) and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	The UNRWA is considered a research leader	0.858	0.000*
2.	UNRWA continuously develops work processes.	0.801	0.000*
3.	The UNRWA continuously develops and re-organizes itself based on R & D i.e. Structure and responsibilities.	0.909	0.000*
4.	The systems and procedures of the UNRWA support innovation.	0.934	0.000*
5.	The UNRWA determines appropriate and adequate budget for R& D.	0.785	0.000*
6.	The UNRWA's board of management highly trust and support the R&D department.	0.807	0.000*
7.	UNRWA's R&D affects UNRWA's value in the relevant market	0.835	0.000*

* Correlation is significant at the 0.05 level

Table (3.7) clarifies the correlation coefficient for each item of the **Strategic alliances, licensing and agreements** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-7 Correlation coefficient of each item of Strategic alliances, licensing and agreements and the total field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	The UNRWA is currently working on joint projects with many other organizations.	0.871	0.000*
2.	The UNRWA has diverse distribution channels.	0.870	0.000*
3.	High ratio of UNRWA's business is done with strategic alliances.	0.930	0.000*
4.	People from outside the UNRWA are consulted when decisions are made within the UNRWA.	0.853	0.000*
5.	UNRWA is able to add value through its partners.	0.923	0.000*

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
6.	UNRWA prides itself on being partnership oriented.	0.842	0.000*
7.	UNRWA's strategic alliances affect its value in the relevant market	0.685	0.000*

* Correlation is significant at the 0.05 level

Table (3.8) clarifies the correlation coefficient for each item of the **Customer and Supplier relations** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-8 Correlation coefficient of each item of Customer and Supplier relations and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	A poll of UNRWA's customers shows them to be loyal to the UNRWA and would indicate that they are generally satisfied.	0.680	0.000*
2.	The UNRWA devotes considerable time to select suppliers.	0.853	0.000*
3.	The UNRWA maintains a long-standing relationship with suppliers.	0.730	0.000*
4.	The UNRWA has greatly reduced the time it takes to resolve a customer's problem.	0.897	0.000*
5.	The UNRWA feels confident that their customers will continue to do business with it.	0.872	0.000*
6.	UNRWA's relationship with customer and supplier affects UNRWA's value in the relevant market	0.832	0.000*

* Correlation is significant at the 0.05 level

Table (3.9) clarifies the correlation coefficient for each item of the **Customer Knowledge** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for

Table 3-9 Correlation coefficient of each item of Customer Knowledge and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	It is important for the UNRWA to share knowledge with its partners.	0.763	0.000*
2.	The UNRWA gets as much feedback out of customers as it possibly can under different circumstances.	0.804	0.000*
3.	UNRWA continuously got data about partners to improve its operations	0.823	0.000*
4.	Data about customers are continuously updated.	0.795	0.000*
5.	The UNRWA has relatively complete data about the suppliers.	0.840	0.000*
6.	The UNRWA continually meets with target groups to find out what they want from it.	0.911	0.000*
7.	The UNRWA has a useful and updated information system in use.	0.828	0.000*

* Correlation is significant at the 0.05 level

Table (3.10) clarifies the correlation coefficient for each item of the **UNRWA Rank** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 3-10 Correlation coefficient of each item of UNRWA Rank and the total of this field

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	Industry leadership.	0.871	0.000*
2.	Future outlook.	0.876	0.000*
3.	Overall response to refugees needs.	0.915	0.000*
4.	Success rate in new services and systems launches.	0.957	0.000*
5.	Overall business performance and success.	0.954	0.000*
6.	Service growth.	0.962	0.000*

* Correlation is significant at the 0.05 level

- **Structure Validity**

The researcher assessed the fields' structure validity by calculating the correlation coefficients of each field of the questionnaire and the whole of questionnaire.

Table (3.11) clarifies the correlation coefficient for each filed and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

Table 3-11 Correlation coefficient of each field and the whole of questionnaire

No.	Paragraph	Spearman Correlation Coefficient	P-Value (Sig.)
1.	learning and education	0.921	0.000*
2.	Experience and expertise	0.910	0.000*
3.	Innovation and creation	0.939	0.000*
4.	Human Capital	0.962	0.000*
5.	Systems and programs	0.960	0.000*
6.	Research & Development (R & D).	0.941	0.000*
7.	Structural Capital	0.968	0.000*
8.	Strategic alliances, licensing and agreements	0.557	0.001*
9.	Customer and Supplier relations	0.853	0.000*
10.	Customer Knowledge	0.803	0.000*
11.	Relational Capital	0.874	0.000*
12.	Intellectual capital	0,997	0.000*
13.	UNRWA Rank	0.859	0.000*

* Correlation is significant at the 0.05 level

- **Reliability Statistics**

The researcher used two methods to ensure the reliability of the questionnaire.

1. **Cronbach's Alpha Coefficient**

   Table (3.12) shows the values of Cronbach's Alpha for each filed of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.928 and 0.987. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.990 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table 3-12 Cronbach's Alpha for each filed and the Entire Questionnaire

No.	Field	Cronbach's Alpha
1.	learning and education	0.936
2.	Experience and expertise	0.928
3.	Innovation and creation	0.964
4.	Human Capital	0.978
5.	Systems and programs	0.971
6.	Research & Development (R & D).	0.948
7.	Structural Capital	0.979
8.	Strategic alliances, licensing and agreements	0.942
9.	Customer and Supplier relations	0.930
10.	Customer Knowledge	0.964
11.	Relational Capital	0.973
12.	Intellectual capital	0.987
13.	UNRWA Rank	0.976
14.	**ALL paragraphs**	**0.990**

2. Split-Half

Table (3.13) shows the values of split-half method for each filed of the questionnaire and the entire question

Table (3.13) clarifies the correlation coefficient for each filed and the whole questionnaire. The correlation coefficients of all the fields are considered high enough, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

Table 3-13 Result of Split-Half Method

No.	Paragraph	Correlation Coefficient	Spearman-Brown Coefficient
1.	learning and education	0.934	0.966
2.	Experience and expertise	0.924	0.960
3.	Innovation and creation	0.828	0.907
4.	Human Capital	0.941	0.970
5.	Systems and programs	0.810	0.897
6.	Research & Development (R & D).	0.881	0.937
7.	Structural Capital	0.906	0.952
8.	Strategic alliances, licensing and agreements	0.955	0.977

No.	Paragraph	Correlation Coefficient	Spearman-Brown Coefficient
9.	Customer and Supplier relations	0.931	0.964
10.	Customer Knowledge	0.981	0.990
11.	Relational Capital	0.934	0.966
12.	Intellectual capital	0.924	0.960
13.	UNRWA Rank	0.828	0.907

* Correlation is significant at the 0.05 level

3.8. Statistical analysis Tools

The researcher would use data analysis both qualitative and quantitative data analysis methods. The Data analysis will be made utilizing (SPSS 15). The researcher would utilize the following statistical tools:

1) Cronbach's Alpha for Reliability Statistics
2) Pearson and Spearman Rank correlation for Validity
3) Frequency and Descriptive analysis
4) Kolmogorov-Smirnov test of normality
5) Nonparametric Tests (Sign test and Kruskal-Wallis test)

Sign test is used to determine if the mean of a paragraph is significantly different from a hypothesized value 6. If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of a paragraph is significantly different from a hypothesized value 6. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 6. On the other hand, if the P-value (Sig.) is greater than the level of significance, $\alpha = 0.05$, then the mean a paragraph is insignificantly different from a hypothesized value 6.

Kruskal-Wallis test is used to examine if there is a statistical significant difference between several means among the respondents toward the (Intellectual Capital and its Impact on the Innovation. Empirical study applied on the UNRWA Gaza field Office) due to (Job titles, Grade, chain of supervision).

Chapter 4

4. Data analysis and discussion

4.1. Introduction

This chapter demonstrates the data analysis, discussions of the data collected from the questionnaire in three dimensions, as following:

- Dimension one: Describes the personal characteristics.
- Dimension two: Describes the characteristics of UNRWA IC and innovation
- Dimension three: Hypotheses testing**,** discussions also cover the research hypotheses and its sub hypothesis.

4.2. Data measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, numerical scale 1-10 is used

4.2.1. Test of Normality

Table (4.1) shows the results for Kolmogorov-Smirnov (Shapiro-Wilk) test of normality. From Table (), the p-value for each field is smaller than 0.05 level of significance, then the distributions for these variables are not normally distributed. Consequently, Non-Parametric tests will be used to perform the statistical data analysis

Table 4-1 Kolmogorov-Smirnov (Shapiro-Wilk) Test of Normality

No.	Field	Test value	P-value
1.	learning and education	0.120	0.001*
2.	Experience and expertise	0.128	0.000*
3.	Innovation and creation	0.131	0.000*
4.	Human Capital	0.129	0.000*
5.	Systems and programs	0.179	0.000*
6.	Research & Development (R & D).	0.126	0.000*
7.	Structural Capital	0.207	0.000*
8.	Strategic alliances, licensing and agreements	0.101	0.011*
9.	Customer and Supplier relations	0.097	0.017*
10.	Customer Knowledge	0.112	0.003*
11.	Relational Capital	0.137	0.000*
12.	Intellectual capital	0.127	0.000*
13.	UNRWA Rank	0.101	0.011*
	ALL paragraphs of the questionnaire	**0.094**	**0.024***

* The distribution is not normally distributed at 0.05 level

4.3. Personal characteristics.

The data collected concerning the population personal characteristics were represented in three types: Employee grades, job titles and chain of supervision

4.3.1. Grade

Table (4.2) shows the distribution of respondents among the grades from 14 to 20. The grades were classified to three classes as shown in the table. Most of the study population is located in the class 14-16 (73.1%). This is reasonable and justified since staff members of grades 14-16 represent the operational level of UNRWA managers, which is reflected to the UNRWA IC in the same concept.

Table 0-2 Respondent distribution among the grades

Grades classes	Count	Percent
14-16	76	73.1
17-18	21	20.2
20	7	6.7
Total	**104**	**100.0**

4.3.2. Job title

Table (4.3) shows the distribution of respondents among job titles which indicate that (81.8%) from the respondents are offices. This percentage is considered reasonable according to the normal distribution of UNRWA managers in the Hierarchy.

Table 0-3 Respondent distribution among the job titles

Job title	Count	Percent
Chief	7	6.7
Deputy	12	11.5
Officer	85	81.8
Total	**104**	**100.0**

4.3.3. Number of Employees under UNRWA managers supervision

Table (4.4) shows the chain of supervision for the UNRWA managers. The number of supervised employees ranges between zero and 7000 with median 19.50 "Note median should be used in this case because the distribution for this variable is not normally distributed according to Kolmogorov-Smirnov (sig. =0.000). The distribution is not normally distributed due to the obvious variation in the employees' number in the education program (7000) compared with the others programs (from100 to 200)

Table4-4 Chain of supervision distribution

Number of Employees under supervision	Counted number of managers	Percent
0-9	32	30.8
10-19	20	19.2
20-39	26	25.0
40+	26	25.0
Total	104	100.0

4.4. characteristics of UNRWA IC and innovation

4.4.1. Human capital

This part describes the characteristics of UNRWA human capital by analyzing the three parts according to the questionnaire classification as following:

1. Learning and education.
2. Experience and expertise.
3. Innovation and creation

4.4.1.1. Analysis of "Learning and education" paragraphs:

- Table (4.5) shows the following results.

1. The mean of paragraph #2 "The UNRWA gets the most out of its employees when they cooperate with one another in team tasks" equals 7.22 (72.2%), test value=5.93, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
2. The mean of paragraph #4 "UNRWA's employees continuously learn from others (colleagues and outsiders)." equals 6.25 (62.5%), test value=2.14, and p-value =0.016, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
3. The mean of field "Learning and education" equals 6.64 (66.4%), test value=5.05, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Learning and education". Which is obvious that the weaknesses of UNRWA learning and education was in the exchanged learning and continues training however the team task was significantly strong in the UNRWA learning methods.

- The previous results revealed that:

1. The learning and education of UNRWA managers needs to be significantly improved inorder to develop the UNRWA human capital.
2. UNRWA needs to improve the cooperated learning tools among colleagues by reinforcing the group discussion, teamwork's assignments and on-hand training and orientation.
3. UNRWA should give more attention for employee learning and education through regular training needs assessment, new employees orientation sessions, peer-coaching, on-hand training and organized specialized and technical training courses.

Table 4-5 Results for the field "Learning and education"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	The competence of UNRWA's employees as a whole is equal to the most ideal level (matching with their work requirements and responsibilities).	6.80	68.0	4.88	0.000*	3
2.	The UNRWA gets the most out of its employees when they cooperate with one another in team tasks.	7.22	72.2	5.93	0.000*	1
3.	UNRWA's employees undergo continuous training programs every year.	6.30	63.0	3.20	0.001*	7
4.	UNRWA's employees continuously learn from others (colleagues and outsiders).	6.25	62.5	2.14	0.016*	8
5.	The ratio of educated personnel is on average compared with industry (no. of Phf). Master and Bachelor degrees compared with what should be.	6.88	68.8	5.93	0.000*	2
6.	UNRWA devotes a lot of time and effort to update and develops employee's knowledge and skills.	6.60	66.0	5.34	0.000*	5
7.	UNRWA's services have been continually improving over the past few years.	6.33	63.3	3.65	0.000*	6
8.	Employees learning and education affect UNRWA's productivity.	6.78	67.8	5.09	0.000*	4
	Learning and education	**6.64**	**66.4**	**5.05**	**0.000***	

* The mean is significantly different from 6

4.4.1.2. Analysis of "Experience and expertise" paragraphs:

- Table (4.6) shows the following results.
  1. The mean of paragraph #2 "UNRWA's employees consistently perform at their best" equals 7.03 (70.3%), test value=5.65, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  2. The mean of paragraph #3 "UNRWA's employees have worked for many years in the firm (employee turnover is very low)."equals 6.33 (63.3%), test value=3.11, and p-value =0.001, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 6. We conclude that the respondents agreed to this paragraph.
  3. The mean of field "Experience and expertise" equals 6.65 (66.5%), test value=4.14, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Experience and expertise". Which is obvious that the weaknesses of UNRWA Experience and expertise was in the employee turnover however the consistent performance was significantly strong in the UNRWA staff member field of experience.

- The previous results revealed that:

  1. The experience and expertise of UNRWA managers is good but needs to be significantly improved in-order to develop the UNRWA human capital.
  2. UNRWA needs to find solution for the high employees turnover rate by regulate a certain period for each post especially grades from 14 to 20.
  3. UNRWA should give more attention for employee experience and expertise through considering the years of experience for the staff members in the annual accumulative allowances.

Table4-6 Results for the field "Experience and expertise"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	UNRWA's employees are experts in their respective areas	6.53	65.3	4.61	0.000*	5
2.	UNRWA's employees consistently perform at their best.	7.03	70.3	5.65	0.000*	1
3.	UNRWA's employees have worked for many years in the firm (employee turnover is very low).	6.33	63.3	3.11	0.001*	7
4.	The UNRWA prides itself on being efficient.	6.68	66.8	4.24	0.000*	3
5.	The staff is highly professional.	6.63	66.3	4.66	0.000*	4
6.	The UNRWA has the lowest costs per transaction of any in the comparison with other international organizations	6.47	64.7	3.77	0.000*	6
7.	Employees' experience and expertise affect UNRWA's productivity.	6.86	68.6	5.05	0.000*	2
	Experience and expertise	**6.65**	**66.5**	**4.14**	**0.000***	

* The mean is significantly different from 6

4.4.1.3. Analysis of "Innovation and creation" paragraphs:

- Table (4.7) shows the following results.
  1. The mean of paragraph #1 "UNRWA's employees are considered creative and bright compared with other international organizations" equals 6.54 (65.4%), test value=3.69, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  2. The mean of paragraph #6 "UNRWA systems support staff innovation" equals 5.52 (55.2%), test value=-0.11, and p-value =0.457, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to this paragraph.

3. The mean of paragraph #5 "UNRWA's employees are continuously encouraged to bring new knowledge and ideas to the business and share their knowledge with their colleagues" equals 5.88 (58.8%), test value=-1.72, and p-value =0.043, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the value 6. We conclude that the respondents disagreed to this paragraph. We conclude that the respondents disagreed to this paragraph.
4. The mean of field "Innovation and creation" equals 6.04 (60.4%), test value=1.70, and p-value =0.045, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Innovation and creation". Which is obvious that the weaknesses of UNRWA innovation and creation was in the UNRWA systems that supporting the innovation however the managers viewpoint toward their staff members innovation was significantly strong in the UNRWA innovation and creation field

- The previous results revealed that:

1. The Innovation and creation of UNRWA managers needs to be significantly improved in-order to develop the UNRWA human capital.

2. UNRWA needs to improve its systems concerning the support of innovation and creation, the results shows significant weaknesses in the UNRWA system in motivating innovation and creation which is strange according to the top management culture and financial resources compared to the other international organizations in Gaza.

3. UNRWA should give more attention for employee Innovation and creation and its concerned policies through giving special motivation even financial or annual prizes could be special publications for innovators and special allowances could motivate and encourage the innovation and creation field.

Table 0-7 Results for the field "Innovation and creation"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	UNRWA's employees are considered creative and bright compared with other international organizations	6.54	65.4	3.69	0.000*	1
2.	UNRWA's employees are keen to voice their opinions in group discussions.	6.29	62.9	2.73	0.003*	3
3.	UNRWA's employees usually come up with new ideas.	6.14	61.4	1.70	0.045*	4
4.	Large numbers of new ideas are launched compared with competitors.	6.43	64.3	3.11	0.001*	2
5.	UNRWA's employees are continuously encouraged to bring new knowledge and ideas to the business and share their knowledge with their colleagues.	5.88	58.8	-1.72	0.043*	7
6.	UNRWA systems support staff innovation	5.52	55.2	-0.11	0.457	9
7.	UNRWA's employees are satisfied with their UNRWA's innovation policies and programs.	5.95	59.5	-2.24	0.013*	5
8.	UNRWA's employees are highly motivated and committed to share new great ideas within the UNRWA as it should be.	5.69	56.9	-1.19	0.118	8
9.	Employees' innovation and creation affect UNRWA's value in the relevant market	5.93	59.3	-0.86	0.196	6
	Innovation and creation	**6.04**	**60.4**	**1.70**	**0.045***	

* The mean is significantly different from 6

4.4.1.4. Analysis of the Field of "Human Capital"

- Table (4.8) shows the following results that the mean of the field "Human Capital" equals 6.42 (64.2%), test value=3.04, and p-value =0.001, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6.
- We conclude that the respondents agreed to the field of "Human Capital" is fairly acceptable in the UNRWA but it is not in the high level which indicate that UNRWA

Human Capital have a group of weaknesses in the current available resources, meanwhile UNRWA should give more attention for its Human Capital through giving more enrichment for the training dimension (learning and education as well as the keeping the experienced staff members and motivate the innovative and creative managers together to improve the human capital as essential field and concerns.

- These results are: agreed with Abdul Reda (2008) who underlined the importance of taking care the human capital in-order to improve the intellectual capital for organizations, as well as the agreement with (Shaban, 2011) and M. Momen, C.Rohara, (2009) in the mean value which is over (6) but at the same time disagreed with the two studies above in the value itself, for them their value are above (8) but in this results as shown below is 6.24, this disagreement belong to the difference in the study population, where is this study applied on nonprofit organization (UNRWA) and the mentioned studies applied on profit organizations.

Table4-8 The overall characteristics of UNRWA "Human Capital"

Filed	Mean	Mean %	Test value	P-value(Si
Human Capital	6.42	64.2	3.04	0.001*

* The mean is significantly different from 6

4.4.2. Structural Capital

This part describes the characteristics of UNRWA structural capital by analyzing the three parts according to the questionnaire classification as following:

1. Systems and programs
2. Research & Development (R & D)

4.4.2.1. Analysis of "Systems and programs" paragraphs

- Table (4.9) shows the following results:
  1. The mean of paragraph #3 "The UNRWA's recruitment programs are comprehensive and dedicated to hiring the best candidates available" equals

6.38 (63.8%), test value=3.56, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.

2. The mean of paragraph #6 "Staff have sufficient influence over decisions make within the UNRWA" equals 5.32 (53.2%), test value=-0.80, and p-value =0.211, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to this paragraph.
3. The mean of paragraph #7 "The UNRWA is not a bureaucratic nightmare" equals 5.83 (58.3%), test value=-1.90, and p-value =0.029, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the value 6. We conclude that the respondents disagreed to this paragraph. We conclude that the respondents disagreed to this paragraph.
4. The mean of field "Systems and programs" equals 5.85 (58.5%), test value=-1.97, and p-value =0.024, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this field is significantly smaller than the value 6. We conclude that the respondents disagreed to the field of "Systems and programs".

- The previous results revealed that:

1. The systems and programs of UNRWA managers need to be significantly changed to be improved inorder to develop the UNRWA structural capital.
2. UNRWA needs to improve its sufficient influence over decisions make within the UNRWA, results shows significant weaknesses in the UNRWA staff influencing its decisions since it is obviously appeared in the managers satisfaction concerning the decision making process at the UNRWA, mainly this time especially in the austerity measures top management following and influencing all its decisions in Gaza.
3. UNRWA should give more attention for employee influence over decisions make within the UNRWA through giving enough margin for the managers in the decision making process and minimizing the austerity measure that adopted by the front office.

Table 4-9 Results for the field "Systems and programs"

No.	Paragraph	Mean	Mean %	Test value	P-value(Sig.)	Rank
1.	The UNRWA has succession training programs for each and every post position (major positions).	5.85	58.5	-0.84	0.201*	4
2.	The UNRWA's culture and atmosphere are supportive and comfortable.	6.13	61.3	2.96	0.002*	2
3.	The UNRWA's recruitment programs are comprehensive and dedicated to hiring the best candidates available.	6.38	63.8	3.56	0.000*	1
4.	The UNRWA has a well developed reward system related to performance.	5.58	55.8	-0.62	0.267	7
5.	The UNRWA supports its systems according to the international standards.	5.81	58.1	-0.56	0.288	6
6.	Staff have sufficient influence over decisions make within the UNRWA	5.32	53.2	-0.80	0.211	8
7.	The UNRWA is not a bureaucratic nightmare.	5.83	58.3	-1.90	0.029*	5
8.	UNRWA's systems and programs affect UNRWA's value in the relevant market	5.90	59.0	-1.42	0.078	3
	Systems and programs	**5.85**	**58.5**	**-1.97**	**0.024***	

* The mean is significantly different from 6

4.4.2.2. Analysis of "Research & Development (R & D)" paragraphs:

- Table (4.10) shows the following results:

1. The mean of paragraph #3 "The UNRWA continuously develops and re-organizes itself based on R & D I e.g. Structure and responsibilities" equals 5.91 (59.1%), test value=-1.06, and p-value =0.145, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to this paragraph.

2. The mean of paragraph #6 "The UNRWA's board of management highly trust and support the R&D department" equals 5.07 (50.7%), test value=-3.69, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the value 6. We conclude that the respondents disagreed to this paragraph. We conclude that the respondents disagreed to this paragraph.

3. The mean of paragraph #5 "The UNRWA determines appropriate and adequate budget for R& D" equals 4.88 (48.8%), test value=-4.81, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the value 6. We conclude that the respondents disagreed to this paragraph. We conclude that the respondents disagreed to this paragraph.

4. The mean of field "Research & Development (R & D)" equals 5.51 (55.1%), test value=-0.50, and p-value =0.310, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this field is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to the field of "Research & Development (R & D)".

- The previous results revealed that:

1. The research and development field of UNRWA managers needs to be significantly changed to be improved inorder to develop the UNRWA structural capital.

2. UNRWA needs to improve its determinants of appropriate and adequate budget for R&D, concerning defining special budget for R&D, the results shows significant gap in the UNRWA system identifying special part from each program or department budget to encourage the R&D for and partnership with the local academic institution and researching centers to conduct researches and studies about UNRWA systems, programs and any related field. According the international standards the organizations assigns 25% from its budget for the R&D; however some indicators stated that limited managers prevented to give its staff members from giving part of their official working hours to conduct their personal researches which is negative indicator against the international standards of R&D.

3. UNRWA should give more attention for R&D and its concerned procedures and financial resources through assigning part of its budget and facilitate the researchers opportunities to conduct their researches.

Table4-10 Results for the field "Research & Development (R & D)"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	The UNRWA is considered a research leader	5.57	55.7	-0.68	0.250	5
2.	The UNRWA continuously develops work processes.	5.77	57.7	-1.60	0.055	2
3.	The UNRWA continuously develops and re-organizes itself based on R & D e.g. Structure and responsibilities.	5.91	59.1	-1.06	0.145	1
4.	The systems and procedures of the UNRWA support innovation.	5.71	57.1	-0.77	0.220	3
5.	The UNRWA determines appropriate and adequate budget for R& D.	4.88	48.8	-4.81	0.000*	7
6.	The UNRWA's board of management highly trust and support the R&D department.	5.07	50.7	-3.69	0.000*	6
7.	UNRWA's R&D affects UNRWA's value in the relevant market	5.67	56.7	-0.67	0.252	4
	Research & Development (R & D)	**5.51**	**55.1**	**-0.50**	**0.310**	

*The mean is significantly different from 6

4.4.2.3. Analysis of the Field of "Structural Capital"

- Table (4.11) shows the following results that the mean of the field "Structural Capital" equals 5.69 (56.9%), test value=-2.30, and p-value =0.011, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this field is significantly smaller than the value 6. We conclude that the respondents disagreed to the field of "Structural Capital".
- This indicate that UNRWA should re-evaluate and give more attention for its Structural Capital through reform its systems and programs as well as the R&D field through developing its systems, programs procedures to encourage the R&D by financial resources, taking in consideration the R&D field is closed related in reforming the programs and systems.

- These results are: agreed with Shaban (2011) who underlined the structural capital in Jawwal has recorded the lowest value between the other components, importance of taking care the human capital in-order to improve the intellectual capital for organizations, also agreed with Al Fadel (2009) who emphasis that the organization operation improving start from the structural capital, but this result disagreed with Kazim (2008) that the structural capital is the strongest component in his study, which belong to the type of his study business (electricity company-Iraq), which is totally different from the UNRWA working field (relief and working)

Table4-11 The overall characteristics of UNRWA "Structural Capital"

Filed	Mean	Mean %	Test value	P-value(Sig.)
Structural Capital	5.69	56.9	-2.30	0.011*

* The mean is significantly different from 6

4.4.3. Relational Capital.

This part describes the characteristics of UNRWA structural capital by analyzing the three parts according to the questionnaire classification as following:

1. Strategic alliances, licensing and agreements.
2. Customer and Supplier relations
3. Customer Knowledge

4.4.3.1. Analysis of "Strategic alliances, licensing and agreements" paragraphs:

- Table (4.12) shows the following results.
  1. The mean of paragraph #7 "UNRWA's strategic alliances affect UNRWA's value in the relevant market" equals 6.38 (63.8%), test value=2.12, and p-value =0.017, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  2. The mean of paragraph #2 "The UNRWA has diverse distribution channels" equals 6.31 (63.1%), test value=3.38, and p-value =0.000, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to this paragraph.

3. The mean of paragraph #1 "The UNRWA is currently working on joint projects with many other organizations" equals 6.22 (62.2%), test value=1.23, and p-value =0.109, which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the value 6. We conclude that the respondents (Do not know, neutral) to this paragraph.
4. The mean of field "Strategic alliances, licensing and agreements" equals 6.22 (62.2%), test value=2.61, and p-value =0.004, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Strategic alliances, licensing and agreements".

- The previous results revealed that:

1. The Strategic alliances, licensing and agreements of UNRWA need to be significantly improved in-order to develop the UNRWA relational capital.

2. UNRWA needs to increase the ratio of business which done with strategic alliances through contract and memorandum of understanding and getting out from the isolation that UNRWA stocked itself and its employees in Gaza
3. UNRWA should give more attention its Strategic alliances, licensing and agreements for agreements with local and international stakeholders organizations in Gaza aiming at exchanging the experience and improving its operations

Table 0-12 Results for the field "Strategic alliances, licensing and agreements"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	The UNRWA is currently working on joint projects with many other organizations.	6.22	62.2	1.23	0.109	4
2.	The UNRWA has diverse distribution channels.	6.31	63.1	3.38	0.000*	2
3.	High ratio of UNRWA's business is done with strategic alliances.	6.02	60.2	0.67	0.252	7
4.	People from outside the UNRWA are consulted when decisions are made within the UNRWA.	6.15	61.5	1.42	0.077	5
5.	The UNRWA is able to learn and add value through its partners.	6.30	63.0	1.85	0.032*	3

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
6.	The UNRWA prides itself on being partnership oriented.	6.13	61.3	1.66	0.048*	6
7.	UNRWA's strategic alliances affect UNRWA's value in the relevant market	6.38	63.8	2.12	0.017*	1
	Strategic alliances, licensing and agreements	**6.22**	**62.2**	2.61	**0.004***	

* The mean is significantly different from 6

4.4.3.2. Analysis of "Customer and Supplier relations" paragraphs:

- Table (4.13) shows the following results.
  1. The mean of paragraph #6 "UNRWA's relationship with customer and supplier affects UNRWA's value in the relevant market" equals 7.07 (70.7%), test value=5.07, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  2. The mean of paragraph #1 "A poll of UNRWA's customers shows them to be loyal to the UNRWA and would indicate that they are generally satisfied" equals 61.0 (61.0%), test value=2.63, and p-value =0.004, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  3. The mean of field "Customer and Supplier relations" equals 6.57 (65.7%), test value=3.86, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Customer and Supplier relations".

- The previous results revealed that:

  1. The Customer and Supplier relations of UNRWA need to be significantly improved in-order to develop the UNRWA relational capital.

2. UNRWA needs to increase its customers (target group) loyalty and improving their satisfaction indicators by conducting regular meetings with community key persons and open official channels with refugees societies, although UNRWA created four new posts for this purpose (Chief areas) however the community satisfaction still under the accepted line.
3. UNRWA should give more attention for Customer and Supplier relations through regular meetings, annual surveys or creating special department dealing with the customers and suppliers relations such as external relations department rather than public relations department.

Table4-13 Results for the field "Customer and Supplier relations"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	A poll of UNRWA's customers shows them to be loyal to the UNRWA and would indicate that they are generally satisfied.	6.10	61.0	2.63	0.004*	6
2.	The UNRWA devotes considerable time to select suppliers.	6.43	64.3	3.99	0.000*	4
3.	The UNRWA maintains a long-standing relationship with suppliers.	6.51	65.1	3.73	0.000*	3
4.	The UNRWA has greatly reduced the time it takes to resolve a customer's problem.	6.38	63.8	2.42	0.008*	5
5.	The UNRWA feels confident that their customers will continue to do business with it.	6.96	69.6	4.39	0.000*	2
6.	UNRWA's relationship with customer and supplier affects UNRWA's value in the relevant market	7.07	70.7	5.07	0.000*	1
	Customer and Supplier relations	**6.57**	**65.7**	3.86	**0.000***	

* The mean is significantly different from 6

4.4.3.3. Analysis of "Customer Knowledge" paragraphs:

- Table (4.14) shows the following results.
  1. The mean of paragraph #7 "The UNRWA has a useful and updated information system in use" equals 6.98 (69.8%), test value=4.80, and p-value =0.000, which is

smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.

2. The mean of paragraph #2 "The UNRWA gets as much feedback out of customers as it possibly can under different circumstances" equals 6.72 (67.2%), test value=3.60, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
3. The mean of field "Customer Knowledge" equals 6.87 (68.7%), test value=5.15, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of Customer Knowledge".

- The previous results revealed that:

1. The Customer Knowledge of UNRWA managers need to be significantly improved inorder to develop the UNRWA relational capital.
2. UNRWA needs to improve its customers feedback which is valuable for the evaluation purposes through utilizing the feedback flow comes from the distributed offices at all Gaza towns especially the poor and remote areas, although the monthly reports from all programs mentioning essential feedback related to UNRWA strategies and activities but unfortunately top management neglecting most of those points and considering only the point that could beneficiate from them for its strategy.
3. UNRWA should give more attention for Customer Knowledge by creating customers data bank, taking care of the departments, programs regular reports and seriously activating the evaluators' reports whatever the indicators results, even to agree or disagree with its strategy.

Table4-14 Results for the field "Customer Knowledge"

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
1.	It is important for the UNRWA to share knowledge with its partners.	6.88	68.8	5.13	0.000*	3
2.	The UNRWA gets as much feedback out of customers as it possibly can under different circumstances.	6.72	67.2	3.60	0.000*	7
3.	UNRWA continuously got data about partners to improve its operations	6.87	68.7	4.85	0.000*	4
4.	Data about customers are continuously updated.	6.94	69.4	4.18	0.000*	2
5.	The UNRWA has relatively complete data about the suppliers.	6.84	68.4	4.56	0.000*	5
6.	The UNRWA continually meets with target groups to find out what they want from it.	6.83	68.3	4.22	0.000*	6
7.	The UNRWA has a useful and updated information system in use.	6.98	69.8	4.80	0.000*	1
	Customer Knowledge	**6.87**	**68.7**	**5.15**	**0.000***	

* The mean is significantly different from 6

4.4.3.4. Analysis of the Field of Relational Capital

- Table (4.15) shows the following results:
- The mean of the field "Analysis of the Field of Relational Capital" equals 6.55 (65.5%), test value=4.61, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6. We conclude that the respondents agreed to the field of "Analysis of the Field of Relational Capital".

- This indicate that UNRWA should give more attention for its Relational Capital through giving concerns to the community (refugees) needs and design its strategies and plans accordingly as well as re-evaluate its programs according to their needs, in the other hands the result shows significant managers satisfaction about the suppliers relational and procedures meanwhile moderate satisfaction about the alliances and agreements with other organizations due to the isolated situation of UNRWA in Gaza which is belong to the political situation and conflict between the Palestinian parties especially in Gaza.

- These results are agreed with Abdul Reda (2008) who mentioned that the relational capital is one of the main determinants for the distinguished organizations, and Mazlan (2005) who explained the importance of relational capital in accomplished the best performance in Malaysian Telecom, also agreed relatively with Shabn (2011) in which the relational capital scored the highest mean in some field (Knowledge) and disagree with him in the field strategic alliances and agreement. This agreement belong to the same business culture both of UNRWA and Jawwal working meanwhile disagreement belong to the different business goal, Jawwal is profit and UNRWA is non-profit organization.

Table 0-15 The overall characteristics of UNRWA "Relational Capital"

Filed	Mean	Mean %	Test value	P-value(Sig.)
Analysis of the Field of Relational Capital	**6.55**	**65.5**	**4.61**	**0.000***

* The mean is significantly different from 6

4.4.3.5. Analysis of the Fields of "Intellectual capital"

- Table (4.16) shows the following results. That the mean of the field "Intellectual capital" equals 6.28 (62.8%), test value=2.45, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "Intellectual capital".

- The previous results revealed that:

  1. The Intellectual capital concerns in the UNRWA GFO is fairly considered but needs to be improved in certain aspects, although UNRWA claims that it has organizational development and reforming but the results shows significant need to change the way that top management treating the human aspect of GFO.

- This results are:

  Agreed with Shaba (2011) in major fields of the study according to the similar culture and environment of Gaza business, and supported by Chang, Hsieh (2011) However, these study findings mentioned that the intellectual capital of semiconductors industry in Taiwan needed to be improved. Also Kazem (2008) stated that there is a need to give attention to human and relational (customers) capital by building human capacity and expand relations with customers.

Disagreed with and Abdul Monem, (2009) where he concluded that there is an ambiguity in the understanding of the intellectual capital concept and importance in Jordanian ready-made clothes company and confusion between Intellectual capital and intellectual property concept which justified that the big difference between the business type and the operations style, also disagreed with Subramaniam and Youndt (2005) for the different population that its population selected through 93 different organization which lead to different styles and organizational culture.

Table 4-16 Overall characteristics of UNRWA-GFO "Intellectual Capital"

Filed	Mean	Mean %	Test value	P-value(Sig.)
Intellectual capital	**6.28**	**62.8**	**2.45**	**0.007**

* The mean is significantly different from 6

4.4.4. Analysis of "UNRWA Rank with comparison to other organizations".

- Table (4.17) shows the following results.
  1. The mean of paragraph #1 "Leader in its field of work" equals 6.80 (68.0%), test value=4.44, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  2. The mean of paragraph #4 "Success rate in new services and systems launches" equals 6.38 (63.8%), test value=2.48, and p-value =0.007, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the value 6. We conclude that the respondents agreed to this paragraph.
  3. The mean of field "UNRWA Rank" equals **6.58** (**65.8**%), test value=**4.18**, and p-value =0.000, which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the value 6. We conclude that the respondents agreed to the field of "UNRWA Rank".

- The previous results revealed that:

1. The intellectual capital fields and sub-fields, table (4.17) shows that this paragraph results support the overall characteristics of UNRWA IC, as the moderate to higher rank given by UNRWA managers in the mentioned table results, we can see that the UNRWA managers looks at their organization as a leader in the field of work despite some problems and negative mentioned above, thereby UNRWA-GFO can manage and improve all the negatives and problems when we compare it with other organizations in Gaza taking in consideration the number of employees, the political situation and donors pressure toward its activities and relations in Gaza.

Table 4-17 Ranking of UNRWA in comparison with other organizations

No.	Paragraph	Mean	Mean %	Test value	P-value (Sig.)	Rank
•	Leader in its field of work.	6.80	68.0	4.44	0.000*	1
•	Promising future.	6.73	67.3	4.88	0.000*	2
•	Overall response to refugees needs.	6.56	65.6	3.29	0.000*	3
•	Success rate in new services and systems launches.	6.38	63.8	2.48	0.007*	6
•	Overall business performance and success.	6.55	65.5	3.99	0.000*	4
•	Service growth.	6.48	64.8	3.16	0.001*	5
	UNRWA Rank	**6.58**	**65.8**	**4.18**	**0.000***	

* The mean is significantly different from 6

4.5. Testing Hypotheses

- To investigate the impact of UNRWA intellectual capital on the innovation, the following hypotheses are stated as follows:

4.5.1. Hypothesis number (1)

(H: 1) Intellectual capital is significantly correlated with innovation performance in UNRWA- Gaza field office (GFO) at 0.05 level of significance.

- This hypothesis can be split into the following sub-hypotheses:

1. **(H:1.1) Human Capital is significantly correlated with innovation in UNRWA-Gaza field office (GFO) at 0.05 level of significance.**

2. **(H:1.2): Structural capital is correlated with innovation in UNRWA- Gaza field office (GFO**).

3. **(H:1.3) Relational capital is correlated with innovation in UNRWA- Gaza field office (GFO).**

4.5.1.1. (H:1.1) Human Capital is significantly correlated with innovation in UNRWA-Gaza field office (GFO) at 0.05 level of significance.

- Table (4.18) shows that the correlation coefficient between Human capital and innovation in UNRWA- Gaza field office (GFO) equals .793 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude that there is a significant relationship between Human capital and innovation performance in UNRWA- Gaza field office (GFO).

- The previous results revealed that the human capital significantly influence the innovation, were all the fields of human capital within UNRWA lead to better innovative practices and performance in all aspects of work.

- This result is agreed to the findings of Zerenler and Hasiloglu (2008) and Dakhil and Clercq (2004) which showed significant correlation between human capital and innovation; and **Lee and Florida (2010)** stated that innovation at the regional level is positively and significantly associated with both human capital and creativity; Amiri, Jandaghi and Ramezan (2011) have consistent result similar to these results the human capital has positive relationship and correlation to the two types of innovation incremental and radical**.** However this result disagreed with the findings of Abdullah Kazim (2008) which showed that the human capital has no significant impact on the innovation. And Subramaniam and Youndt (2005) who showed that human capital by itself was negatively associated with radical innovative capability, this belong to the gap and difference between this study and other in their orientation and focusing on the benefits side rather than their human capital also the type of business differences.

Table4-18 Correlation coefficient between Human capital and innovation performance in UNRWA- Gaza field office (GFO)

Hypothesis	Spearman Correlation Coefficient	P-Value (Sig.)
Human capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).	.793	0.000*

* Correlation is statistically significant at 0.05 level

4.5.1.2. (H: 1.2) Structural capital is positively correlated with innovation in UNRWA- Gaza field office (GFO).

- Table (4.19) shows that the correlation coefficient between Structural capital and innovation in UNRWA- Gaza field office (GFO) equals .798 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude that there is s significant relationship between Structural capital and innovation in UNRWA- Gaza field office (GFO) .
- The previous results revealed that the structural capital significantly influence the innovation, were the results showed that the current situation of structural capital negatively influence the innovation, however the result showed significant influence whatever the type of influencing.

- This result is agreed to the findings of Zerenler and Hasiloglu (2008) and Abdullah Kazim (2008) which showed significant correlation between human capital and innovation; however the researcher didn't find any study disagreed with this result. Amiri, Jandaghi and Ramezan (2011) have similar to these results the structural capital has positive relationship and correlation to the two types of incremental and radical innovation.

Table 4-19 Correlation coefficient between Structural capital and innovation in UNRWA- Gaza field office (GFO)

Hypothesis	Spearman Correlation Coefficient	P-Value (Sig.)
Structural capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).	.798	0.000*

* Correlation is statistically significant at 0.05 level

4.5.1.3. (H: 1.3) Relational capital is positively correlated with innovation in UNRWA- Gaza field office (GFO).

- Table (4.20) shows that the correlation coefficient between Relational capital and innovation in UNRWA- Gaza field office (GFO) equals .677 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude that there is a significant relationship between Relational capital and innovation performance in UNRWA- Gaza field office (GFO).

- The previous results revealed that the relational capital significantly influence the innovation, were all the fields of human capital within UNRWA lead to better innovative practices and performance in all aspects of work.
- This result is agreed to the findings of Zerenler and Hasiloglu (2008) which showed significant correlation between relational capital and innovation; Amiri, Jandaghi and Ramezan (2011) have similar to these results the relational capital has positive relationship and correlation to the two types of incremental and radical innovation, but the researchers commented in this pint that the knowledge and relations needed to be developed. However this result disagreed with the findings of Abdullah Kazim (2008)

which showed that the human capital has no significant impact on the innovation, this disagreement can be justified with business type between profit and nonprofit and the complexity of UNRWA structural capital as on of the united nations organization, which subjected to international rules and regulations

Table 0-20 Correlation coefficient between Relational capital and innovation performance in UNRWA- Gaza field office (GFO)

Hypothesis	Spearman Correlation Coefficient	P-Value (Sig.)
Relational capital is positively correlated with innovation performance in UNRWA- Gaza field office (GFO).	.677	0.000*

* Correlation is statistically significant at 0.05 level

4.5.1.4. (H: 1) Intellectual capital is (significantly) positively correlated with innovation performance in UNRWA- Gaza field office (GFO) at 0.05 level of significance.

- The main hypothesis analysis result indicate that the there is a significant influence and correlation between the intellectual capital and innovation which is not supported by Zerenler and Hasiloglu (2008) and Abdullah Kazim (2008) as final finding. This disagreement in the researcher viewpoint belongs to the different business environment between Gaza and other counties and they are profit organization but UNRWA is relief nonprofit organization.

4.5.2. Hypothesis number (2)

(H: 2) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to personal characteristics.

- This hypothesis can be split into the following sub-hypotheses:

1. **(H: 2.1) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to job titles.**

2. **(H: 2.2) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to grade.**

3. **(H: 2.3) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to chain of supervision.**

4.5.2.1. (H: 2.1) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to job titles.

- Table (4.21) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the field "Research & Development (R & D)", then there is insignificant difference among the respondents regarding to these fields due to Position. We conclude that the respondents' job titles have no effect on these fields.

- Table (4.21) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the other fields, then there is significant difference among the respondents regarding to these fields due to job titles. We conclude that the respondents' job titles have significant effect on these fields.
- From table (4.21), we conclude that Chief respondents have the highest mean among the other position categories.

- So it can be said that there is a significant difference regarding the influence of intellectual capital and its innovation due to job titles which is attributed to a fact that obvious difference between the officers, deputies and chiefs in all aspects, such as authorities, benefits and financial rewards.
- This result is supported by Shaban (2011) and not supported by Zerenler and Hasiloglu (2008) and Abdullah Kazim (2008), they found that there is no differences in according to the posts which is reasonable according to the organizational culture for both study population.

Table4-21 Kruskal-Wallis Test of the Fields for Position

No.	Field	Test Value	Sig.	Means		
				Chief	Deputy	Officer
1.	Learning and education	10.062	**0.018***	76.6	72.8	66.0
2.	Experience and expertise	12.499	**0.006***	77.8	72.6	66.0
3.	Innovation and creation	15.969	**0.001***	76.3	66.6	59.4
4.	Human Capital	14.737	**0.002***	76.8	70.4	63.5
5.	Systems and programs	12.328	**0.006***	73.2	65.9	57.2
6.	Research & Development (R&D).	4.900	**0.179**	60.2	59.5	55.4
7.	Structural Capital	9.277	**0.026***	67.1	62.9	56.3
8.	Strategic alliances, licensing and agreements	10.943	**0.012***	64.7	71.1	59.6
9.	Customer and Supplier relations	17.936	**0.000***	83.3	72.2	63.6
10.	Customer Knowledge	12.669	**0.005***	84.1	74.6	66.1
11.	Relational Capital	17.825	**0.000***	77.1	72.7	63.1
12.	Three fields together ”Human, Structural and Relational Capital”	15.992	**0.001***	74.5	69.3	61.5
13.	UNRWA Rank	16.238	**0.001***	83.6	69.3	64.8

* Means differences are significant at $\alpha = 0.05$

4.5.2.2. (H: 2.2) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to grade.

- Table (4.22) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the fields "Learning and education, Research & Development (R & D) and Structural Capital ", then there is insignificant difference among the respondents regarding to these fields due to grade. We conclude that the respondents' grade has no effect on these fields.

- Table (4.22) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the other fields, then there is significant difference among the respondents regarding to these fields due to grade. We conclude that the respondents' grade has significant effect on these fields.

- From table (4.22), we conclude that grade (20) respondents have the highest mean among the other grade categories.

- So it can be said that there is a significant difference regarding the influence of intellectual capital and its innovation due to grades which is attributed to a fact that grade 20 staff members, have special satisfaction toward the UNRWA practices which is reasonable for their closed relation and influence to the design makers and their ability to influence the overall strategy and.
- This result is not supported by most of the other studies for the reason that there is no any study analyzed its data according to this variable so, so it is not supported by any study which is attributed to the ignorance of this variable according to their samples.

Table 4-22 Kruskal-Wallis Test of the Fields for Grade

No.	Field	Test Value	Sig.	Means		
				14-16	17-18	20
1.	Learning and education	3.22	**0.200**	65.7	65.8	76.6
2.	Experience and expertise	7.68	**0.021***	66.5	62.7	77.8
3.	Innovation and creation	8.77	**0.012***	59.7	57.7	76.3

No.	Field	Test Value	Sig.	Means		
				14-16	17-18	20
4.	Human Capital	8.05	**0.018***	63.7	61.8	76.8
5.	Systems and programs	7.43	**0.024***	57.2	58.0	73.2
6.	Research & Development (R & D).	0.27	**0.873**	55.0	53.7	60.2
7.	Structural Capital	3.99	**0.136**	56.2	56.0	67.1
8.	Strategic alliances, licensing and agreements	6.80	**0.033***	60.5	67.4	64.7
9.	Customer and Supplier relations	15.37	**0.000***	63.5	68.1	83.3
10.	Customer Knowledge	10.47	**0.005***	66.5	71.2	84.1
11.	Relational Capital	11.89	**0.003***	63.5	69.0	77.1
12.	Three fields together "Human, Structural and Relational Capital"	8.85	**0.012***	61.7	62.8	74.5
13.	UNRWA Rank	12.12	**0.002***	64.8	63.7	83.6

* Means differences are significant at $\alpha = 0.05$

4.5.2.3. (H: 2.3) There is no significant difference among respondents at 0.05 level of significance regarding to the Intellectual Capital and its Impact on the Innovation due to chain of supervision

- Table (4.23) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for the fields "Learning and education, Experience and expertise, Human Capital, Research & Development (R & D) and Structural Capital ", then there is insignificant difference among the respondents regarding to these fields due to number of supervised employees. We conclude that the respondents' number of supervised employees has no effect on these fields.
- Table (4.23) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the other fields, then there is significant difference among the respondents regarding to these fields due to number of supervised employees. We conclude that the respondents' number of supervised employees has significant effect on these fields.
- From table (4.23), we conclude that class **20-39** respondents have the highest mean among the other number of supervised employees' categories.
- So it can be said that there is a significant difference regarding the influence of intellectual capital and its innovation due chain of supervision which is attributed to a

fact that the number 20-39 of supervised staff is controllable and easy to be managed as well as the increased number of staff lead to less ability to develop, monitor and requires extra load by the middle staff in addition to the distinguished performance and outputs.

- This variable is not considered by any of the previous studies meanwhile Abdallah Kazem (2008) mentioned in his study that the less number of staff in any departments is will lead to more efficient monitoring and control over their performance.

Table 0-23 Kruskal-Wallis Test of the Fields for Number of Employees

No.	Field	Test Value	Sig.	Means			
				0-9	10-19	20-39	40+
1.	Learning and education	2.88	**0.411**	62.8	66.5	71.0	66.4
2.	Experience and expertise	1.11	**0.774**	63.9	67.8	70.3	66.5
3.	Innovation and creation	9.51	**0.023***	53.4	63.3	67.5	60.4
4.	Human Capital	4.99	**0.173**	59.6	65.7	69.5	64.2
5.	Systems and programs	10.67	**0.014***	51.4	59.4	67.2	58.5
6.	Research & Development (R&D).	3.34	**0.342**	51.3	57.3	60.3	55.1
7.	Structural Capital	6.40	**0.094**	51.3	58.4	63.9	56.9
8.	Strategic alliances, licensing and agreements	12.49	**0.006***	55.2	63.4	66.7	62.2
9.	Customer and Supplier relations	8.69	**0.034***	58.8	67.8	70.6	65.7
10.	Customer Knowledge	8.03	**0.045***	62.6	69.6	72.8	68.7
11.	Relational Capital	10.48	**0.015***	58.9	66.9	70.0	65.5
12.	Three fields together ”Human, Structural and Relational Capital”	7.97	**0.047***	57.3	64.2	68.3	62.8
13.	UNRWA Rank	8.01	**0.046***	61.3	65.3	72.6	65.8

* Means differences are significant at $\alpha = 0.05$

5. Conclusions and recommendations

5.1. Conclusions

5.1.1. Introduction:

In light of the findings presented in the previous chapter on the impact of intellectual capital on innovation in UNRWA- Gaza field office, the data collected and analyzed showed important results in each field of the study. Theses results and findings lead to various important conclusions as outlined below.

5.1.2. First: Intellectual capital concept conclusions:

1. The intellectual capital concept is updatable in relation to the accelerated changeable environment. This is why the intellectual capital is considered growing and developing under the intangible assets.
2. In-order to sustain the intellectual capital, it should be delivered and transferred to the newly recruited staff members.
3. Intellectual capital could effectively contribute towards minimizing operations cost.

5.1.3. Second: The empirical results conclusions:

I. Human capital conclusions:

1. The overall characteristics of UNRWA Human Capital at proportional weighted mean value 64.2%. This shows that UNRWA has acceptable level of learning and education as well as the experience and expertise; however, obvious weaknesses in the Innovation and creation field which represent the lowest proportional weighted mean value 60.4%.

2. UNRWA recruitment system as revealed through the analysis concentrates on attracting good level of education. UNRWA is also considered one of the organizations that take care of staff the training process and system.

3. UNRWS has a significant wealth in its staff members' educational level, experience and expertise in all the fields/areas.

4. One of the major concerns is that UNRWA managers have high level of accumulated experience that critically leads to high level of employee turnover, which negatively influences the work-flow and stability of the departments.

5. Another point of major concern is that UNRWA's top management does not pay enough attention to innovation and creativity, evident from all the indicators, which reveled that innovation and creativity are neglected in UNRWA's systems and strategies.

II. Structural capital conclusions:

6. The overall characteristics of UNRWA Structural Capital at proportional weighted mean value 56.9%. This shows that UNRWA has obvious weaknesses in its structural capital components especially its systems and programs, which represent the lowest proportional weighted mean value 55.1% in-order to improve the structural capital.

7. The survey also reflected a crucial concern, where UNRWA systems and programs are supercilious and are considered the main reason undermining the innovative and creative activities.

8. Research and Development (R&D) are totally neglected, especially the financial support. The survey showed that any innovative and creative activities are mainly due to individual efforts by the staff member or the program/department manager.

III. Relational capital conclusions:

9. The overall characteristics of UNRWA Relational Capital at proportional weighted mean value 65.5%. This shows that UNRWA has limited weaknesses in its relational capital components especially the Strategic alliances, licensing and agreements field which represent the lowest proportional weighted mean value 62.2%.

10. UNRWA has obvious weakness in the alliances and agreements with other organization and has isolated itself from the other community institutes despite its deployment/services covering all areas of Gaza Strip.

11. On the beneficiaries front, who form part of the local community, it was concluded from the survey that beneficiaries are not satisfied with UNRWA activities, which is mainly attributed to the cut backs in the services offered by UNRWA.

12. On the supply side, the supplying process is well managed at all levels and UNRWA has distinguished data bank about all its stakeholders.

IV. Overall conclusions:

13. The overall characteristics of UNRWA Intellectual Capital at proportional weighted mean value 62.8%. This shows that UNRWA needs to improve its intellectual capital in-order to accomplish the excellence in this new field.

14. UNRWA overall rank at proportional weighted mean value 65.8%. which indicate the UNRWA rank is moderate in should be improved in comparison with the other similar organizations in GAZA

15. UNRWA activities are mainly concentrated in two fields; relief and offering work opportunities to Palestinian refugees. The intellectual capital impact is more visible in the working field meanwhile it has no direct influence on the relief activities.

16. In Hypothesis number (1) which assumes that the Intellectual Capital is positively correlated to the innovation, the results showed that the significance value is 0.00 (<0.05) for all its variables, which indicate that there is a relationship between the Intellectual Capital and innovation. The results showed the following correlation values (0.793, .0.798, 0.677), which evidently indicates that the correlation is positive.

17. Hypothesis number (2), assumes that there is a significant difference among UNRWA managers regarding the Intellectual Capital and its Impact on the Innovation due the following variables:

    a. Job titles
    b. Managers grades
    c. Chain of supervision.

    It is concluded from the analysis of this hypothesis that there is a significant difference among UNRWA managers regarding the impact of intellectual capital on the innovation due to Job titles. The study also showed that Chief respondents have the highest mean among the other position categories.

    In the same context, it is concluded from the analysis of the hypothesis that there is a significant difference among UNRWA managers regarding the impact of intellectual capital on the innovation due to managers grades and showed that, Grade (20) respondents have the highest mean among the other grade categories, which entirely complies with the conclusion from the previous point

    For the last variable analysis in Hypothesis number (2), it is concluded that there is a significant difference among UNRWA managers regarding the impact of intellectual capital on the innovation due to the chain of supervision and showed that the class **20-39** respondents have the highest mean among the other number of supervised employees categories.

5.2. Recommendations

In light of the above conclusions, the researcher strongly recommends the following points, hoping that UNRWA top management positively considers them in its strategies and daily activities:

I. Human Capital

1. Regulate the recruitment procedures with at least three years stay for any new appointed manager in high posts to minimize staff turnover.
2. It is very important to fill the UNRWA vacancies with highly qualified candidates.
3. There is a need to follow strict procedures in the promotion of employees and senior staff.
4. There a need to conduct career and job rotations of highly skilled staff members.
5. UNRWA should depend on highly skilled and competent staff continuously.
6. In order to develop the innovation and creative activities, UNRWA organizational development process (OD) should take necessary actions to motivate its staff members to create new ideas, developing new system ..etc.

II. Structural Capital

7. Implementation of appropriate changes in the structure of the organization, culture and policies.
8. UNRWA should develop a motivation system to keep its human capital and transfer it to the new recruited staff.
9. UNRWA top management is recommended to show its support to R&D internally or externally, i.e. share in the annual budget.

III. Relational Capital

10. Create new department taking care of publics concerns, inquiries or any suspended issues. This proposed department could be UNRWA public services or community services department.

11. UNRWA is required to conclude an agreement with the local institutes to exchange and share its experience with other organizations.

IV. Overall Intellectual capital

12. In-order to promote the intellectual capital concept, it is imperative to educate senior staff members on the importance of measuring, managing and developing intellectual capital.

13. Link the performance appraisal with intellectual capital concept, in order to encourage the managers to develop human, system and network of relations.

14. Develop innovation indicators that are linked to UNRWA strategy and value creation taking into account that indicators should be measurable and manageable.

5.3. Recommended further studies:

This study is the first study conducted in the intellectual capital topic applied on non-profit international organization. Accordingly the researcher suggests the following research areas:

1. The impact of Intellectual Capital on organizational performance.
2. Increasing the Intellectual Capital in UNRWA: Examining the Role of Organizational Learning
3. Investment in the intellectual capital.
4. Link between innovation, intellectual capital and company performance

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7. Appendixes

7.1. Appendix (1): Questionnaire English version

No:

Islamic University – Gaza

Postgraduate Deanship

Commerce Faculty

Business Administration program

Dear Participant:

We highly appreciate your support for the research and development process through your effective participation in filling the proper answers for the below questions which represent the data collection stage of the study (Intellectual Capital and its Impact on the Innovation. Empirical study applied on the UNRWA Gaza field Office) A THESIS SUBMITTED TO THE ISLAMIC UNIVERSITY OF GAZA FOR THE DEGREE OF MASTER IN BUSINESS ADMINISTRATION MBA for the

Researcher:

Mohammed Al Agha

Gaza-May 2012

INTRODUCTION

Hello, you have been selected to complete a short Intellectual Assets questionnaire for your organisation provided by Intellectual capital.

Completion of this questionnaire will help me as researcher to collect the required data to complete my dissertation about **(Intellectual Capital and its Impact on the Innovation. Empirical study applied on the UNRWA Gaza field Office)** which will serve to give you some pointers to actions that you could take to extract greater value from your Intellectual Assets.

Please let us know at Intellectual capital if you do use the approach within your department as part of the UNRWA, and how you get on. We welcome any suggestions or evolution of the approach as it is road tested further. Thank you.

COMPLETING THE QUESTIONNAIRE

The questionnaire should take you no more than 30-45 minutes. Please fill your answers into the questionnaire, adding any comments you wish about particular issues or observations that you feel are particularly pertinent to UNRWA. Any answers you give will be confidential, and neither you nor UNRWA.

Questions answers should be in range of ten degrees as following:

	Answer	Description of the answer	
1.	1	**Fully disagree**	
2.	2		The agreement varying according to the participant viewpoint
3.	3		
4.	4		
5.	5		
6.	6		
7.	7		
8.	8		
9.	9		
10.	10	**Fully agree**	

No	Question	1	2	3	4	5
	Human Capital					
	learning and education					
1	The competence of UNRWA's employees as a whole is equal to the most ideal level (matching with their work requirements and responsibilities).					
2	The UNRWA gets the most out of its employees when they cooperate with one another in team tasks.					
3	UNRWA's employees undergo continuous training programs every year.					
4	UNRWA's employees continuously learn from others (colleagues and outsiders).					
5	The ratio of educated personnel is on average compared with industry (no. of PhD). Master and Bachelor degrees compared with what should her.					
6	UNRWA devotes a lot of time and effort to update and develops employee's knowledge and skills.					
7	UNRWA's services have been continually improving over the past few years.					
8	Employees learning and education affect UNRWA's productivity.					
	Experience and expertise					
9	UNRWA's employees are experts in their respective areas					
10	UNRWA's employees consistently perform at their best.					
11	UNRWA's employees have worked for many years in the firm (employee turnover is very low).					
12	The UNRWA prides itself on being efficient.					
13	The staff is highly professional.					
14	The UNRWA has the lowest costs per transaction of any in the comparison with other international organizations					
15	Employees' experience and expertise affect UNRWA's productivity.					

No	Question	1	2	3	4	5
	Innovation and creation					
16	UNRWA's employees are considered creative and bright compared with other international organizations					
17	UNRWA's employees are keen to voice their opinions in group discussions.					
18	UNRWA's employees usually come up with new ideas.					
19	Large numbers of new ideas are launched compared with competitors.					
20	UNRWA's employees are continuously encouraged to bring new knowledge and ideas to the business and share their knowledge with their colleagues.					
21	UNRWA systems support staff innovation					
22	UNRWA's employees are satisfied with their UNRWA's innovation policies and programs.					
23	UNRWA's employees are highly motivated and committed to share new great ideas within the UNRWA as should be.					
24	Employees' innovation and creation affect UNRWA's value in the relevant market					
	Structural Capital					
	Systems and programs					
1	The UNRWA has succession training programs for each and every post position (major positions).					
2	The UNRWA's culture and atmosphere are supportive and comfortable.					
3	The UNRWA's recruitment programs are comprehensive and dedicated to hiring the best candidates available.					
4	The UNRWA has a well developed reward system related to performance.					
5	The UNRWA supports its systems according to the international standards.					
6	Staff have sufficient influence over decisions make within the UNRWA					
7	The UNRWA is not a bureaucratic nightmare.					
8	UNRWA's systems and programs affect UNRWA's value in the relevant market					

No	Question	1	2	3	4	5
	Research & Development (R & D).					
9	The UNRWA is considered a research leader					
10	The UNRWA continuously develops work processes.					
11	The UNRWA continuously develops and re-organizes itself based on R & D ie.g. Structure and responsibilities.					
12	The systems and procedures of the UNRWA support innovation.					
13	The UNRWA determines appropriate and adequate budget for R& D.					
14	The UNRWA's board of management highly trust and support the R&D department.					
15	UNRWA's R&D affects UNRWA's value in the relevant market					
	Relational Capital					
	Strategic alliances, licensing and agreements					
1	The UNRWA is currently working on joint projects with many other organizations.					
2	The UNRWA has diverse distribution channels.					
3	High ratio of UNRWA's business is done with strategic alliances.					
4	People from outside the UNRWA are consulted when decisions are made within the UNRWA.					
5	The UNRWA is able to learn and add value through its partners.					
6	The UNRWA prides itself on being partnership oriented.					
7	UNRWA's strategic alliances affect UNRWA's value in the relevant market					
	Customer and Supplier relations					
8	A poll of UNRWA's customers shows them to be loyal to the UNRWA and would indicate that they are generally satisfied.					
9	The UNRWA devotes considerable time to select suppliers.					
10	The UNRWA maintains a long-standing relationship with suppliers.					

No	Question	1	2	3	4	5
11	The UNRWA has greatly reduced the time it takes to resolve a customer's problem.					
12	The UNRWA feels confident that their customers will continue to do business with it.					
13	UNRWA's relationship with customer and supplier affects UNRWA's value in the relevant market					
	Customer Knowledge					
14	It is important for the UNRWA to share knowledge with its partners.					
15	The UNRWA gets as much feedback out of customers as it possibly can under different circumstances.					
16	UNRWA continuously got data about partners to improve its operations					
17	Data about customers are continuously updated.					
18	The UNRWA has relatively complete data about the suppliers.					
19	The UNRWA continually meets with target groups to find out what they want from it.					
20	The UNRWA has a useful and updated information system in use.					
How do you rank your UNRWA compared to the professional local environment:						
1	Industry leadership.					
2	Future outlook.					
3	Overall response to refugees needs.					
4	Success rate in new services and systems launches.					
5	Overall business performance and success.					
6	Service growth.					

Please complete this section of the survey:

Your Position (Title):	
Grade:	
Number of Employees under your supervision	

7.2. Appendix (2): Questionnaire Arabic version

رقم:

الجامعة الإســـلامية – غزة

عمادة الدراسات العليا

كليـــــــــة التجـــارة

قسم إدارة الأعمـــــال

عزيزي المشارك:

يرجى تعبئة الاستبانة التالية والتي تمثل مرحلة جمع البيانات لدراسة بعنوان (رأس المال الفكري وأثره على الإبداع – دراسة ميدانية تطبيقية على الأونروا – مكتب غزة الإقليمي) كمتطلب للحصول على درجة ماجستير في إدارة الأعمال من الجامعة الاسلامية – غزة.

لقد تم اختيارك لتعبئة الاستبانة عن الأصول الفكرية للمؤسسة التي يوفرها رأس المال الفكري بناء على العينة التى اختارها الباحث بعد الحصول على الموافقة الرسمية المكتوبة من قبل إدارة الأونروا لإجراء الدراسة كدراسة حالة تطبيقية على الأونروا كأحد المؤسسات الرائدة في قطاع غزة.

<u>مـلاحظا ت:</u>

1. تم اختيارك لتعبئة هذه الاستبانة بناء على عينة الدراسة
2. بيانات هذه الاستبانة ستستخدم لأغراض البحث العلمي فقط
3. لقد تم الحصول على اذن رسمي من ادارة الأونروا لإجراء هذه الدراسة.
4. الرجاء التعبير عن وجهة نظرك على مقياس من 1 الى 10

الباحث:

محمد مروان الأغا

مايو 2012

غــزة

تتقسم احتمالات اجابات بنود الاستبانة الى عشر درجات تتدرج من 1 (لا أوافق بشدة) الى 10 (أوافق بشدة) كما هو موضح في الجدول التالي:

الإجابة	وصف الإجابة	
.1	لا أوافق بشدة	
.2		تفاوت درجات الموافقة حسب وجهة نظر المشارك
.3		
.4		
.5		
.6		
.7		
.8		
.9		
.10	أوافق بشدة	

من وجهة نظرك حدد/ي مدى اتفاقك مع البنود التالية حسب المقياس الموضح في الاستبانة التالية:

رقم	البند	لا أوافق بشدة									أوافق بشدة
		1	2	3	4	5	6	7	8	9	10
.1	**رأس المال البشري (Human Capital)**										
1.1.	**التعليم والتعلم (بناء القدرات)**										
1.1.1.	يتمتع العاملون في الأونروا بقدرات تتناسب مع متتطلبات العمل.										
1.1.2.	استخدام فرق العمل في إنجاز المهام يحقق نتائج أفضل في دائرتك.										
1.1.3.	تجري عملية تحديد الاحتياجات التدريبية بشكل مستمر في الاونروا.										
1.1.4.	يتبادل العاملون تحت إشرافك الخبرات عبر لقاءات دورية.										
1.1.5.	يمتلك الموظفون تحت إشرافك بشهادات أكاديمية (بكالوريوس، ماجستير، دكتوراة).										
1.1.6.	تكرس الأونروا الوقت والجهد لتطوير قدرات موظفيها.										
1.1.7.	أنت راضٍ عن مستوى جودة الخدمات التي تقدمها الأونروا للجمهور عبر دائرتك.										
1.1.8.	أنشطة التعليم و التعلم (بناء القدرات) التي يتلقاها موظفو الأونروا تؤثر إيجابًا على أداء المؤسسة.										

رقم	البند	لا أوافق بشدة								أوافق بشدة	
		1	2	3	4	5	6	7	8	9	10
1.2.	**التجارب و الخبرات**										
1.2.1.	يعتبر موظفو دائرتك (من درجة 14 إلى 20) خبراء كل في مجال لختصاصه.										
1.2.2.	يبذل موظفو دائرتك (من درجة 14 إلى 20) أقصى قدراتهم لإنجاز المهام باستمرا.										
1.2.3.	معدل دوران العاملين (Employee turnover) بين موظفي الأونروا منخفض.										
1.2.4.	مدى فخرك بتميز مستوى أداء الموظفين في دائرتك.										
1.2.5.	يتمتع موظفو دائرتك بمهنية عالية.										
1.2.6.	تعتبر الوكالة من أفضل المنظمات الدولية في ترشيد نفقاتها.										
1.2.7.	خبرة موظفي الأونروا تؤثر إيجابًا على أداء المنظمة.										
1.3.	**ادارة الابداع**										
1.3.1.	يعتبر موظفو دائرتك مبدعون بالمقارنة بالمنظمات التي تعمل في نفس النطاق.										
1.3.2.	يحرص العاملون في الأونروا على التعبير عن آرائهم في الاجتماعات واللقاءات.										
1.3.3.	يحرص موظفو الأونروا على طرح أفكار جديدة في العمل.										
1.3.4.	لقد تم طرح كم من الأفكار الجديدة في العمل خلال الفترة السابقة.										
1.3.5.	تشجع الاونروا الموظفين على تقديم الأفكار الجديدة.										
1.3.6.	الأنظمة الداخلية و الإجراءات التي تتبعها الأونروا تشجع الأنشطة الإبداعية.										
1.3.7.	موظفو الأونروا راضون عن سياسات دعم الإبداع.										
1.3.8.	لدى موظفي الأونروا الحافز والالتزام الدائم في تقديم أفكار جديدة.										
1.3.9.	الأداء الإبداعي موظفي الأونروا يؤثر إيجابًا على أداء المنظمة ككل.										
2.	**رأس المال الهيكلي (Structural Capital)**										
2.1.	**النظم والإجراءات و البرامج**										
2.1.1.	تعمل الأونروا على إعداد صف بديل لملء أي شاغر في الوظائف العليا.										
2.1.2.	بيئة العمل في الأونروا داعمة للإنجاز.										
2.1.3.	برامج التوظيف في الأونروا موضوعية وتساعد في اختيار أفضل الكفاءات.										
2.1.4.	تتمتع الأونروا بنظام حوافز متطور مرتبط بالأداء.										
2.1.5.	تطور الأونروا نظمها وفق المعايير العالمية.										
2.1.6.	تؤثر وجهات نظر موظفي الأونروا بشكل واضح على قرارتها.										
2.1.7.	تتصف إجراءات أداء العمل في الأنروا بالسلاسة.										
2.1.8.	أنظمة العمل الحالية في الأونروا تؤثر إيجابًا على أداء المنظمة ككل.										

رقم	البند	لا أوافق بشدة									أوافق بشدة
		1	2	3	4	5	6	7	8	9	10
2.2.	**البحث والتطوير**										
2.2.1.	تعتبر الأونروا رائدة في مجال البحث والتطوير.										
2.2.2.	تطور الأونروا إجراءات تقديم الخدمة باستمرار.										
2.2.3.	تطور الأونروا أنظمتها وهياكلها باستمرار بناء على دراسات علمية.										
2.2.4.	تستخدم الأونروا أحدث الأساليب العلمية والتقنية في أداء عملها.										
2.2.5.	تخصص الأونروا موازنات سنوية خاصة لدعم إعداد البحوث.										
2.2.6.	تدعم الإدارة العليا للأونروا برنامج البحث والتطوير.										
2.2.7.	نظام الأبحاث و الدراسات التطويرية في الأونروا يؤثر إيجابًا على أداء المنظمة ككل.										
3.	**رأس مال العلاقات (Relational Capital)**										
3.1.	**إدارة الشراكات و التحالفات و الاتفاقيات**										
3.1.1.	تنجز الأونروا الكثير من مشاريعها عبر شراكات مع مؤسسات أخرى.										
3.1.2.	تستخدم الأونروا قنوات توزيع متنوعة في تقديم خدماتها.										
3.1.3.	تنفذ الأونروا الكثير من أعمالها من خلال تحالفات استراتيجية دائمة.										
3.1.4.	تستعين الأونروا باستشارات خارجية عند اتخاذ القرارات المهمة.										
3.1.5.	تضيف الأونروا قيمة واضحة في أدائها من خلال الشراكات.										
3.1.6.	تفتخر الأونروا بشراكاتها وتحالفاتها مع المؤسسات والجهات الأخرى.										
3.1.7.	شراكات الأونروا تؤثر إيجابًا على أداء المنظمة ككل.										
3.2.	**العلاقات مع الممولين و الموردين و الفئات المستهدفة**										
3.2.1.	الفئة المستهدفة راضية عن أداء الأونروا في تقديم خدماتها.										
3.2.2.	من وجهة نظرك تختار الأونروا أفضل الموردين										
3.2.3.	تحافظ الأونروا على استمرار علاقات متميزة مع الموردين										
3.2.4.	تعالج الأونروا باستمرار شكاوى الفئات المستهدفة										
3.2.5.	تتمتع الأونروا بثقة الممولين في أدائها										
3.2.6.	علاقات الأونروا بقطاعات الممولين و الموردين و الفئات المستهدفة تؤثر إيجابًا على أداء المنظمة ككل.										
3.3.	**معلومات الشركاء وذوي العلاقة**										
3.3.1.	تهتم الأونروا بتبادل المعلومات مع شركائها										
3.3.2.	تولي الأنروا اهتماماً عالياً بالتغذية الراجعة من الفئات المستهدفة.										
3.3.3.	توفر إدارة الأونروا المعلومات عن شركائها للمساعدة في تحسين عملياتها										
3.3.4.	تقوم إدارة الأونروا بتحديث بيانات الفئات المستهدفة بشكل متواصل.										
3.3.5.	لدى الأونروا معلومات تساعد على المتابعة والتواصل مع الموردين.										
3.3.6.	تقوم الأونروا بالتواصل مع فئاتها المستهدفة للتعرف على احتياجاتهم.										
3.3.7.	تستخدم الأونروا نظم معلومات متطورة و محدثة بشكل دائم										

رقم	البند	لا أوافق بشدة								أوافق بشدة	
		1	2	3	4	5	6	7	8	9	10
4.	**برأيك ماذا تصنف الأونروا بين المنظمات و المؤسسات التي تعمل في نفس بيئة العمل**										
4.1.1.	رائدة في مجال عملها و نظمها الداخلية.										
4.1.2.	لها مستقبل واعد و مشرق.										
4.1.3.	لديها استجابة شاملة و مباشرة لاحتياجات اللاجئين.										
4.1.4.	متفوقة في إضافة الخدمات والأنظمة الجديدة.										
4.1.5.	متفوقة في أدائها و نجاحاتها.										
4.1.6.	تعمل على تطوير خدماتها.										

يرجى تعبئة المعلومات التالية (اختياري):

1	**المسمى الوظيفي**	
2	**الدرجة**	
3	**عدد العاملين تحت إشرافك**	

تفضلوا بقبول فائق الاحترام و التقدير

7.3. Appendix (3)

QUESTIONNAIRE VALIDITY REFEREES

	Referred name	Title	Work place
1.	Dr. Mohammed Al Aydi	Khan Younis chief area	UNRWA
2.	Dr. Nehaya Telbani	Dean of Quality assurance program	Al Azhar University
3.	Dr. Ghassan Abu-Orf	Principal of Khan Younis training college	UNRWA
4.	Dr. Sameer Safi	Head of statistics department	Islamic University
5.	Mr. Nabel Salha	Research and development expert	GTC- UNRWA

7.4. Appendix (4)

(Official research consent to conduct the study in the UNRWA)

بسم الله الرحمن الرحيم

الجامعة الإسلامية – غزة
The Islamic University - Gaza

Faculty of Commerce
كلية التجارة

ج س ع/62
الرقم 13 جمادى الأولى 1432 Ref
التاريخ 2011/04/16 Date

لمن يهمه الأمر

الموضوع: تسهيل مهمة الباحث/محمد مروان الأغا.

تهديكم كلية التجارة بالجامعة الإسلامية تحياتها، وترجو التكرم بمساعدة الطالب/ محمد مروان الأغا، ويحمل رقم جامعي (120052538)، والملتحق في برنامج ماجستير إدارة الأعمال في توزيع الاستبيانات التي تساعده في عمل بحث الماجستير بعنوان:

(أثر رأس المال الفكري على الإبداع التنظيمي لدى العاملين في الأونروا – إقليم غزة).

وفى ذلك خدمة للبحث العلمي ودعماً لعملية التنمية الاقتصادية في فلسطين.

وتقبلوا فائق الاحترام والتقدير،،،

عميد كلية التجارة

أ.د. ماجد محمد الفرا

صورة إلى:
*الملف.

ص.ب 108 الرمال غزة فلسطين هاتف Tel: +970 (8) 286 0700 فاكس Fax: +970 (8) 286 0800
P.O. Box 108, Rimal, Gaza, Palestine
public@iugaza.edu.ps www.iugaza.edu.ps

7.5. Appendix (5)

(Initial interview concept paper)

- **Intellectual capital definition:**

Collective knowledge (whether or not documented) of the individuals in an organization or society. This knowledge can be used to produce wealth, multiply output of physical assets, gain competitive advantage, and/or to enhance value of other types of capital. Intellectual capital is now beginning to be classified as a true capital cost because (1) investment in (and replacement of) people tantamount to investment in machines and plants, and (2) expenses incurred in education and training (to maintain the shelf life of intellectual assets) are equivalent to depreciation costs of physical assets. Intellectual capital includes customer capital, human capital, intellectual property, and structural capital.

- **Thesis Title:**

Intellectual Capital and its Impact on the Innovation, Empirical study applied on the UNRWA Gaza field Office

- **Interview aim:**

The interview aims at defining the criteria in identifying the study population within UNRWA staff members. In other words answering the following question:

Who are the Intellectual capital staff members in UNRWA?

The possible answers could be one or a combination of the following criterion:

1. Employee grade (according to UNRWA grading system)
2. Qualifications, certificates and advanced degree.
3. Authorities, privileges, duties and responsibilities as well as their importance.
4. The significance of the post in the development process
5. The top management's point of view of the post itself.
6. Scarcity of candidate specialization and experience.
7. Any other suggested criteria.

7.6. Appendix (6)

(Intellectual capital measurement methods)

	Approx. year	Label	Major Proponent	Category	Description of Measure
1.	2009	ICU Report	Sanchez 2009	SC	ICU is a result of an EU-funded project to design an IC report specifically for universities. Contains three parts: (1) Vision of the institution, (2) Summary of intangible resources and activities,(3) System of indicators.
2.	2008	EVVICAE™	McMcCutcheon (2008)	DIC	Developed by the Intellectual Assets Centre in Scotland as a web-based EVVICAE toolkit based on the work of Patrick H. Sullivan (1995/2000).
3.	2008	Regional Intellectual Capital Index (RICI)	Schiuma, Lerro, Carlucci (2008)	SC	Uses the concept of the Knoware Tree with four perspectives: (hardware, netware, wetware, software) to create a set of inidicators for regions.
4.	2007	Dynamic monetary model	Milost (2007)	DIC	The evaluation of employees is done with analogy from to the evaluation of tangible fixed assets. The value of an employee is the sum of the employee's purchase value and the value ofinvestments in an employee, less the value adjustment of an employee.
5.	2004	IAbM	Japanese Ministry of Economy, Trade and Industry.	SC	Intellectual asset-based management (IAbM) is a guideline for IC reporting introduced by the Japanese Ministry of Economy, Trade and Industry. An IAbM report should contain: (1) Management philosophy. (2) Past to present report. (3) Present to future. (4) Intellectual-asset indicators. The design of indicators largely follows the MERITUM guidelines. Described in Johanson & al. (2009)

	Approx. year	Label	Major Proponent	Category	Description of Measure
6.	2004	SICAP		SC	An EU funded project to develop a general IC model specially designed for public administrations and a technological platform to facilitate efficient management of the public services. The model structure identifies three main components of intellectual capital: public human capital, public structural capital and public relational capital. Described in Ramirez Y. (2010)
7.	2004	National Intellectual Capital Index	Bontis (2004)	SC	A modified version of the Skandia Navigator for nations: National Wealth is comprised by Financial Wealth and Intellectual Capital (Human Capital + Structural Capital)
8.	2004	Topplinjen/ Business IQ	Sandvik (2004)	SC	A combination of four indices; Identity Index, Human Capital Index, Knowledge Capital Index, Reputation Index. Developed in Norway by consulting firm Humankapitalgruppen. http://www.humankapitalgruppen.no
9.	2003	Public sector IC	Bossi (2003)	SC	An IC model for public sector, which builds on Garcia (2001) and adds two perspectives to the traditional three of particular importance for public administration: transparency and quality. It also identifies negative elements, which generate intellectual liability. The concept of intellectual liability represents the space between ideal management and real management, one ofthe duties a public entity must fulfill for society . Described in Ramirez Y. (2010)
10.	2003	Danish guidelines	Mouritzen, Bukh & al. (2003)	SC	A recommendation by government-sponsored research project for how Danish firms should report their intangibles publicly. Intellectual capital statements consist of 1) a knowledge narrative, 2) a set of management challenges, 3) a number of initiatives and 4) relevant indicators. http://en.vtu.dk/publications/2003/intellectual-capital-statements-the-new-guideline
11.	2003	IC-dVAL™	Bonfour (2003)	SC	"Dynamic Valuation of Intellectual Capital". Indicators from four

	Approx. year	Label	Major Proponent	Category	Description of Measure
					dimensions of competitiveness are computed: Resources & Competencies, Processes, Outputs and Intangible Assets (Structural Capital and Human Capital indices). Journal of IC vol 4 Iss 3 2003
12.	2002	Intellectus model	Sanchez-Canizares (2007)	SC	Intellectus Knowledge Forum of Central Investigation on the Society of Knowledge. The model is structured into 7 components, each with elements and variables. Structural capital is divided in organizational capital and technological capital. Relational capital is divided in business capital and social capital.
13.	2002	FiMIAM	Rodov & Leliaert (2002)	DIC/MCM	Assesses monetary values of IC components. a combination both tangible and Intangible assets measurement. The method seeks to link the IC value to market valuation over and above book value. Journal of IC vol 3 Iss 3 2002
14.	2002	IC Rating™	Edvinsson (2002)	SC	An extension of the Skandia Navigator framework incorporating ideas from the Intangible Assets Monitor; rating efficiency, renewal and risk. Applied in consulting http://www.icrating.com/
15.	2002	Value Chain Scoreboard™	Lev B. (2002)	SC	A matrix of non-financial indicators arranged in three categories according to the cycle of development: Discovery/Learning, Implementation, Commercialization. Described in book Lev (2005): Intangibles: Management, Measurement and Reporting.
16.	2002	Meritum guidelines	Meritum Guidelines (2002)	SC	An EU-sponsored research project, which yielded a framework for management and disclosure of Intangible Assets in 3 steps: 1) define strategic objectives, 2) identify the intangible resources, 3) actions to develop intangible resources. Three classes of intangibles: Human Capital, Structural Capital and Relationship Capital. The original Meritum final report can be found here. Meritum is also further developed by members of E*KNOW-NET. A summary is found on P.N Bukh's home page.
17.	2001		Caba & Sierra (2001)	SC	An IC measuring model for public sector based on the European Foundation Quality Management Model (EFQM). It integrates the

	Approx. year	Label	Major Proponent	Category	Description of Measure
					elements from the EFQM model in three blocks which compose intellectual capital: human capital, structural capital and relational capital. Described in Ramirez Y. (2010)
18.	2001	Intangible assets statement	Garcia (2001)	SC	An IC measuring model for public sector based on the IAM with Indicators of: growth/renovation efficiency and stability.
19.	2001	Knowledge Audit Cycle	Schiuma & Marr (2001)	SC	A method for assessing six knowledge dimensions of an organisation's capabilities in four steps. 1) Define key knowledge assets. 2) Identify key knowledge processes. 3) Plan actions on knowledge processes. 4) Implement and monitor improvement, then return to 1). Described in book (2002). Profit with People by Deloitte & Touche. Hard to find. Try Giovanni Schiuma's homepage.
20.	2000	Value Creation Index (VCI)	Baum, Ittner, Larcker, Low, Siesfeld, and Malone (2000)	SC	Developed by Wharton Business School, together with Cap Gemini Ernst & Young Center for Business Innovation and Forbes. They estimate the importance of different nonfinancial metrics in explaining the market value of companies. Different factors for different industries. The VCI developers claim to focus on the factors that markets consider important rather than on what managers say is important. http://www.forbes.com/asap/2000/0403/140.html
21.	2000	The Value Explorer™	Andriessen & Tiessen (2000)	DIC	Accounting methodology proposed by KMPG for calculating and allocating value to 5 types of intangibles: (1) Assets and endowments, (2) Skills & tacit knowledge, (3) Collective values and norms, (4) Technology and explicit knowledge, (5) Primary and management processes. Described in Journal of IC 2000. http://www.weightlesswealth.com/downloads/Implementing%20the%20value%20explorer.PDF
22.	2000	Intellectual Asset Valuation	Sullivan (2000)	DIC	Methodology for assessing the value of Intellectual Property.

	Approx. year	Label	Major Proponent	Category	Description of Measure
23.	2000	Total Value Creation, TVC™	Anderson & McLean (2000)	DIC	A project initiated by the Canadian Institute of Chartered Accountants. TVC uses discounted projected cash-flows to re-examine how events affect planned activities. http://www.cica.ca/about-the-profession/cica/annual-reports/item21582.pdf
24.	1999	Knowledge Capital Earnings	Lev (1999)	ROA	Knowledge Capital Earnings are calculated as the portion of normalised earnings (3 years industry average and consensus analyst future estimates) over and above earnings attributable to book assets. Earnings then used to capitalise Knowledge Capital. Baruch Lev's home page
25.	1998	Inclusive Valuation Methodology (IVM)	McPherson (1998)	DIC	Uses hierarchies of weighted indicators that are combined, and focuses on relative rather than absolute values. Combined Value Added = Monetary Value Added combined with Intangible Value Added.
26.	1998	Accounting for the Future (AFTF)	Nash H. (1998)	DIC	A system of projected discounted cash-flows. The difference between AFTF value at the end and the beginning of the period is the value added during the period. http://home.sprintmail.com/~humphreynash/future_of_accounting.htm
27.	1998	Investor assigned market value (IAMV™)	Standfield (1998)	MCM	Takes the Company's True Value to be its stock market value and divides it in Tangible Capital + (Realised IC + IC Erosion + SCA (Sustainable Competitive Advantage).
28.	1997	Calculated Intangible Value	Stewart (1997)	MCM	The value of intellectual capital is considered to be the difference between the firm's stock market value and the company's book value. The method is based on the assumption that a company's premium earnings, i.e. the earnings greater than those of an average company within the industry, result from the company's IC. It is hence a forerunner of Lev's Knowledge Capital model. Kujansivu & Lönnqvist (2007) gives a good example of the calculation.
29.	1997	Economic	Stern & Stewart	ROA	Calculated by adjusting the firm's disclosed profit with charges related to

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		Value Added (EVA™)	1997		intangibles. Changes in EVA provide an indication of whether the firm's intellectual capital is productive or not. EVA is the property of the consulting firm Sternstewart and one of the most common methods. http://www.sternstewart.com/?content=proprietary&p=eva A good evaluation of the method is found here: http://lipas.uwasa.fi/~ts/eva/eva.html
30.	1997	Value Added Intellectual Coefficient (VAIC™)	Pulic (1997)	ROA (doesn't quite fit any of the categories	An equation that measures how much and how efficiently intellectual capital and capital employed create value based on the relationship to three major components: (1) capital employed; (2) human capital; and (3) structural capital. VAIC™i = CEEi + HCEi + SCEi http://www.vaic-on.net/start.htm
31.	1997	IC-Index™	Roos, Roos, Dragonetti & Edvinsson (1997)	SC	Consolidates all individual indicators representing intellectual properties and components into a single index. Changes in the index are then related to changes in the firm's market valuation.
32.	1996	Technology Broker	Brooking (1996)	DIC	Value of intellectual capital of a firm is assessed based on diagnostic analysis of a firm's response to twenty questions covering four major components of intellectual capital: Human-centred Assets, Intellectual Property Assets, Market Assets, Infrastructure Assets.
33.	1996	Citation-Weighted Patents	Dow Chemical (1996)	DIC	A technology factor is calculated based on the patents developed by a firm. Intellectual capital and its performance is measured based on the impact of research development efforts on a series of indices, such as number of patents and cost of patents to sales turnover, that describe the firm's patents. The approach was developed by Dow Chemical and is described by Bontis (2001).
34.	1995	Holistic Accounts	Rambøll Group	SC	Rambøll is a Danish consulting group, which since 1995 reports according to its own 'Holistic Accounting" report. It is based on the EFQM Business Excellence model www.efqm.org . Describes nine key areas with indicators: Values and management, Strategic processes,

	Approx. year	Label	Major Proponent	Category	Description of Measure
					Human Resources, Structural Resources, Consultancy, Customer Results, Employee Results, Society Results and Financial Results. Their report can be downloaded from www.ramboll.com
35.	1994	Skandia Navigator™	Edvinsson and Malone (1997)	SC	Intellectual capital is measured through the analysis of up to 164 metric measures (91 intellectually based and 73 traditional metrics) that cover five components: (1) financial; (2) customer; (3) process; (4) renewal and development; and (5) human. Skandia insurance company brought it to fame, but Skandia no longer produces the report.
36.	1994	Intangible Asset Monitor	Sveiby (1997)	SC	Management selects indicators, based on the strategic objectives of the firm, to measure four aspects of creating value from 3 classes of intangible assets labelled: People's competence, Internal Structure, External Structure. Value Creation modes are: (1) growth (2) renewal; (3) utilisation/efficiency; and (4) risk reduction/stability. http://www.sveiby.com/articles/companymonitor.html
37.	1992	Balanced Score Card	Kaplan and Norton (1992)	SC	A company's performance is measured by indicators covering four major focus perspectives: (1) financial perspective; (2) customer perspective; (3) internal process perspective; and (4) learning perspective. The indicators are based on the strategic objectives of the firm. http://www.balancedscorecard.org/
38.	1990	HR statement	Ahonen (1998)	DIC	A management application of HRCA widespread in Finland. The HR profit and loss account divides personnel related costs into three classes for the human resource costs: renewal costs, development costs, and exhaustion costs. 150 listed Finnish companies prepared an HR statement in 1999.

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39.	1989	The Invisible Balance Sheet	Sveiby (ed. 1989) The ”Konrad” group	MCM	The difference between the stock market value of a firm and its net book value is explained by three interrelated “families” of capital; Human Capital, Organisational Capital and Customer Capital. The three categories first published in this book in Swedish have become a de facto standard. Download English translation of book here. Download article The Invisible Balance Sheet.
40.	1988	Human Resource Costing & Accounting (HRCA 2)	Johansson (1996)	DIC	Calculates the hidden impact of HR related costs which reduce a firm’s profits. Adjustments are made to the P&L. Intellectual capital is measured by calculation of the contribution of human assets held by the company divided by capitalised salary expenditures. Has become a research field in its own right. HRCA journal.
41.	1970’s	Human Resource Costing & Accounting (HRCA 1)	Flamholtz (1985)	DIC	The pioneer in HR accounting, Eric Flamholtz, has developed a number of methods for calculating the value of human resources. Several papers are available for download on his home page. http://www.harrt.ucla.edu/faculty/bios/flamholtz.html
42.	1950’s	Tobin’s q	Tobin James	MCM	The "q" is the ratio of the stock market value of the firm divided by the replacement cost of its assets. Changes in “q” provide a proxy for measuring effective performance or not of a firm’s intellectual capital. Developed by the Nobel Laureate economist James Tobin in the 1950’s. http://en.wikipedia.org/wiki/Tobin's-q