Global Journal of Engineering and Technology Advances
eISSN: 2582-5003
Cross Ref DOI: 10.30574/gjeta
Journal homepage: https://gjeta.com/

(REVIEW ARTICLE)

Check for updates

Common scientific research in the governmental organizations of the health sector of Hilla city: A reconnaissance study about obstacles and advantages

Ihsan Ali Al Ramah [1] and Khalid Hamza Shibli [2]

[1] *Department of Administration, College of Administration and Economics, University of Babylon, Babylon, Iraq.*
[2] *Department of Epidemiology and public health, College of Hammurabi's medicine, University of Babylon, Babylon, Iraq*,

Global Journal of Engineering and Technology Advances, 2023, 17(02), 001–011

Publication history: Received on 10 August 2023; revised on 28 October 2023; accepted on 31 October 2023

Article DOI: https://doi.org/10.30574/gjeta.2023.17.2.0193

Abstract

The study aims to brief the opinion of researchers who work in the governmental health sector in Hilla city, about their favorite specialties to prepare common health research among them, in addition to the most important difficulties and advantages of these researches by using three variables (privacy, benefit and problematic). Based on a method of studying the situation by distributing a reconnaissance questionnaire for a random simple sample of researchers from (100) individuals who work in the health sector in four selected governmental hospitals, results were obtained statistically by using (SPSS) using the following styles: (eligible medium, response tense and level of response).

Keywords: Scientific research; Health research; Joint research.

1. Introduction

1.1. Most important conclusions

- Concentrating on common health research work in specific sectors without others is attributed to carelessness and laziness.
- Most researchers prefer personal effort in preparing their research and avoid teamwork research.

1.2. While most recommendations were

- Holding conferences, sessions, and workshops that urge common health research work.
- Activating common mental blow-meetings among researchers in all health sectors to a meeting of thoughts and produce new ideas that serve research and development of the health sector.

1.3. The Study Problem

The countries of the developed world solve the problems of scientific research, especially health problems, through research groups, because of their great role in technology and the speed of obtaining constructive results in the service of research and development. Health scientific research and its desired results.

1.4. Study questions

- What is the amount of cognitive convergence in joint health research?
- Cognitive benefits of joint health research?
- What are the obstacles to joint health research?

* Corresponding author: Ihsan Ali Al Ramah

1.5. The importance of studying

Joint scientific research in general and joint health research, in particular, is a global trend carried out by countries at the level of individuals and groups because of its utmost importance in research and development. The importance of this study lies in the following:

- Highlighting the importance of joint health research and its significant role in solving many health problems.
- An attempt to urge health institutions to adopt joint health research in health research and development.
- Encourage researchers in the health field to carry out joint health research
- An important attempt to reduce the effort, time, materials, and laboratories involved in health research.

Objectives of the study

The study aims to achieve the following objectives

- Knowledge of the preferred cognitive disciplines in joint health research.
- Learn about the expected benefits of joint health research
- Standing on the obstacles to joint health research work

1.6. Study Approach

Case Study Methodology: The researcher will choose the health sector in the city of Hilla as part of the health sector in our country, Iraq, where he will make a field tour to distribute the questionnaire to researchers in the health field in the hospitals under study.

The limits of the study

- Objective boundaries: Joint scientific research in the health field.
- Spatial boundaries: the following hospitals in the city of Hilla:
  - Imam Al-Sadiq Hospital (pbuh)
  - Morgan Medical City
  - Hilla Teaching Hospital
  - Babel Teaching Hospital for Women and Children
- Time limits: (2018-2019).

1.7. Study population and sample

Society: Health researchers.

Community members: holders of) a higher diploma, master's, or doctoral(degree (in the health field.

Simple random sample: (100) researchers in the health field.

1.8. Data collection tools:

The questionnaire as well as paper and electronic sources in the field of the thematic limits of the study.

1.9. Study variables

Specificity - benefit - problematic)).

1.10. Statistical methods

(Weighted mean, response intensity, response level) Through the use of the statistical program (Spss).

2. Theoretical research

2.1. The introduction

The research partnership or joint research is a global civilized phenomenon that developed countries pursue towards solving various and thorny economic, health, and industrial problems. Therefore, it encourages joint scientific research

at the level of individuals and institutions so that it overcomes many problems and obstacles and gives scientific research strength and sobriety and the possibility of obtaining supportive and developed results for many The current and future problems, as we see them allocate funds and advanced devices for this, away from the randomness of scientific research at the level of individuals and what requires strenuous and minor effort and it's multiple needs for laboratories and equipment that can be reduced when scientific research has the characteristic of participation and constructive cooperation in community service. The study addressed its problem through the first two topics (Theoretical) where he dealt with the following titles:)scientific research - classification of scientific research - research partnership - knowledge cross-fertilization - benefits of research partnership - knowledge capital - advantages of knowledge capital - obstacles to scientific research - ethics of health research(and the second:) practical (The analysis dealt with the three axes of the questionnaire)specificity - usefulness – problematic(and through the analysis of the tables the results of the study were revealed, and then the study dealt with the conclusions and recommendations, then the margins came as they appear in the text and finally the appendix of the questionnaire.

2.2. Research

It is the result of an organized effort aimed at answering a question or a group of questions related to a topic, following man-made rules[1]It is an innovative procedural behavior according to various planning and execution processes to obtain targeted results[2]. The researcher can define scientific research as a scientific method according to basic rules that draw with high-technology information goals to reach specific results and solutions that serve the goals for which it was employed.

2.3. Classification of scientific research

The methods of the book differ in the classification of scientific research, as some divide it according to its nature, theoretical research, and applied research, and some classify it according to its methods into three types (documentary research, field research, and experimental research).

Some classify it according to the implementing authorities into (university academic research, specialized non-academic research[3] and scientific research may be classified according to specialization or nature, which is the most common, or based on design or data collection method... and others [4].

Scientific research can be classified according to the entity that performs it and through the researcher’s point of view as follows:

- Solo research: It is research carried out by individuals and all its requirements fall upon them. Local research dominates this matter, and it is reflected in personal or scientific matters.
- Research: It is research carried out by two or more researchers, which may reach three or a little more, and the work is joint between them according to a specific division that they pre-determine, and the joint work may be negative or positive in terms of fully completing its requirements.
- Research groups: This type is subject to various matters such as agreements and partnerships between different institutions, and the number of its members is large and has similar, close, or different specializations, and it may be at the level of small or giant institutions, cities, or countries.

Contractual research is the closest model to research partnership through contracting with ministries and companies to implement research and development programs, and the prevailing trend is contracting with large parties [5].

2.4. Research partnership

Define partnership: It is a timed process that is defined by a specific period and focuses on current cases to solve specific problems, while alliance and partnership between institutions is a kind of link that enhances cooperation between the parties over a long period as it focuses on future issues that are expected to benefit the parties of the alliance [6]. This relationship is a specific, continuous organizational relationship that enables the concerned parties to cooperate in the fields of research and development and knowledge economies through the participation of universities that have a direct relationship with conducting scientific research in terms of support and implementation with those parties that can be affected by the outputs of this research cognitively, technically and economically, and by concerted societal and research efforts to provide In-kind or non-in-kind inputs for the expected improvement in the quality of the research process [7].

The concept of partnership is broad and carries several meanings and dimensions, such as sharing ideas, experience, or money, as well as sharing effort at the level of planning, coordination, or implementation [8]. Therefore, it is a knowledge

cross-fertilization of ideas and capabilities. From our point of view, the concept of cognitive cross-pollination means the following:

2.5. Cognitive cross-pollination

It is the joint research or knowledge sharing carried out by specialists in similar or different scientific disciplines, and the resulting new knowledge capital that contributes to the development of scientific research in various institutions.

Therefore, joint scientific research is any study carried out by more than one researcher, and it is in research groups in the same specialization, close or different, and it may be local, regional, or global between various institutions and has great effects on research and development in the world. And be directed to solve major problems at the global level. Therefore, the major countries are urging the work of joint scientific research because of its great positive returns to humanity.

2.6. Benefits of a research partnership

There are benefits offered by the research partnership, which are as follows [9].

- Financial support is provided by other parties participating in research and scientific studies, which leads to financial sufficiency for the institutions concerned with the partnership.
- Expertise, scientific capabilities, and specialized cadres from other participating parties.
- It leads to modern technical inventions and improvement of services and production [10].

2.7. Knowledge capital

It is also known as intellectual capital, which is represented by the human capital of any institution, regardless of its activity or size, as it is a strategic resource for it and a competitive advantage in terms of helping it in innovation and continuous development of productivity and activating its various energies[11]. And the productive, professional, and interconnected institutions for the sake of productivity and creativity [12].

2.8. Advantages of knowledge capital

Knowledge capital has several advantages that make it a priority in all institutions, including health institutions, as follows [13]:

- Raise the creative capabilities to improve the productivity of the institutions and increase their financial income.
- Developing constructive relationships with clients and customers by producing distinguished services that raise its institutional superiority at various levels.
- Achieving the strategic objectives of the institutions by reducing work costs by high rates [14]

In light of the transformations of the competitive environment, global institutions have realized that knowledge capital is the only effective productive factor that can provide them with a continuous competitive advantage. Therefore, to reach creativity and institutional excellence, it is necessary to take care of this concept embodied in its creative human resources, and this will only be done by following strategies It helps them to transform into an economy of knowledge and creative minds because, in the light of the information economy, the continuous decline in the cost of operating information has led to it being a commodity available for sale and purchase, so it lost its competitive advantage, knowledge capital emerged to be the new competitive advantage for those institutions, for this resource to be a strategic resource, it had to be characterized by specific features, the most important of which It should be valuable and add value to the targeted institutions, as well as its scarcity and skill, as it enables it to increase innovations in record time, as well as the difficulty of easily imitating it from other institutions, as well as the difficulty of replacing it with an alternative [15].

Obstacles to scientific research

The most important obstacles to scientific research are the following [16]:

- The absence of teamwork in the completion of scientific research.
- The negative overlap between administrative systems and scientific research centers.
- Weak mechanisms for implementing scientific research policies.

- The absence of friction between researchers and international research centers.
- The industrial entities lack interest in linking industry with scientific research.
- The scarcity of media to market the results of scientific research to interested parties.
- The poor quality of knowledge marketing, its funding, support for researchers, and the adoption of their ideas.
- Lack of interest in researchers from the state and their preoccupation with the requirements of a decent life.
- The poor financial support that should be available for innovative and high-end research due to the low spending on scientific research compared to the national income.

There are Other obstacles to many Search Scientific in Countries Arabic The most important one is what Comes: [17]

- University research is biased toward the academic side more than the applied side
- The absence of clear strategies in the field of research.
- Focusing mainly on research and studies centers for government financial support.
- Poor scientific research skills among researchers [18].

(Muhammad Ibrahim) [19] adds other obstacles, which are:

- The reasons for the backwardness in research and the weak partnership with the private sector.
- Weak legislation based on specialized scientific studies.
- Decision-making, in most of them, does not follow the scientific steps of decision-making, and there is no scientific comparison between the different alternatives to options.

2.9. Health research ethics

When carrying out health research, there must be a set of ethical controls that must be taken into account, and they are as follows [20]:

- Researchers in the health field must abide by the regulations, instructions, and laws in the health field. The names of patients should not be published by any institution or person except for the research center that conducted the field research.
- Researchers do not exploit the health data collected from others for their interest.
- Stay away from bribes and suspicious matters to obtain the required health data.

3. Practical research

3.1. Questionnaire analysis

The questionnaire dealt with this topic through three main axes, each of which has its symbol in the statistical program (SPSS), as follows: (specificity (A) – usefulness (B) – problematic (C))

In addition, each axis includes main branches: the first axis (interest) includes three branches, the second (interest) ten branches, and the third (problematic) ten branches as well so that the number becomes (23) branches from the researcher's point of view. To take the opinion of the study sample on that from Through the triple Likert scale: (agree - to some extent - do not agree) Then the researcher made frequency tables according to the previous scale to work on some statistical methods and with the help of the statistical program (SPSS) these methods are (the weighted mean - the intensity of the answer - the level of the answer) To determine this, the hypothetical mean (2) was adopted as a result of the following calculation: (the hypothetical mean = total weights / their number).

Therefore, the scores for the three-point Likert scale are as follows:

Table 1 Triple Likert scale

Grades		
I agree	To some extent	I do not agree
3	2	1

It is clear that the scale is ordinal, and the numbers that enter into the SPSS program are weights in the following form (agree = 3, to some extent = 2, disagree = 1), and by calculating the weighted average by calculating the length of the period first by dividing (number of distances/number of Options (and the number of distances are 2-3 first distance, 1-2 second distance) where the distances between options = 2, while the number of options = 3, and applying the previous law results in (3/2) we get the length of the period and by (0.66) so that we get the data in the following table:

Table 2 period length

Weighted means	The level
3 _ 2.34	I agree
2.33 _ 1.67	To some extent
1.66 _ 1	I do not agree

The following is a discussion of the axes of this research:

The first axis: Privacy: I like to work in joint health research.

This axis deals with three branches related to the first objective of the study, which is (knowledge of the preferred cognitive specializations in the cross-pollination of healthy knowledge) as shown in Table (3), as follows:

Table 3 Preferred specializations in joint research

No	privacy	possibilities	I agree	To some extent	I do not agree	the sample	weighted mean	Response intensity %	answer level
1	Shared competencies		71	25	4	100	2.67	89	I agree
2	Convergence of common competencies		54	44	2	100	2.52	84	I agree
3	Spacing of the joint majors		20	25	55	100	1.65	55	I do not agree

Preferred cognitive disciplines in healthy cognitive cross-pollination

It is clear from Table (3) that:

The specializations that researchers in the health field prefer to work with in carrying out joint research are as follows:

- Researchers in the health field prefer to work with researchers whose specializations are similar to theirs and in agreement with the weighted mean of (2.67), which is higher than the hypothetical mean, which (2), and with a strong answer of (89%).
- Researchers in the health field also prefer to work with related specialties with a weighted average of (2.52). And at the level of the answer (agreed) on that from the study sample.
- Researchers in the health field do not like working with researchers who are far from them in their specializations, with a weighted average of (1.65), which is less than the hypothetical mean (2), and at a level that does not agree with that.

3.2. The second axis: interest: working in joint research has a major role in:

This axis deals with the benefits of working in joint health research through ten proposed benefits, as shown in the following table (4):

Table 4 Joint Health Research Benefits

No	Benefit possibilities	I agree	To some extent	I do not agree	the sample	weighted mean	Response intensity %	answer level
1	The emergence of new creative results in scientific research	79	21	0	100	2.79	93	I agree
2	Strength in academic relationships	72	26	2	100	2.70	90	I agree
3	strength in social relationships	51	41	8	100	2.43	81	I agree
4	Reducing the use of scientific laboratories	36	33	31	100	2.05	68	To some extent
5	Reducing the time to complete scientific research	55	35	10	100	2.45	82	I agree
6	Brainstorming and its Role in the Integration of Ideas	61	34	5	100	2.59	86	I agree
7	The emergence of new ideas for new research	84	16	0	100	2.84	95	I agree
8	Exchange of experiences between researchers	89	11	0	100	2.89	96	I agree
9	Integration and facilitation of work, whether the researchers are of different ages	53	43	4	100	2.49	83	I agree
10	Integration and facilitation of work if the researchers are of varying competencies	54	33	13	100	2.41	80	I agree

It is clear from Table (4) that:

The expected benefits of joint work in health research can be the following, according to the opinion of the researcher and the confirmation of the study sample through their answers and in a descending manner as follows:

- Exchanging experiences between researchers... as researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.89) and an answer intensity of (96%), at a level that agreed with that.
- The emergence of new ideas for new research... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.84) and an answer intensity of (95%), at a level that agreed with that.
- The emergence of new creative results in scientific research... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.79) and an answer intensity of (93%), at a level that agreed with that.
- Strength in academic relationships... researchers in the health field confirmed this through the strength of their answers, with a weighted mean of (2.70) and response intensity of (90%), at a level that agreed with that.
- Brainstorming and its role in the integration of ideas… researchers in the health field confirmed this through the strength of their answers, with a weighted mean of (2.59) and the intensity of an answer (86%), at a level that agreed with that.
- Integration and facilitation of work if the researchers are of different ages... researchers in the health field confirmed this through the strength of their answers with a weighted average of (2.49) and an answer intensity of (83%) and a level that agreed with that.

- Reducing the time for completing scientific research… researchers in the health field confirmed this through the strength of their answers, with a weighted mean of (2.45) and a response intensity of (82%), at a level that agreed with that.
- Strength in social relations... researchers in the health field confirmed this through the strength of their answers, with a weighted mean of (2.43) and response intensity of (81%), at a level that agreed with that.
- Integration and facilitation of work if the researchers have different competencies... researchers in the health field confirmed this through the strength of their answers with a weighted average of (2.41) and an answer intensity of (80%) and a level that agreed with that.
- Reducing the use of scientific laboratories... as the researchers confirmed this (to some extent) with a weighted average of (2.05) and an average response strength of (68%).
- The weighted mean of the probabilities of the previous benefits were all strongly involved in their weighted mean, which is higher than the hypothetical mean of the study, which is (2).

3.3. The third axis (the problems): there are obstacles facing joint health research...

This axis dealt with these obstacles and identified them as ten, according to the researcher's opinion, as shown in Table (5), which follows:

Table 5 Barriers to Work in Joint Health Research

No	problematic	possibilities	I agree	To some extent	I do not agree	the sample	weighted mean	The intensity of the answer	answer level
1	dependency on one side		63	23	14	100	2.49	83	I agree
2	Extortion for something		36	32	32	100	2.04	68	To some extent
3	Bullying from above		38	45	17	100	2.21	74	To some extent
4	The shyness of friends and acquaintances		22	52	26	100	1.96	65	To some extent
5	Common double vision		27	49	24	100	2.03	68	To some extent
6	Inconsistency in researchers' time		35	49	16	100	2.19	73	To some extent
7	Differences in researchers' scores in the promotion tables		31	54	15	100	2.16	72	To some extent
8	Love (ego) in some		54	34	12	100	2.42	81	I agree
9	Put my name in your search, then put your name in mine		51	26	23	100	2.28	76	To some extent
10	Not all research requires joint action		53	35	12	100	2.41	80	I agree

It is clear from Table (5) that:

The most important obstacles that impede the work of joint health research, in a descending manner, are as follows:

- Dependency on one of the parties... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.49) and the intensity of the response (83%), at a level that agreed with that.
- The love of (ego) for some... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.42) and the intensity of the response (81%), at a level that agreed with that.

- Not all research needs joint work... as researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.41) and an answer intensity of (80%), at a level that agreed with that.
- Put my name in your search, then I put your name in mine... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.28) and an answer intensity of (76%), and at a level (to some extent), which, as we note, is very close to the level of agreement.
- Authoritarianism from the higher authorities... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.21) and the intensity of the response (74%), at a level (to some extent), that, as we note, is very close to the level of agreement.
- Inconsistency in the time of the researchers... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.19) and the intensity of the response (73%), and at a level (to some extent), which, as we note, is very close to the level of agreement.
- The researchers' scores varied in the promotion tables... as researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.16) and response intensity of (72%), and at a level (to some extent), which, as we note, is very close to the level of agreement.
- Extortion for something... researchers in the health field confirmed this through the strength of their answers, with a weighted average of (2.04) and response intensity of (68%), and at a level (to some extent), which, as we note, is close to the level of agreement.
- Poor common vision... researchers in the health field confirmed this through the strength of their answers with a weighted average of (2.03) a response intensity of (68%) and a level (to some extent), that, as we notice, is close to the level of agreement.
- Shyness towards friends and acquaintances... researchers in the health field confirmed this through the strength of their answers, with a weighted mean of (1.96), the intensity of the response (65%), and the level (to some extent).
- We note from the foregoing that the barriers to healthy joint research are all the weighted average is higher than the hypothetical mean of the study, which is (2), except for the last barrier (10), which was weak and less than the hypothetical mean.

4. Conclusion

- Focusing the joint health research work on one side rather than the other, stemming from dependence and indifference.
- Many researchers prefer individual work in conducting their research and refrain from joint research work.
- certain researches do not bear joint research work, whether they are small, for example, or have special orientations and are defined by narrow scientific frameworks.
- Many researchers resort to exchanging roles in doing joint research by putting my name in your research and then putting your name in mine, which is one of the negative things in scientific research.
- In some cases, the higher authorities resort to putting their names in the joint research work without doing anything.
- There are some researchers whose time conflicts with other researchers, which leads to obstruction of joint research work.
- Researchers resort to individual work rather than joint work due to their need for promotions to obtain the highest points in the promotion tables. I think this is relative and the difference in points is not great.
- Extortion from some researchers to other researchers if they were forced to put their names in the joint research work as if it was something that others needed in following administrative orders or using laboratories or anything else.
- The researchers in the health field did not make any other observations in addition to what the researcher confirmed in his study questionnaire.

Recommendations

- Encouraging researchers to do joint health research work, especially in different specialties, would have a role in enriching knowledge and generating new ideas that serve everyone.
- Strengthening the link in the joint health research work between the government public sector and the private health sector in all fields.
- Forming joint research committees according to agreements and principles between the participating parties that guarantee the rights of all.

- Increasing material and moral support for research groups to ensure the quality of their outputs of ideas, creativity, patents, and solutions to many dilemmas in the health field related to vaccines, epidemics, new medicines, and others.
- Building health research centers associated with hospitals to have a role in research and development for many of the problems that hinder the health institutional work.
- Holding conferences, seminars, and workshops that urge joint research work.
- Activating joint brainstorming meetings between researchers in all health fields to be a forum for crystallizing ideas and coming up with new ideas that serve research and development in the health field.
- Encouraging researchers in the health field to conduct joint health research with Arab and foreign researchers to be the best source of new ideas and renewable and accumulated experiences.
- Seeking twinning between local and foreign hospitals through conducting joint research and studies that support the local health field.
- Strengthening the link between local hospitals and higher education institutions represented by medical colleges in the field of joint research work that is effective in serving the local health sector.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest is to be disclosed.

References

[1] Sami Arifij (and others) Scientific Research Methods and Methods - 2nd Edition - Amman: Dar Majdalawi, 1999 - p. 27.

[2] Al-Enezi, Saud Eid. — Obstacles to Scientific Research in Emerging Saudi Universities, Volume 38. - Studies Journal for Educational Sciences. - p. 1841.

[3] Kandilji, Amer. Scientific Research and the Use of Information Sources - 1st Edition - Amman: Al-Yazuri Scientific House, 1999, p. 49.

[4] Ibriam Samia. - Obstacles to Scientific Research in the Arab World and Proposed Strategies for its Development. - Ninth International Conference. - Algeria, 2015.- Scientific Research Generation Center. p. 2.

[5] Youssef bin Abdulaziz Al-Turki, and Saeed Muhammad Abu Al-Ela. - A proposed mechanism to support partnership between economic institutions and research institutions through the outputs of research and development. - King Abdulaziz University. - King Abdulaziz University Conference on Quality Assurance. - p. 357. www.imamu.edu.sa

[6] De la Garza & Others; "Teaming UP: Higher Education Business Partnerships and Alliances in North America"; The North American Leadership Seminar; Business and higher education in North America: Creating New Alliances. - Mexico: 37 Nov. 1997. http://www. Conahec, Drg.

[7] Kamel Muhanna. - Building a partnership of Arab civil organizations to face development challenges. - The Fifth Annual Report. - The Arab Network for Organizations. -p. 39.

[8] Al-Zubair, Fawzia Sbeit. The return in the community partnership in the field of scientific research to achieve the investment goals of businessmen. - pp. 288-289. http: // www. Partnership - Forum. Org.

[9] Al-Suwail, Muhammad bin Ibrahim. - The challenges of establishing an effective community partnership in the field of scientific research in the Kingdom of Saudi Arabia: the experience of King Abdulaziz for Science and Technology, King Abdulaziz University Conference for Quality Assurance, p. 24. www. Imamu.edu.sa

[10] Hanadi, Muhammad Omar Arafa. - Obstacles and challenges to effective community partnership in the field of scientific research in the Kingdom of Saudi Arabia: King Abdulaziz Science and Technology Experience, King Abdulaziz University Conference for Quality Assurance, p. 352. www. Imamu.edu.sa.

[11] Drucker, p.f.-knowledge worker productivity: the biggest challenge California management accounting. -vol. 78, no. 2, 1999.

[12] Laperche, blandine. - Knowledge capital and innovation in global corporations, EAEPE. - conference, November, Bremen, 2005.

[13] Osama Abdel Moneim, and the bishops, Abdel Wahhab. Intellectual capital and its impact on creativity and institutional excellence in Jordanian industrial companies. - Journal of Economic and Administrative Research. - P6, Amman: Zarqa Private University, 2009. _ p.99.

[14] Hussein Ajlan Hassan. Investing in knowledge capital between the unit of measurement and the problem of formation. Baghdad University College of Economic Sciences: Department of Material and Banking Sciences. http://iasj.net

[15] Osama Abdel Moneim, and the bishops, Abdel Wahhab. Intellectual capital and its impact ... previous source. pp. 96-97.

[16] Ahmed Dhaif. - Challenges facing the investment of the results of scientific research. http://omandaily.om

[17] United Nations Development Programme, Arab Knowledge Report 2009, p. 174

[18] King Abdulaziz University, a symposium entitled Obstacles to Scientific Research, College of Education, 1436 AH, available at coe.kau.edu.sa

[19] Muhammad Ibrahim Miqdad. - The role of the private sector in directing scientific research to the business sector. - An applied study, Gaza Strip: 2012.

[20] Al-Rabeawi, Saadoun, Hussein Abbas. - Marketing Health Services. - 1st edition. - Baghdad: Dar Al-Zakira, 2017.- p. 133.