The role of knowledge management in developing scientific research in algeria –case study of cread-

دور ادارة المعرفة في تنمية البحث العلمي في الجزائر – دراسة حالة مركز البحث للاقتصاد التطبيقي و التنمية –

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Abstract:

this study aims to determine the impact of the knowledge management on developing scientific research in Algeria In the context of the knowledge economy,and most of the time the knowledge is set forth within the human mind of researchers.This study focuses in the case of the centres of scientific research in general,and the RCAED (Research Centre in a Applied Economic for Development) in particular.The data were gathered through surveys and updated in the month of May,2019.Then have been analysed with SPSS to determine the relationships between various factors,with a content analysis of the laws and the organizational and legal plans, that manage researchers and scientific research in Algeria during (1962-2019).The study also offers models of human capital management within the research centre in order to get along with several results, recommendations and outlooks.

Keys words: **Management of human capital, knowledge management, development, scientific research in Algeria,**

JEL classification codes: O3 ; I2 ; D83.

ملخص:

تركز هذه الدراسة على مراكز البحث العلمي بشكل عام، ومركز البحوث في الاقتصاد التطبيقي للتنمية بشكل خاص. حيث تم جمع البيانات من خلال المسوحات وتحديثها في شهر مايو 2019.ثم تم تحليلها مع باستخدام برنامج (SPSS) لتحديد العلاقات بين مختلف العوامل، مع تحليل محتوى القوانين والخطط التنظيمية والقانونية التي تدير الباحثين والبحث العلمي في الجزائر خلال الفترة (1962-2019)، وتقدم الدراسة نماذج لإدارة رأس المال البشري الحامل للمعرفة داخل مركز الأبحاث من أجل الحصول على التميز مع العديد من النتائج والتوصيات لتحسين اساليب البحث العلمي في الجزائر و كذا الافاق و التوقعات.

الكلمات المفتاحية: ادارة راس المال الفكري ، ادارة المعرفة ، التنمية ، البحث العلمي في الجزائر

تصنيف JEL: O3 ; I2, D 83.

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1-Introduction:

Scientific research is considered to be one of the most important factors and indicators of development and growth for any country.As it is a basic pillar on which the progress of the State rests on its delay. t is also, the cornerstone which can lead the developing countries to catch up with civilisation.

Therefore,the background of the field of research depends on two fundamental items : the first is the opinion of the gouvernement about the importance of research, and this is evident through the budget fixed by the national and individual income.In addition,the gouvernemental and the private programs which aim at exploiting the energies and the human and materials competencies too.The second is the point of view of the Algerian people in general, and the sensitization of the young pupils and researchers in particular about the importance of scientific research in developing national economy.

2- Previous studies :

-Study of Mohamed Buheji, **« Understanding the impact of knowledge management on driving organisational excellency towards organisational learning and innovation** » : (BUHEJI, 2013)

This study aims to deal the impact of knowledge management in creating the organizational excellency,organizational learning and innovation.It is intented to fill the gaps in the knowledge of society. To understand the models and the types of knowledge management applied within the gouvernemental agencies and to deal the relationships between them by demonstrating the impact of knowledge management thanks to its maturity or to the institutional excellency within this framework.

-Jo Ann Girard, John Girard,Defining knowledge management: Toward an applied compendium,(2015) : (JoAnn Girard, 2015)

The purpose of the research is to chronicle the depth and breadth of applied knowledge management definitions penned by researchers and practitioners alike. Once these definitions are part of the body of knowledge they become accessible to academics conducting research, to organizations considering knowledge management, and to other interested parties who wish to learn more about the subject. All of the definitions are freely available from open access sources. Collectively the definitions represent the thoughts of authors in at least 13 countries and from 23 domains. The collection of definitions highlight the truly multidisciplinary nature of knowledge management. The initial analysis revealed the four most common verbs were use, create, share, and manage. The most common nouns were knowledge, process, organization, and information.

-Hanane Bechta ; **Naim Bouamoucha** : **« The scientific research at the Algerian university between the theortical notion and** the **academic appliance** » : (Bechta & bouamoucha, 2018)

This study identifies the different characteristics linked to scientific knowledge, which means that scientific results are not a coincidence.But its including scientific knowledge.However,it should be noted that the most of

them are obtained in the field of the social sciences, does not belong to the communauty and remain stored in the library.They can not acheive their purposes or serve their society.This is due to the fact of that the social sciences have no place in the Arab world in general and in Algeria in particular,given the lack of skills and experts in the field which reflects the effeciency of problem solving and their compactibility with contemporary life.

3-The systematic aspect of the study :

The present study is one of the uncommon ones which dealt with the management of scientific research by the knowledge management approach.And which attempted to propose a model of excellency.Scientific researches establishments,applied to researchers from one of the documented scientific researches centres linked to the website of the higher education and scientific research ministry, including 20 centres bowling as to be public establishments for scientific and technological use.Those are supervised by the ministry in charge,the location of our researches, by using interviews and by analysing the survey,within CRAED (Center for Research in Applied Economy for Development),by using a new managerial method for managing knowledge. In the scope of its contribution to the management of the researchers and the achievement of excellency through the various researches centres over Algeria.The study focuses also the reality about the organization and the policies used in this component,from the post-independance until today.With a brief explanation as well as elaborating an analytical study about these laws which were adopted the most important feature for scientific research and technological development,the orientation of researchers in scientific researches centres, in addition to the values mechanisms of the scientific research in Algeria, such as the partnership ans agreements between the scientific research sector and the business one.

4-The problematic :

We through this article, try to find answers to the following items :

Does the adoption and the applying of knowledge management affect the performing of researchers and scientific research within - Are there knowledge management practices in for CRAED (Center for Research in Applied Economy for Development).That have an effect on innovation and on the development of scientific research ?

5- Hypotheses :

-Researchers know and understand the concept of knowledge management and its importance.

-CRAED (Center for Research in Applied Economy for Development),
being a public establishment of a scientific and technological feature, is among those which adopt and apply the practice of knowledge management.

-The performing of researchers and scientific within th CRAED (Center for Research in Applied Economy for Development), is positively ans negatively affected by the practice of the knowledge management strategy.

6-Search techniques (data collection tools):

Research techniques are a set of investigative and investigative procedures, methods and tools that are systematically used to collect data.

And information about the reality of a subject or phenomenon, and includes research techniques in the humanities: observation, interview, questionnaire or survey, content analysis and statistical analysis. (Ingers, 2004)**.**

And in our study we adopted the following tools: Observation, questionnaire, content analysis of certain statistics, in addition to the case study method (there is a difference in the researchers' view of the case study being as a technical method of collecting information.)

- **Case study technique**: it was considered a technique or direct survey tool commonly used in observing a group directly to take notes on how they understood; attitudes and behaviours. (Rowley, 2015) .
- **Observation:** it is a technique of direct scientific investigation commonly used to visualize a group directly in order to take information on attitudes and behaviors. (Ingers, 2004)
- **Content analysis technique:** Content analysis is part of quantitative analysis and its origins come from journalist analysis,.According to Olé Holsti, "It's a way to draw conclusions by identifying the regulator that allows the production of knowledge." (Perret, Gotteland, Haon, & Jolibert, 2008)**.** and in our study we will analyze the content of the laws that control the conduct of researchers and scientific research in Algeria, in addition to analyzing certain statistics to explain the phenomenon related to the study.
- **Questionnaire:** The questionnaire is considered a direct technique for asking questions of individuals in a targeted manner, as all answers are predetermined, allowing quantitative processing to detect mathematical relationships and make quantified comparisons. (Ingers, 2004)
  and who aims to better understand the different aspects of the phenomenon studied,

In this context we designed a questionnaire for the category of researchers at the Center for Scientific Research according to the Scale of Likert triple, which includes the following answers: **Agree - 3-, Neutral-2-, disagree-1-**

By way of illustration, the Lickert scale aims to determine the extent to which the individual accepts the conditions certain of it are widely used in the field of social research, where the researcher develops a set of behavior related to the phenomenon studied and has a set of notes (ranging from three to four or five degrees or more depending on the scale of the select likert of the researcher , through which the researcher determines the extent of his approval of these terms, and after the releases, the analysis and interpretation of these degrees and data are identified On the trends of research on the phenomenon studied; the following weighted averages: (Al-Mahmoud, 1995)

Table N° (01) : The Likert scale.

Degree	Average	Level
1	Disagree	From 1 to 1.66
2	Neutral	From 1.27 to 2.23
3	Agree	From 2.34 to 3

Sources : Hussein Ahmed Al-Mahmoud Al-Akam, the impact of the number categories of staging for the direction al-Trend gauge on its sekumetric properties, Magister, University of Jordan, 1995.p 62

The main question initially includes 25 questions,evaluated by several teachers from Algerian universities,alongside many of these searchers are affiliated within scientific research centers,these questions were tested,revised,completed,improved and processed by the SPSS version 22 system.Whereas,the question-sheet is designed as follows :

- **The first part** : contains the initial informations about the concerned case as : age,gender,qualifications,years of experience.

- **The second part** : contains :

- **The 1st axis** : related to the case of the study on the research understanding,the notion of knowledge management and its importance.

- **The 2nd axis** : consists in the adoption by the), CRAED (Center for Research in Applied Economy for Development),

  the knowledge management notion in order to achieve the outlooks in the 3 rd axis.This adoption is considered as a deep contribution at the scientific research.

In order to test the reliability of our question-sheet, several evaluation methods have been used according to some assumptions in order to estimate the coefficient of Cronbach reliability technique which is the most commonly used.Therefore,the obtained results are as follows :

Table (02): Reliability statistics

Cronbach's alpha	Number of elements
0,649	25

Source: established by the researchers

Table (03): Total element statistics

	Average of the scale when deleting an item	**Scale variance when removing an item**	**Full correlation of corrected items**	**Cronbach's alpha in case of element deletion**
q1	41,79	32,027	-,217	,673
q2	41,86	28,695	,330	,630
q3	41,00	26,643	,465	,609
q4	41,72	28,707	,241	,636
q5	42,10	30,239	,182	,644
q6	42,03	30,677	,031	,651
q7	42,00	30,429	,053	,651
q8	41,45	29,042	,172	,643
q9	41,83	30,433	-,001	,661
q10	40,62	30,958	-,045	,658
q11	40,69	28,865	,219	,638
q12	41,79	28,384	,372	,626
q13	40,69	28,436	,357	,627
q14	41,28	26,493	,358	,620
q15	41,48	27,473	,406	,618
q16	41,69	29,650	,095	,652
q17	41,14	25,623	,479	,602
q18	41,59	28,966	,149	,647
q19	41,38	29,315	,148	,646
q20	41,52	29,901	,104	,649
q21	41,90	32,167	-,268	,672
q22	41,83	27,291	,453	,614
q23	41,59	29,037	,229	,638
q24	40,97	28,749	,170	,644
q25	41,03	25,463	,468	,603

Sources : established by the researchers**.**

The validity of the content is assessed from the representativeness (relevance and completeness) of the elements that make up the measuring tool.

Therefore,the Cronbach Alpha value must be evaluated from 0 to 1 and the question-sheet is valid and accepted,only if it exceeds 60%.And it is the case of our question-sheet evaluated on : a=0.649.

7-The limitations of the study :

The present research was limited to the category of searchers affiliated with the Research Centre in Applied Economic for Development (R CAED).Therefore,the results could be generalized to similar communities in terms of characteristics, however,the limitations of study are thus detailed.

-The study is thus limited by the searchers working at CRAED (Center for Research in Applied Economy for Development),

,in the section of human Development and social economy, during May and June 2019.

8-The studied sample : Due to the thematic of the study,we focused on permanent- searchers in terms of surveys and statistics, related to their number.Therefore,the section affected by the study is as follows :

Table (04): Sharing of community members by division

	Division (01) Human Development and Social Economy Division	**Division (02) Macroeconomics and Economic Integration Division**	**Division (03) Firms and Industrial Economics Division**	**Division (04) Agriculture, Land and Environment Division**
Division Manager	01	01	01	01
Permanents Researchers	14	09	12	07
Associates Researchers	12	08	24	04
Total = 94	27	18	37	12

Sources : established by the researchers**.**

The next table presente the sharing of community members by position held as follows :

Table (05): Sharing of community members by position held.

	Division (01) Human Development and Social Economy Division	**Division (02) Macroeconomics and Economic Integration Division**	**Division (03) Firms and Industrial Economics Division**	**Division (04) Agriculture, Land and Environment Division**
Professor of Higher Education	06	00	13	01
Research-Associate « A »	06	01	00	02
Research-Manager	02	00	02	00
Research-Associate « B »	01	01	04	01
Assistant-Lecturer.	02	00	00	00
Lecturer.	02	00	05	03
Associate-Lecturer.	00	00	06	00
Research-Associate.	01	00	00	00
Research-Assistant.	07	08	07	05
Unrecognized	00	08	00	00
Total : 94	27	18	37	12

Sources : established by the searchers.

The study population included 42 permanant (targeted) researchers from 94 researchers, achieving the optimal sample size based on the Steven Thompson equation :

$$n = \frac{N \times p(1-p)}{\left[[N-1\times(d^2 \div z^2)]+ p(1-p)\right]}$$

N: community size
Z - 1.96 The standard score corresponding to the meaning level of 0.95.
d - 0.05 Error rate
p - 0.50 neutral property availability rate) which is equivalent to 38 researchers.

Based on the responses, the following results.

9-In the theortical part :

Concepts and notions of the study :

The management of knowledge, the kowledge management, is the capitalization of knowledge, the corporate memory.These are a set of terms using to show this current tendency adopted by companies and the mastering of their knowledge.However,what is behind this multitude of terms ? What are the concepts,the differences,the commonalities and the limitations of each of them ? This is the debate held in this study.

a)**Knowledge Management :**

Knowledge management (KM) was initially defined as the process of applying a systematic approach to the capture, structure, management, and disseminationof knowledge throughout an organization in order to work faster, reusebest practices, and reduce costly rework from project to project (Nonaka andTakeuchi, 1995; Pasternack and Viscio, 1998; Pfeiffer and Sutton, 1999; Ruggles and Holtshouse, 1999). KM is often characterized by a "pack rat" approach to content: "save it, it may prove useful sometime in the future." Many documents tend to be warehoused, sophisticated search engines are then used to try to retrieve some of this content, and fairly large-scale and costly KM systems are built. Knowledge management solutions have proven to be most successful in the capture, storage, and subsequent dissemination of knowledge that has been rendered explicit—particularly lessons learned and best practices.

So ; Knowledge management is the deliberate and systematic coordination of an organization's people, technology, processes, and organizational structure in order to add value through reuse and innovation. This coordination is achieved through creating, sharing, and applying knowledge as well as through feeding the valuable lessons learned and best practices into corporate memory in order to foster continued organizational learning. (Dalkir, 2005)

b)The scientific research :

The scientific research is defined as being « a method of systematic thinking » or « a well-rounded and a controlled study ».Thereby, the field of scientific research relies on scientific tools to collect informations about different tendencies and different influences that may affect the obtained results.So,the scientific research is an objective,in addition to its ability to

generalize the obtained results and to propose general rules those rely on the phenomenon,characterized by the ability to predict what is generally correct in the natural sciences.While,in the social sciences,its degree of prediction,is not the same,due to the large number of variables and factors which are difficult to control. (jabbal & abdel-jabbar, 2012)

-The reality of scientific research and the searchers management (human capital) within Algerian scientific researches centres:

In this context,we approach the reality of the organization and the policies of scientific research during the period from 1962 to 2019.And the introducing of scientific research centre.The thematic of our analytical study about the gathered data related to scientific research and technological integration, as well as searchers evaluating a mecanism or a tool (human capital) over these centres. Thus,if we establish an observation and a scientific diagnosis about this field in Algeria,we noted that, there are more than ten research centres and more than a hundred research units over universities and institutes.Therefore, Algeria does not manage to anchor a clear policy of scientific research. (Khelfaoui, 2011)

Due to the non-attendance of a real national program and a strategy to promote any intellectual activity in general and research field in particular,adding the planification and the valorisation of its results.It should be noted in passing that the generic term of scientific and technical information (STI) and the term of scientific communication are relegated to the background,while their situation in developed countries is raised to the threshold of sovereignty,because these countries have grasped the top of the contribution about the research in the development.They put a policy of educational approach for this activity.Thus,scientific resear ch in the under-developed illustrates clearly the neglect and the contempt to this sector.Which is unfortunately characterized by several adverse aspects.Notably,the allocation of derisory budgets for this sector.

So,the almost total absence of a funds dedicated to the knowledge and the evaluation of its results.The admistrative blocking of teachers and searchers careers and the adminstrative management of balance sheets of different establishments and other infrastructures.Decree designation of managers,underuse of existing potential etc…

The case of Algeria is not so different from other poor countries. Not withstanding_the_appearence_of interessant factors important for showing its skills, which have been encouraged to full in other jobs which are sociologically mode valued, and where forces take the opposite way.Because that finding the means to shine in fields of point is formerly monopolized by the western.
(ydroudj, 2005)

-Introduction to scientific research centers in Algeria :

The study includes fifteen **(15)** research centers documented according to Ministry of Higher Education and Scientific Research.These centers are classified as follows :

-Renewable Energy Devlopment Center **(CDER)-**Algiers.
-Research Center for Scientific and Technical Information (**CERIST**)-Algiers.
-Advanced Technologies Developmental Center (**CDTA**)-Algiers.
-Industrial Technology Research Center (**CRTI**)-Algiers.
-Scientific and Technological Research Center on the Devlopment of the Arabic Language (**CRSTDLA**)-Algiers.
-CRAED (Center for Research in Applied Economy for Development),Semi-Conductors Technology Research Center for Energy**.(CRTSE**).
-Social and Cultural Anthropology Research Center (**CRASC**).
-Scientific and Technological Research Center on Dry Areas (**CRSTRA**).
-Biotechnology Research Center (**CRBT**).
-Scientific and Technological Research Center in Physico-Chemical Analyses (**CRAPC**)-Tipaza.
-National Research Center in Islamic Sciences and Civilizations-Laghouat.
-Amazighe Language and Culture Reearch Center (**CRLCA**).
-Agrifood Technology Research Center.
-Agropastoralism Research Center. (ministere, 2015)

These centers represent public institutions of a scientific and technical nature,within the supervision of the ministry and through a technological site.The electronic research network includes institutions and research centres (previously mentioned),including (0**6**) six research agencies,such as :

-National Agency for the Promotion of the Results of Research and Technologies Development (**ANVREDET**).
-Thematic Sciences and Technologies Research Agency.
-Thematic Agency for Health Sciences Research -Blida.
-Thematic Research Agency in Social and Human Sciences.
-Thematic Agency for Research in Nature and Life Sciences.
-Thematic Research Agency in Biotechnologies and Agrifood Sciences.
(scientifique m. d., 2015)

And (**12**) twelve research units.

-Cognitive Neuroscience-Speech Therapy -Phoniatry Research Unit (**URNOP**)-University of Algiers 2.
-Renewable Materials and Energies Research Unit (**URMER**)-University of Tlemcen.
-Social Sciences Research Unit-University of Batna 1.
-Energing Materials Research Unit-University of Setif 1.
-Human Resources Research and Development Unit-University of Setif 2.
-Systems Modeling and Optimization Research Unit-University of Bejaia.

-Research Unit in Environmental Chemistry ans Structural Molecular University of Constantine 1.
-Research Unit for the Valuation of Natural Resources of Inactive Molecules and Physico- Chemical and Biological Analyzes-University of Constantine 1.
-Research Unit in Materials and Applications Sciences -Universitu of Constantine 1.
-Urinary and Biliary Lithiasis Research Center – University of Mostaganem.
-Social Sciences and Health Research Unit-University of Oran 2.
-Research Unit in Materials,Processes and Environment.- University of Boumerdes.

The decree n°**99-256** dated on Chaabane **8th,1420**,corresponding to november 16th,1999,and specifying the modalities of creating,organising and using a public institution within scientific and a technological nature, a legal character and a financial autonomy.Their responsabilities are the following : (scientifique M. d., 1999).

- Bring together the necessary elements those determining the research projets that being finalized.This will facilitate their implementation and their evaluation.
- Promote and stimulate the assimilation and the control of sciences and technological développements,as well as technological innovation in the field of their respective activities.
- Monitoring the scientific and the technological development too.
- Collect and process scientific and technical informations and censure its safeguard and its dissemination.
- Contribute to the evaluation of research results,in particular their strewing,exploiting and using.
- Ensure continuons training,renewal and improvement of user knowledge.
- Contribute to trainig through research and for research too.
- Ensure the coordination of laboratories research units and research teams.

The CRAED (Center for Research in Applied Economy for Development), operates under the supervision of the Ministry of Higher Education and Scientific Research (MERS).This centre was chosen as the study sample which was being classified as one of a scientific institution whose objective is the search for excellency through their respective activities.In this case, scientific research is constantly encourages researchers on lifelong learning for improving their performances,their creativity and their excellency.Our choice fell on the permanent-researchers affiliated to this center,given that they are our study sample,characterized with a set of skills and deep knowledge.

To this end,the practical center called « human capital » includes 42 permanent- researchers mentioned here below,including a brief overview of the center and its respective functions and tasks too.

c)Profil OF CRAED (Center for Research in Applied Economy for Development) :

Located in Algiers.This center is a public institution with a scientific feature.It promotes a scientific research in Development economics.This center was created in accordance with the decree n°85-56 on March 16th,1985. (CREAD, 2001)

Thus,its main tasks are related to :

- Completing a clean and an appropriate research through the economics development,
- Conducting studies or financial and monetary policies at global and national levels in both,
- Contributing to the evaluation of scientific research results ,their publication and their use too,
- Ensuring the global research configuration and improve it,
- Ensuring the retraining of the searchers levels,while ensuring the validity of their researches,
- Ensuring the completion of the program started in scientific researches and technical level in the field Applied for economics development.

  The center encompasses 94 researchers,including 42 permanent-researchers.while,the rest are participating-researchers.

  The center is also active in organizing different annual scientific activities,addressing topics related to different researches,and those promoting scientific events under their socio-economic aspects.In addition,the Center is also in charge of editing numerous journals and scientific publications,including «CRAED NOTEBOOKS » or « Les cahiers du CREAD ».

  As well as,the Center is also famous for its exchanged links with many institutions : both national and international.These relatioships have the aims to acquiring the documentary repository and all the studies and researches that it covers.

  In addition to this,the cooperative component that the center maintains with the various national and international organisations like : UNESCO,UNICEF,PNUS,FEMISE,UUROMED,KDI,KIET,SouthKorea, CRDI-Canada,IRD-France,Wuppertal,Zenit-Germany and also : Sonelgaz,Sonatrach and Naftal. **(CREAD, 2001)**

10-Practical side of the study:

-Results analysis :

-The first axis: personal data.

Table (06): of community members by gender.

		Frequency	Percent
.	**Male**	27	71,1
	Female	11	28,9
	Total	38	100,0

Source : established by the researchers based on analysis of questionnaire results.

According to the table,we note that the membres of the communauty is prevailed with 71,1 % by the male gender,while the female gender represents 28,9 % . The prevalence of the male element is encouraged by some literary ans doctrinal récurrents which grant this occupation to men, and this is due to their social status which favor them.

Table (07): Sharing of community members by years of experience

		Frequency	Percentage
.	**From 8 to 12 months**	1	2,6
	Less than 5 years	21	55,3
	From 6 to 10 years	8	21,1
	From 11 to 15	6	15,8
	More than 15 years	2	5,3
	Total	38	100,0

Source : established by the researchers based on analysis of questionnaire results**.**

By analyzing the data in table (07), we note that most members of the studied population were employed in the previous 5 years, where this category represents 55.3%. Next come the category of persons employed during the previous 6 to 10 years (21.1%) followed by a percentage of 15.8% during 11 to 15 years and 5.3% who exceed 15 years of work. Consequently, recruitment for scientific research in the economic field has become more essential over the last 5 years, given the high rate of permanent researchers hired during this period..

Table (08) : Sharing of community members by age

	Frequency	Percentage
. **Less than 25 years**	1	2,6
From 25 years to 35 years	20	52,6
From 35 years to 45 years	12	31,6
From 45 years to 50 years	3	7,9
More than 50 years	2	5,3
Total	38	100,0

Source : established by the researchers based on analysis of questionnaire results.

By analysing the data in table (8),we note that most membres of the communauty belong to the category of young people,or the south category,where the age percentage is between 24 and 35 was estimate at 52,2 %,follower by the 45 to 50 category with 7,9 % and the over 50 category to 5,3 % while the under 25 category represents a low percentage estimate at 2,6 % has many reasons,the most important of which is perhaps the opening of the sector,by the ministry of higher education and scientific research,to young people,so,they can be trained and find employment,especially research in the economic sector.

-Descriptive statistics :

1-Trend Center measurements:

Measures of central tendency are used to sum-up a set of data relating to a quantitative variable. They make it possible to determine a "typical" or central value around which data tends to congregate. In statistics, a central tendency indicator is a value summarizing a statistical series for a quantitative or ordinal variable. The two main ones are the Average and the Median, but sometimes there is also the central value (average of the minimum and maximum values) or the Mode. Since the latter is not necessarily unique for a statistical series, its definition is not obtained directly as a function of the terms of the series. The most commonly used indicator is the average and it is a calculator for summarizing a list of numeric values into a single real number, regardless of the order in which the list is given. The average is one of the first numeric indicators for a series of numbers. When these numbers represent a quantity shared between individuals, the average expresses the value that each would have if the sharing were equitable.

From our analysis of the data we had the following results:

Table (09): Descriptive statistics of the research community

	N	Minimum	Maximum	Average	Standard Deviation
Le 1st axis	38	1,889	3,000	2,55665	,276204
Le 2nd axis	38	1,125	2,750	1,91855	,403675
Le 3rd axis	38	1,500	3,000	2,25836	,336433
Valid Number(List).	38				

Source : established by the researchers based on analysis of questionnaire results.

2-The correlation analysis between knowledge management and scientific research:

Table (10): Correlations between the understanding of the concept of knowledge management and its adoption by. CRAED (Center for Research in Applied Economy for Development),

		The 1st axis	**The 2nd axis**
Le 1 st axis	Pearson correlation	1	,029
	Sig. (bilateral)		,864
	N	38	38
Le 2 nd axis	Pearson correlation	,029	1
	Sig. (bilateral)	,864	
	N	38	38

Source : established by the researchers based on analysis of questionnaire results**.**

From the table, we find that Pearson's correlation coefficient is equal to 0.029 and sig = 0.864 and which is greater than the significance level of α = 0.05. Therefore, there was no statistically significant correlation between the two variables .So, the understanding of the notion of knowledge management and its importance by researchers and between its adoption at the level of CRAED (Center for Research in Applied Economy for Development).

Table (11): Correlations between the understanding of the concept of knowledge management and its contribution to the development of scientific research.

		The 1st axis	**The 3 rd axis**
The 1 st axis	Pearson correlation	1	,176
	Sig. (bilateral)		,291
	N	38	38
The 3 rd axis	Pearson correlation	,176	1
	Sig. (bilateral)	,291	
	N	38	38

Source : established by the researchers based on analysis of questionnaire results.

From the table, we find that Pearson's correlation coefficient is equal to 0.176 and sig = 0.291, which is greater than the significance level of α = 0.05. Therefore, there was no statistically significant correlation between the two variables the understanding of the concept of knowledge management and its importance by researchers and between its contribution to the development of scientificresearch.

Table (12): Correlations between the adoption of knowledge management at CRAED and its contribution to the development of scientific research**.**

The 2 nd axis	**Pearson correlation (bilateral)**	**Sig.**	1	,521**
	N			,001
			38	38
The 3 rd axis	**Pearson correlation (bilateral)**	**Sig.**	,521**	1
			,001	
	N		38	38

Source : established by the researchers based on analysis of questionnaire results **** The correlation is significant at the 0.01 level (two-tailed).**

From the table we find that Pearson's correlation coefficient is equal to 0.521 and sig = 0.001 and which is less than the significance level of α = 0.05.Therefore ; There is a statistically significant correlation between the two variables the adoption of knowledge management at CRAED and its contribution to the development of scientific research.So ; there is a direct relationship and in the same direction (direction) which means the more the notion and the application of knowledge management adopted by CREAD the more scientific research will be developed.

3-Results of the investigation:

-The 1 st hypothesis which says that researchers know and understand the notion of knowledge management and its importance; and according to the results obtained after statistical analysis of the data, the indicators that correspond to this assumption being incorrect are:

a) The concept of knowledge management and this notion is not really known by all researchers with its true meaning or even its importance given that most of them just link it to the information system and ICTs without touch its knowledge and skills side of human capital which are their real reservoir.

b)CRAED by being a Public Establishment of a Scientific and Technological nature; is among those who adopt and apply the practices of knowledge management; and according to the results obtained after statistical analysis of the data, the indicators that correspond to this assumption being incorrect are: It is true that CRAED applies most of the strategic plans based on knowledge management such as specialized information systems; geographic and provides several electronic pages of its institutions to ensure the dissemination of knowledge; but this is done spontaneously without really embracing knowledge management, or even about encouraging knowledge exchange.

c) The performance of researchers and scientific research at CRAED level is

directly affected (positive / negative) by knowledge management practices and according to the results achieved after statistical analysis of data, indicators which corresponds that this assumption is correct are:
d)The application and adoption of knowledge management contributes to the development of scientific research by ensuring that researchers' knowledge and skills are updated. knowledge management develops new and innovative ideas dear to researchers.

12-Conclusion:

From our research in the health of CRAED and which focuses on the role of knowledge management in the development of scientific research while exposing the reality of scientific research in Algeria we could see the following results additional to that of the 'survey, and kind of suggestion for the scientific research center CRAED in order to carry out scientific research towards excellence;

so :

- The management and qualification of human resources and knowledge, which translates into the acquisition of skills in the field of scientific research, which contributes to improving its performance and productivity,
- Strategic management of researchers and the focus on training as a strategic knowledge management tool in order to raise the level of researchers,
- Capitalization, recruitment, and enhancement of knowledge in order to achieve excellence in scientific research and to promote the sector,
- Emphasize the importance of capitalizing knowledge on technological and human supports. (Avoided loss of knowledge),
- Take advantage of the rules, mechanisms, practical ideas and products of knowledge management in order to improve and advance scientific research in Algeria,

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