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the Role of Information and Communication Technology (ICT) in Knowledge Management (KM) - Case Study : "ECDE"

دور تكنولوجيا المعلومات والاتصال(ICT) في إدارة المعرفة(KM) دراسة الحالة"ECDE" :

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Abstract

The main purpose of this study is to find out the relationship between information and communication technology (ICT) and knowledge management (KM). In order to achieve this objective and test the hypotheses, "ECDE" company was selected as a case study. The researchers used the analytical descriptive method to deal with data collection. A survey study was conducted by distributing on a convenient sample of 100 Respondents. and after the statistical analysis of data collected through the use of the spss, The most important result concluded that there is a significant impact at the 0.05 level of the ICT on Knowledge management at "ECDE "Company.

Keywords: Knowledge management, Knowledge creation, Knowledge transfer, Knowledge storage, ICT.

ملخص:

إن الهدف الرئيسي لهذه الدراسة هو معرفة العلاقة بين تكنولوجيا المعلومات والاتصالات (ICT) وإدارة المعرفة (KM)، ولتحقيق أهداف الدراسة واختبار فرضيتها فقد تم اختيار مؤسسة "ECDE" كدراسة حالة، حيث استخدم الباحث المنهج الوصفي التحليلي للتعامل مع بيانات الدراسة، كما اعتمد أيضا على الاستبانة في جمع البيانات المتعلقة بمتغيراتها، والتي وزعت على عينة مكونة من 100 مفردة. وبعد التحليل الإحصائي للبيانات المجمعة عن طريق استخدام برنامج الحزمة الاحصائية للعلوم الاجتماعية(spss)، توصلت الدراسة إلى مجموعة من النتائج، أبرزها وجود تأثير عند مستوى المعنوية 0.05 لتكنولوجيا المعلومات والاتصال على إدارة المعرفة بمؤسسة "ECDE".

كلمات مفتاحية: إدارة المعرفة، توليد المعرفة، نشر المعرفة، تخزين المعرفة، تكنولوجيا المعلومات والاتصالات.

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1. Introduction :

Nowadays, companies compete in a complex and dynamic environment. For company to remain competitive in the global environment, it must evolve an effective knowledge management system for it to be able to achieve its goals on the long run. Knowledge is the fundamental basis of competition1. Knowledge Management has emerged as a discrete area in recent years. It is one of the most important driving forces for business success. KM is recognized as an important key for sustaining competitive advantage and improving performance, so it is a new way of thinking about company and sharing the creative and intellectual resources of the company. According to (Santosirs & Surmacz, 2000) KM is the process of transforming information and intellectual assets into enduring value2, KM contribute to the response to the variables of the surrounding environment, saving time and effort, achieve competitive advantage, increase productivity and reduce costs .On the other hand, and according to the rapid changes in the business environment, Information and Communication Technology (ICT) represent an opportunity to improving the competitive advantage, especially, by a combination of knowledge management components, and building capacity within firm. When information and Knowledge is creation, identification, organization, transfer and use the expertise, this is a serious management challenges. Knowledge and information are interconnected. This form is the basis of competition in the new world.

ICT and KM are poised to become two major commodities in the word competition. According to the importance of both ICT and KM in the company, and in light of what has been seen from previous empirical studies, the researcher identifies the problem of the study in the following question:

What is the impact of the information and communication technology on the knowledge management at "ECDE "company?

- Importance (value) of study: By answering the research questions, we expect that this study makes several significant contributions to both the ICT and KM literature. In addition, the importance of research stems from the importance of recognizing the impact of the ICT on KM for successful Company, this research is also an indicator to assist mangers of "ECDE "in making key decisions about the ICT and knowledge management.

- Research objective: The objective of the research is specifically focused on the following:

  - To identify the Key Enablers for Implementation of KM in companies;
  - To examine the role of ICT in Knowledge Management processes;
  - To present a set of recommendations to "ECDE "company

2. Literature review

2.1 knowledge management

Knowledge management has been the topic of discussion since the last few decades. It helps organizations to find, select, organize, distribute, and transfer vital information through a successful knowledge management (KM) companies improve their effectiveness and gain competitive advantage[3]. KM has been defined in different ways in scientific literature. (Alavi and Leidner, 2001) provide a review and interpretation of knowledge management literatures in different fields,

presenting a detailed process view of organizational knowledge management with a focus on the potential role of information technology in this process[4]. (Gupta et al, 2000) defined KM as "a process that helps organizations to find, select, organize, disseminate, and transfer important information and expertise necessary for activities. KM also can be defined as a framework for designing a [5]" company's strategy, structures, and processes so that the company can use what it knows to learn and to create economic and social value for its customers and community[6]. According to (Branislav, 2017), KM could be defined as the "explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. Bounfour [7]" (2003) sees KM as a set of procedures, infrastructures, and technical and managerial tools, designed to create, share and leverage information and knowledge within and around companies[8]. In the same context, Knowledge management is the process of continually managing knowledge of all kinds to meet existing and emerging needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities[9].

In the conceptual framework of this work, KM is composed of three main processes, which are namely: knowledge creation, knowledge transfer, and knowledge codification and storage.

- Knowledge creation (generation /acquisition) is the first step in Knowledge Management process. In this stage, knowledge is created and discovery by knowledge-based staff through daily activities. The knowledge creation process involves the searching of new implemented knowledge and information, both indoor and outdoor of the companies that developed through collaboration and partnership[10]; this involves knowledge addition, replacement, or correction of existing knowledge. A knowledge-creating company, consistently creates new business knowledge, disseminates it throughout the company, and builds in the new knowledge into its products and services[11]. Knowledge creation also can be defined as the process by which the firm obtains knowledge, either from outside the company or generated internally. The objective is to obtain new and better knowledge that helps the company improve its competitiveness. Companies can acquire knowledge externally from different sources, for example talking to external agents, collaborators and partners, buying patents or taking on new employees. Internally, knowledge creation can involve developing new contents or replacing existing contents by investing in R&D or training and development. According to (Alavi and Leidner, 2001); (Nonaka, 1991), Knowledge creation Refers to the activities for developing new content or replacing existing content within the interactions of tacit and explicit knowledge. There are four modes of knowledge creation through the interactions of tacit and explicit knowledge: 1) socialization, 2) externalization, 3) internalization, and 4) combination.[12]

- Knowledge application and transfer (sharing/ utilization): This relates to the deployment of knowledge for the benefit of the organization, enabling members to use the knowledge they possess in practice and to establish the need for more[13].This involves conveying and diffusing knowledge throughout an organization to leverage the ways it can be used to solve problems and strengthen performance. Communication is a crucial element of knowledge sharing[14] . Knowledge Transfer refers to the process by which a company shares knowledge among its units and members, promoting new understanding. It is essential for the company to develop an adequate design of informative interaction networks that allow individuals of diverse specialties, cultures, and geographic locations, not only to access the same information but also to come together through the network to undertake a particular project. Moreover, for the transfer of tacit knowledge, which requires more interaction between the individuals, the company must develop mechanisms that encourage dialogue and interaction. Knowledge Transfer, the process by which knowledge of one actor is obtained by another respectively the dissemination of knowledge from one individual or group to another within the company[15].

According to above, Knowledge sharing is the interactive process of making the right information available to people at the right time in a comprehensible manner to enable them to act judiciously enriching the knowledge base in the entire mechanism.[16]

The question needs to ask here is: What knowledge is to be transferred?

(Johnsson et al, 2002) differentiated between four different types of knowledge that employees transfer when working, depending upon how easy or difficult it is to transfer or codify tacit into explicit knowledge:[17]

- *Know-What: This knowledge refers to facts, it can be broken down into bits and communicated as data, as such, it is relatively easy to codify.*

- *Know-Why: This knowledge refers to principles and laws of motion in nature, in the human mind and society. Its codification is often incomplete as know-why activities often build on personal skills.*

- *Know-how: The ability to do something respectively the use of skills and personal knowledge. Parts of know-how may be possible to articulate and parts of it may be codifiable, but there will always remain irreducible differences between the actual skill and the code-book of how to apply knowledge.*

- *Know-Who: This knowledge involves information about who knows what and who knows what to do. It also involves the social ability to co-operate and communicate with different kinds of people and experts. Know-who is highly context dependent. It is characteristics and usefulness depends on social capital in terms of trust, networks and openness. It is therefore rather difficult to codify.*

- *Knowledge codification and storage: Knowledge storage, codification, and retrieval are the last KM process considered*[18]*. It is a very important aspect in the effective management of knowledge. The existing knowledge must be captured, codified, presented and put in stores in a structured way, so it can be reused later. However, it is vital to remember that organizational knowledge is dispersed and scattered throughout the organization. It is found in different locations, in people's minds, in organizational processes, and in the corporate culture, embedded in different artifacts and procedures, and stored in different mediums such as print, disk and optical media. Thus, some authors suggest that capturing, codifying and storing knowledge are the most challenging aspects of knowledge management.*

2.2 Information and Communication Technology (ICT)

Information and Communication Technology is a key source for obtaining competitive advantage. ICTs refer to the wide range of computerized ICTs. These technologies include product and services such as desktop computers, laptops, handled devices, wired or wireless intranet, business productivity software such as an editor and spreadsheet, enterprise software, data storage and network security among others. ICT referred a system that supported the functions of information creation, construction, identification, capturing, acquisition, selection, valuation, organization, linking, structuring, formalization, visualization, distribution, retention, maintenance, refinement, evolution, accessing, search, and application[19]*. Furthermore, ICTs are supporting the emergence of new organizational forms and working patterns that are in many ways transforming the ways in*

which companies function, and especially the ways in which they interact and communicate. The metaphor of the computer as a filing cabinet, text processing or calculating tool is being replaced with the metaphor of computer as a communications device: a window, a channel, or perhaps a lens that may be focused, through which to access information[20]. Therefore, IT includes computer hardware, software, and database management systems and data communication technologies. Information systems are a combination of information technology, data, procedures for processing data and the people who collect and use the data.[21]

The most important element in ICT is The IT infrastructure. Which refers to the artifacts, tools and resources that contribute to the acquisition, processing, storage, dissemination and use of information? According to this definition, the IT infrastructure includes elements such as hardware, software and support staff[22]

2.3 The Importance of ICT for KM

(Vujovic, 2014) states that KM comprises organizational processes that constitute a synergy of potentials of information technology and creative and innovative potentials of people in a company, and is based upon information infrastructure that has been created and constantly improved KM methods through implementation of systems that coordinate information flow, data mining (DM). online analytical processing (OLAP), other ways of knowledge mining (knowledge discovery) and knowledge extraction that are enabled by the use of modern information technologies, e.g. expert systems, intelligent agents etc.[23]

Some authors suggested that an ICT-driven knowledge management approach stresses only the codifiable, explicit aspects of knowledge while ignoring the tacit aspects. Much of the knowledge management literature is biased towards a technological agenda and away from wider organizational issues, thereby ignoring social and behavioral factors[24].

There are two basic approaches to KM for which ICT can provide support: codification and personalization. With the codification approach, more explicit and structured knowledge is codified and stored in knowledge bases. The main role of ICT here is to help people share knowledge through common storage to achieve economic reuse of knowledge. With the personalization approach, more tacit and unstructured knowledge is shared largely through direct personal communication. The main role of ICT here is to help people locate each other and communicate to achieve complex knowledge transfer.[25]

The ICT revolution has facilitated the processes of searching for and recovering information, but at the same time has led to an important growth in the database industry. Organizations must be able to use ICT to obtain useful information for their decision-making. This study defines ICT competency as how the organization uses technology to manage its information effectively. While ICT is a generic term fundamentally used to refer to programs, computers and telecommunications, the term IT competency is broader and refers to the use of these technologies to satisfy the organization's information needs[26]. In addition, ICT facilitates the process of knowledge transfer. It can also be used to catalogue expertise of organizational members and a result facilitating access to the right people and enhancing knowledge sharing. On other hand, ICT supports the process of knowledge codification and storage. IT facilitates the standardization and automation of certain tasks, supporting the transformation of tacit knowledge into explicit knowledge. Similarly, ICT also provides the necessary mechanisms to codify and store knowledge. In order to be useful, however, knowledge stores must be accessible to firm members and must be in a form that will enable each

member to interpret in a similar manner, thereby becoming a part of the whole firm's knowledge base. IT, with its protocols and platform standards, provides an ideal mechanism for connecting widely dispersed individuals via a common system and enabling firm members to access more easily the knowledge that is stored in memory bins, so that new information can be interpreted and synthesized with existing knowledge [27]

3. Previous studies

- *Study of (Anzehaiev and Bai, 2013) entitled the role of information technology in successful knowledge management (Case study: Tehran's physical education college). The main purpose of this study is to investigate the role of Information Technology in Successful Knowledge Management in Tehran's Physical Education College. The research method in this study was Descriptive and correlation method Statistical population of the study is all members of the Faculty of Physical Education college in Tehran (N=130) in 2012 (Islamic Azad Universities and National Universities) that 111 patients were selected as subjects. The research findings on the importance of IT as one of the factors affecting KM in Tehran's Physical Education Faculties underlined. Thus, it is recommended that requirements for improving knowledge management be provided.*

- *Study of Jin (Tong and Shaikh, 2014) entitled ICT Driven Knowledge Management in Developing Countries a Case Study in a Chinese Organization. This paper explores current KM practice in China through a case study of a recently created Chinese mobile phone company. The researchers present a model demonstrating how ICT can promote effective KM based on the Lotus case findings. However, this model is more applicable in the wider developing countries context than just China. The research findings that the role of ICT as an essential enabler for KM within Chinese organizations is illustrated in a model. This model also shows applicability in the wider developing countries context than just China.*

- *Study of (Godson et al, 2016) entitled Information and Communication Technology as an Imperative for Knowledge Management: A Case of Selected Universities in South Eastern Part of Nigeria. The aim of this study is provides a better understanding of relationship between ICT and KM to Research question and hypothesis are formulated in line with the specific objective. The research adopts survey design. The study worked with sample size of three hundred and sixty eight (368) from the population of Four Thousand and five hundred and thirty five (4535). Multiple regression analysis was used to analyze the data at 0.05 level of significance. The finding shows that ICT – based KM significantly affects research outputs of lecturers. Based on the finding, the study recommends that Nigerian Universities should create strategic alliance with other International Universities, share best practices in research methodology, leadership commitment to ICT and continuous upgrading of ICT.*

- *Study of (AL-Jaafreh & Fayoumi, 2017) entitled The Role of IT and Knowledge Management Capabilities in Generating Innovation Knowledge in Telecom Companies. This study tests the effects of ITC on innovation, and considers the mediating role played by KM on innovation. This study makes several significant contributions to the foregoing literature in a number of ways. First, this research will show how ITC along with other organizational capabilities, such as knowledge management, can enhance a firm's innovation, and this will fill the gap in the literature on the possible effect of other organizational capabilities or resources on the relationship between ITC and innovation.*

Second, in terms of the research object selection, past ITC and KM related studies chose cases from finance and manufacturing firms in the context of advanced Western countries or newly industrialized Asian countries such as USA, Canada, Taiwan, Hong Kong, and Korea. The results of the present study have important implications for managers. It will help managers build the right ITC that will facilitate the process of knowledge generation, transfer and use, and which would foster innovation at their organizations.

- Study of (Bakar Hamad study2018) entitled The Role of ICT in Knowledge Management Processes: A Review. The aim of this study is to identify the impact of ICT in Knowledge Management Processes. The methods used to undertake this paper are collecting information from published journals, group discussion paper, and books from the range of the year 2000 to 2017.The results manifest that the ICT has proven to be a most important tool to enhance and advance the knowledge management and its processes within the arrangements. As well, all the same, it should note that the ICT does not make an organization capture, create, share/transfer and reuse of knowledge, but it simplifies the choice and opportunity of such operations

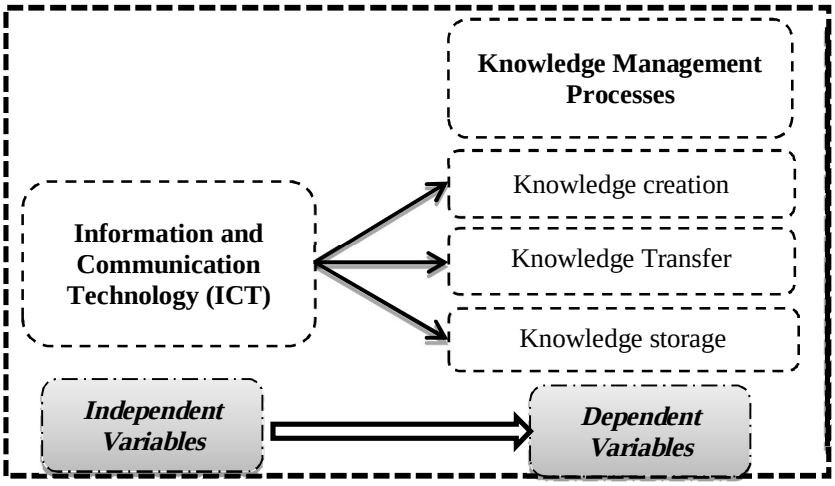
4. METHODOLOGY

4.1 The research method: This study is based on two major sources of research. It was conducted through the collection and analysis of various publications on this field. The secondary source, refer various publications that have been made in this area about empirical studies, various academic debates and analyzes the different findings. The publications have been published in various journals, conferences and books. The primary source is based in the collection of data through questionnaires.

4.2 The Statistical Population and Sampling: Statistical population of the study is all workers of the "ECDE"Company. The study sample is a convenient sample consisting of 100 respondents.

4.3 Conceptual framework: In view of the goal, the researcher identified the Conceptual framework of the current study according to what has been reviewed from the literature and previous empirical studies. The Figure 1 shows the study's model.

Fig1. The study's model



Source: Prepared by Author according to previous studies

According to The figure1 the current study is determined the effect of Information and Communication Technology (ICT) on the Knowledge Management Processes (KM) including (Knowledge creation, Knowledge transfer and knowledge storage).

4.4 Hypothesis Development :

According to (Hamad, 2018); (Godson, Uzochukwu and Obiagli, 2015); (López, Peón and Vázquez Ordás, 2009) ICT can have a positive influence on KM. Thus, the hypothesis can be developed as follows:

There is a significant impact of the ICT on KM processes at the (0.05) level within"ECDE "

This hypothesis can be divided as follows:

- *There is a significant impact of the ICT on Knowledge creation at the (0.05) level within"ECDE"*
- *There is a significant impact of the ICT on knowledge transfer at the (0.05) level within"ECDE"*
- *There is a significant impact of the ICT on knowledge codification and storage at the (0.05) level within "ECDE"*

4.5 Data Analysis: The following statistical methods were used: Kolomogorove Smirnove (K-S) test was used to study the normality of data and regarding to the normality of data and in order to examine the relationship between the variables; Pearson's correlation coefficient test was used. The Cronbach's alpha coefficient was used to measuring the stability of the scale. We also used ANOVA for the test of hypotheses, as well as, simple regression was used to determine how affects the independent variable on the dependent variable.

4.6 Measures: This section describes the scales used to measure ICT, KM processes. All the variables were measured on Likert 5-point scales ranging from 1 = strongly disagree to 5 = strongly agree.

- *The ICT scale: This scale was adapted from Pérez López et al (2009) scale, and includes 8 Items. Which are about the company's knowledge, skills and experience in the use of ICT, using of tools and systems, firm's infrastructure etc.*
- *The KM scale: This scale was developed according to KM model proposed by Gold et al (2001) Zaim et al. (2007) and López et al (2009) scale, and include 33 Items, which are measuring various aspects of knowledge management processes including knowledge creation, knowledge transfer and sharing, knowledge codification and storage.*

5 RESULTS AND DISCUSSION

5.1 Analysis of data normality and Internal consistency test

- *data normality: According to Results in Table 1 the ICT data (Z=0.829, p=0.16) and KM data (Z=0.712, P=0.63) are normal.*

Table1. Result of Kolomogorove Smirnove test

Variables	*N*	*Z*	*Sig*	*Test result*
ICT	*100*	*0.829*	*0.16*	*data normality*
KM	*100*	*0.712*	*0.63*	*Data normality*

Source: Prepared by Author according to spss results

- *Internal consistency test: To measure the reliability of the survey instruments, the Cronbach's alpha coefficient was used, which is Acceptable extent at least 0.70. Based on the table2, the Results indicate that the Cronbach's alpha coefficient for all variables (ICT scale and KM scale, are 0.87 and 0.88 respectively). This is greater than 0.7, this confirms the reliability of the all collected data (internal consistency is excellent) and can be analyzed.*

Table 2. The results of Cronbach's alpha coefficients

variable		*items*	*Cronbach's coefficient*	*Source*
ICT scale		*08*	*0.87*	*Gold et al (2001) Zaim et al. (2007) López et al (2009)*
KM scale	*knowledge creation*	*33*	*0.88*	*Pérez López et al (2009)*
	knowledge Transfer			
	Knowledge storge			

Source: Prepared by Author according to spss results

5.2 Hypothesis Analysis:

Regarding the results in Table 3, there is a positive and significant relationship between ICT and all Knowledge Management process.

Table 3.The results of Regression analysis and ANOVA Analysis

Model		2			ANOVA Test			
					t Test		F Test	
					s ig		ig	F
ICT/ knowledge creation	.42	.17	.75	.1	0 .000	.22	.000	11 7.14
ICT/ knowledge Transfer	.33	.10	.14	.30	0 .000	.14	.000	14 5.36
ICT/ knowledge storage	.49	.24	.12		0 .000	.47	.000	22 2.44

Source: Prepared by Author according to spss results

As we can see in Table 3, the results of correlation coefficient shows that there is a positive and significant relationship between ICT and knowledge creation from the ECDE' workers perspective (r=0.42, P≤0.000). In addition, the results shows that ICT explained 17 percent (R2=0.17) of the variance in the knowledge creation at a significant level of 0.000. This confirms the effect of ICT on knowledge creation.

As shown in Table, The a-value (the intersection coefficient) is 2.1 while the b-value (the Regression coefficient) is 0.75. This means that, the increase in the ICT by one-unit leads to an increase in the knowledge creation by (0.75) unit. Based on the above, the regression equation can be written as follow:

$$Y = a + bX1$$

$$Y\ (ICT) = 2.1 + 0.75X\ (knowledge\ creation)$$

In order to ascertain the significance of the regression model, the ANOVA analysis is performed, the results shows that the F-value is (117.14) and the t-value is (5.22) at the significant level of 0.000. Thus, the null hypothesis (H0) is rejected and the alternate hypothesis (Ha) is accepted. The author therefore accepted the alternate hypothesis which states that there is significant relationship between ICT and knowledge creation.

As shown in Table 3, the Pearson Correlation Coefficient (R) for the Model (ICT/ knowledge transfer) is (r=0.33, P≤0.000), this means there is a positive and significant relationship between ICT and knowledge transfer from the ECDE' workers perspective, while The Coefficient of determination is (R2=0.10). This means that the ICT explained just 10 percent of the variance in the knowledge transfer. This confirms the effect of ICT on knowledge transfer.

It is noted in the table 3, the a-value is 1.30 while the b-value is 1.14. This means that, the increase in the ICT by one-unit leads to an increase in the knowledge creation by (1.14) unit. Based on the above, the regression equation can be written as follow:

$$Y = a + bX2$$

Y (ICT) = 2.1 + 0.75X (knowledge transfer)

The results shows that the F-value is (145.36) and the t-value is (5.14) at the 0.000level. Thus, the null hypothesis (H0) is rejected and the alternate hypothesis (Ha) is accepted. The author therefore accepted the alternate hypothesis which states that there is significant relationship between ICT and knowledge creation.

According to the analysis in the table 3, the results of correlation coefficient shows that there is a positive and significant relationship between ICT and knowledge codification and storage from the ECDE' workers perspective (r=0.49, P≤0.000). In addition, the results shows that 19% of the knowledge codification and storage changes by ICT are explained. This confirms the effect of ICT on knowledge codification and storage.

The a-value of model (ICT/ knowledge codification and storage) is 2 while the b-value is 1.12. This means that, the increase in the ICT by one-unit leads to an increase in the knowledge codification and storage by (1.12) unit. Based on the above, the regression equation can be written as follow:

Y = a + bX3

Y (ICT) = 2.1 + 0.75X (knowledge creation)

In the same context, the F-value is (222.44) and the t-value is (3.47) at the 0.000level. Thus, the null hypothesis (H0) is rejected and the alternate hypothesis (Ha) is accepted. The author therefore accepted the alternate hypothesis which states that there is significant relationship between ICT and codification and storage.

6. CONCLUSION

Too many studies focus on the relationship between ICT and KM. Our work to date highlights the importance of both the ICT and the knowledge management in company, especially in ECDE Company. According to our study, the role of information technology (ICT) in knowledge management (KM) is an essential consideration for any company. Therefore, it is clear that the company's acquisition of advanced ICT doubles its chances of success in within its Competitive structure.

The results show that there is a significant correlation between ICT and KM. Thus, the strength of the correlations obtained in this research suggests that the knowledge management process is impacted significantly by ICT.

The results provide clear support for all hypotheses, the findings show that ICT has a positive effect on knowledge creation (r =0.42, b = 0.75, t = 5.22, p < 0.05), on knowledge transfer (r =0.33, b = 1.14, t = 5.14, p < 0.05), and on knowledge codification and storage (r =0.49, b = 1.2, t = 3.47, p < 0.05).

A limitation of this study is that it only observed behavior of employees in one company. As mentioned in the discussion, the sample of researchers formed a very small. Similar studies in different companies and including big sample.

The following suggestions are offered:

- *The study is recommended that ECDE's managers recognize the importance of the ICT as an important tool in knowledge management processes, thus enabling the company to achieve a competitive advantage.*

- *The researcher recommends that the "ECDE "Company should create strategic alliance with other companies, with research institutes, in order to gain both new knowledge and new ICT.*

- *This study recommends to provide the necessary infrastructure for the use of ICT in all sections and units of the company*

- *The "ECDE "Company should be committed to mobilizing the necessary human resources and competencies to improving Knowledge Management process.*

- *ECDE "company should see KM as a matter of necessity compete*

- *ECDE "company should establish a department or specialized knowledge management unit.*

- *Should be intensive and continuous efforts to modernize the ICT of the company*

- *Remove all the challenges and barriers, in order to facilitate knowledge creation, knowledge transfer and knowledge storage*

Holding training and education courses for staff to ensure that ICT is being used effectively.

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