The Scientific Research Impediments According to The Viewpoint of Karbala University Academics

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Abstract. Given the importance of scientific research, which has become very crucial in this era and an important task for the university professor. Scientific research has an advantage for the university professor in rising the annual evaluation degree and in promoting to a higher academic rank and many others. In addition, it contributes in increasing the degree of evaluation of the department in the faculty as well as growing a university rank. There are a number of obstacles facing the university professor on the personal level and on the organizational level. This study attempts to determine the type of obstacles that a university professor faces as a scientific researcher, and suggests effective solutions and recommendations that assist boosting the number of annual researches for the scientific researcher. A questionnaire was constructed, with a total of (24) items based on previous studies, divided into four dimensions approved for its construction on several available studies. This research presented a section of them. The questionnaire was applied to a random sample of (143) individuals, faculty members at the University of Karbala. The results indicated that highest average for the obstacles are the personal obstacles with a relative importance of 2.90, followed by the data-related obstacles with 2.5, then the administrative obstacles with 1.96 and the last financial obstacles with 1.40. Several strategies can be applied to develop scientific research, the results of the study indicated that the most important ways to develop it from the viewpoint of faculty members were to provide the necessary financial support to finance research procedures, provide financial rewards in exchange for publishing research, provide modern references, cooperation between colleagues of faculty members in conducting research Joint, the university’s participation in global databases, increasing cooperation between the university and the concerned authorities in scientific research (such as ministries, institutions, and companies).

Keywords: University of Kerbala, obstacles, scientific research.
1. Introduction

Universities are the most important social institutions that bear the qualification and development of human resources in society to be able to achieve social, economic and political development. For universities to be able to achieve this, they must provide moral and financial support to their management to fulfill different and appropriate roles. The success of the university in achieving its goals depends on what is available from its good faculty members, as the faculty member at the university is considered the mechanical energy of its institution and the axis of its massage [1] [2] [3].

Scientific research is an important resource of developing knowledge, as it is an active contributor to innovation and regeneration, and it has a role in the progressing and development of societies [2] [4]. This fact can be learned from the great interest that most countries in the world attach to scientific research. Due to science and scientific research, some countries were able to achieve great progress and move from backwardness to the ranks of developed countries, and the delay in scientific research in a society is one of the characteristics of underdevelopment and dependency in society [1]. The scientific research is one of the main functions of university education along with the two functions of education and community service. The scientific research has become a core part of the university work, and an important part of the requirements of the activity of the faculty member at the university [5]. Note that the university lecturer may have known through his academic studies many abstract scientific theories, and his scientific studies were crowned with a message in the applied scientific research that he performed at the end of his university studies. Many universities have adopted the requirement that a university lecturer conducts studies and research as part of the requirements for scientific promotion, and that a university teaching has obligations towards society, which are to address its problems by research, study, and investigation to reach effective solutions to these problems [2][6].

The extrapolation of the objective conditions experienced by the university lecturer, makes us tend to believe that there are obstacles that weaken and constrain his pursuit of the effective achievement of his first task that appears in scientific research. This is confirmed by the results of research, studies, and conferences that dealt with the conditions of university teaching.

several studies have been conducted about the obstacles to scientific research in Arabian universities, such as the study by [1], researchers studied the obstacles facing the production of research papers at the Bahrain Teachers College - University of Bahrain, the study relied on the data of the questionnaire collected from a sample of 28 members, and the results showed that the teachers need more time in addition to reducing the education load in order to raise the percentage of research production.

Further study by [2] worked on studying the obstacles facing faculty members in the College of Education - Princess Norah bint Abdul Rahman University and identifying the difference in obstacles depending on a set of variables (age, academic rank, scientific specialization, and financial status). The results of the study showed a high degree of validity and reliability on a sample of 69 members, where the average organizational obstacles were 2.7, followed by social obstacles 1.87, then the obstacles related to skills 1.7.

The study in [6] worked on a sample consisting of 240 participants from workers in the Faculty of Medical Sciences at Shiraz University. The study worked on six types of obstacles (financial, professional, administrative and executive, scientific and personal). The study showed a response of 91% to all six types of obstacles that It affects research activities, but 90% of them have identified financial barriers, and there were clear differences due to differences in gender, degree, and field of study, and assumed executive responsibilities.
In [5] studied the factors that delay scientific research at the University of Sabrata - Libya, and ways to improve the quality of research at the university. Where the study indicated the most important factors that produce scientific research are the lack of a strategic plan for research at the university, in addition to the lack of resources, the fund, and the appropriate infrastructure.

The researcher in [4] worked to estimate the degree of obstacles facing scientific research at the University of Jadara, where the study was conducted on a sample of 100 participants and a questionnaire consisting of 53 items with five axes: faculty member, jury research, scientific research skills, disseminate research, administrative and financial constraints. The results of the study found that the field of administrative and financial obstacles was in first place followed by obstacles of scientific research skills, obstacles related to research arbitration, obstacles in publishing the research.

Improving the quality of research requires an understanding of the barriers to conducting research. This study aims to diagnose the obstacles facing the university scientific researcher and provide appropriate recommendations to solve them in the light of the results of the research.

2. The Study Objective

This study's goal is to diagnose the key obstacles face university academics in conducting their scientific research to solve and remove those obstacles. Consequently, raising the rank of Kerbala University in scientific research.

3. Research Hypothesis

The study hypotheses are formulated as follows:

First hypothesis: There are no statistically important differences in the impediments facing the university academics in conducting their scientific research according to their specialization.

Second hypothesis: No significant differences statistically are there in the impediments facing the university academics in conducting their scientific research according to their academic achievement.

Third hypothesis: there are no statistically significant differences in the impediments facing the university academics in conducting the scientific research according to their academic rank.

4. Research Community

Kerbala University Academics represented the community of this research. This term represents "a university member whose main responsibilities are scientific research, teaching, etc., each one of them has an academic rank including (assistant lecturer, lecturer, assistant professor, professor)

5. Research Sample

The university academics from several colleges were included in this study. 143 of them replied to our survey. Table 1 show the distribution of the study sample to the study variables.
TABLE 1: Distribution of the sample population according to the study variables.

| Variable | information | Repetition | p.c.(ratio) |
|----------|-------------|------------|-------------|
| Sex      | Male        | 74         | 51.7%       |
|          | Female      | 69         | 48.3%       |
|          | Sum         | 143        | 100%        |
| Specialization | Scientific | 124        | 86.7%       |
|          | Humanitarian| 19         | 13.3%       |
|          | Sum         | 143        | 100%        |
| Years of service | More than 10 years | 97 | 67.8% |
|          | Less than 10 years | 46 | 32.2% |
|          | Sum         | 143        | 100%        |
| Academic rank | Assistant lecturer | 37 | 25.87% |
|          | Lecturer    | 64         | 44.76%      |
|          | Assistant Professor | 28 | 19.58% |
|          | Professor   | 14         | 9.79%       |
|          | Sum         | 143        | 100%        |
| Qualification | M.Sc.      | 66         | 46.2%       |
|          | Ph.D.      | 77         | 53.8%       |
|          | Sum         | 143        | 100%        |

6. Statistical Methods

The results extraction and analysis have been done by SPSS (Statistical Package for the Social Sciences). Several statistical methods were applied including frequencies, arithmetic means, T test, ANOVA tests, LSD test.

7. Study Tool

The survey on scientific research obstacles has been designed after revising several previous studies associated with the topic. The questionnaire as well as professional information comprised of 24 items with four dimensions including: personal impediments (5 questions), Data related impediments (8 questions), Organizational obstacles (7 questions), Financial obstacles (4 questions).

8. Stability of the Tool

The answers of above-mentioned items were categorized based on Likert pentagon scale (Match very strongly, Match strongly, Match moderately, Match weakly, Match very weakly).

The validity of the tool has been evaluated by three statistics department academics of the College of Administration and Accounting. The questionnaire items acceptance was 85%. A number of the questions were removed and some of them were rephrased according to the opinions of the evaluators. The reliability of the questionnaire was measured by the use of Cronbach’s alpha test which was 0.847. This value indicates a very high-reliability coefficient as illustrated in the table below:

TABLE 2: Cronbach’s Alpha test result.

| Reliability Statistics | Cronbach's Alpha | N of Items |
|------------------------|------------------|------------|
|                        | .847             | 24         |
9. Results and Discussion

As mentioned above that the study tool consisted of four dimensions. The first step in our statistical analysis was computing the arithmetic mean for each dimension to determine the influence of each dimension on the academics. Table 3 below depicted that Personal obstacles have the highest impact on the study members with (2.90), followed by data-related obstacles with (2.55). These results indicated that these dimensions also represent a critical factor facing the study members, since in Iraq getting data from any organization is a really difficult and sometimes impossible task. Moreover, there is no fund to get access to research papers or books which have no open access. However, Organizational, Financial obstacles mean was (1.96,1.40) respectively. This might reflect the lower impact of those impediments on academics.

**TABLE 3: Arithmetic means for each dimension.**

| Dimension                  | Mean |
|----------------------------|------|
| Personal obstacles         | 2.90 |
| Data related obstacles     | 2.55 |
| Organizational obstacles   | 1.96 |
| Financial obstacles        | 1.40 |

The second step of this research analysis was to check the first hypothesis "if there are statistically significant differences in the impediments facing the university academics in conducting their scientific research according to their specialization (scientific, humanitarian).

Independent sample T-test was used for this purpose the results of the test are listed in the table below:

**TABLE 4: Independent sample T-test according to specialization.**

| Dimension                | Specialization | N   | Mean | T value | P value |
|--------------------------|----------------|-----|------|---------|---------|
| Personal obstacles       | Scientific     | 124 | 2.88 | 0.45    | 0.59    |
|                          | Humanitarian   | 19  | 2.78 |         |         |
| Data related obstacles   | Scientific     | 124 | 2.59 | 3.87    | 0.00    |
|                          | Humanitarian   | 19  | 2.05 |         |         |
| Organizational obstacles | Scientific     | 124 | 1.977| 0.7     | 0.48    |
|                          | Humanitarian   | 19  | 1.8722|          |         |
| Financial obstacles      | Scientific     | 124 | 1.3528| 1.39    | 1.17    |
|                          | Humanitarian   | 19  | 1.6711|          |         |

Table 4 illustrated that there are no statistically significant differences in the obstacles that academics suffer from regarding their specialization in the following dimensions (personal, organizational, financial), since (p value) is bigger than th significance level (0.05). These results can ensure our research hypothesis. However, (p value) in data-related obstacles is less than 0.05, which indicates that there are statistically significant differences between the
responses of the groups (scientific, humanitarian) in this dimension with higher mean value to the scientific group (2.59). This can enrich the fact of the difficulty of getting data from organizations or downloading it from the internet due to bad internet in Iraq. In opposite of most of the humanitarian researchers get their data through surveys.

The third step of our analysis is to check the second hypothesis "if there are statistically significant differences in the impediments facing the university academics in conducting their scientific research according to their academic achievement (MSc., PhD.)."

For this purpose, independent sample T-test has been applied and the results of the test are tabulated in the table below:

**TABLE 5: Independent sample T-test according to academic achievement.**

| Dimension                   | Academic achievement | N  | Mean   | T value | P value |
|-----------------------------|----------------------|----|--------|---------|---------|
| Personal obstacles          | M.Sc.                | 66 | 2.8739 | 0.49    | 0.96    |
|                             | Ph.D.                | 77 | 2.8675 |         |         |
| Data related obstacles      | M.Sc.                | 66 | 2.4015 | -1.7    | 0.09    |
|                             | Ph.D.                | 77 | 2.6282 |         |         |
| Organizational obstacles    | M.Sc.                | 66 | 1.8160 | -2.7    | 0.07    |
|                             | Ph.D.                | 77 | 2.0891 |         |         |
| Financial obstacles         | M.Sc.                | 66 | 1.4470 | 0.96    | 0.33    |
|                             | Ph.D.                | 77 | 1.3506 |         |         |

Table 5 illustrated that there are no statistically significant differences in the obstacles which affect academics regarding their academic achievement in the following dimensions (personal, data related, organizational, financial), since (p value) is bigger than the significance level (0.05). These results can ensure our second research hypothesis.

The last step of this research was checking the third hypothesis "there are no statistically significant differences in the impediments facing the university academics in conducting their scientific research according to their academic ranks (assistant teacher, teacher, assistant professor, professor)". A One-way ANOVA test was conducted for this purpose. The results of this test are listed in table 6 below:

**TABLE 6: One-way ANOVA test results according to the academic rank**

| Dimension             | Variance resource | Total squares | Freedom degree | Mean squares | Calculated F value | P value |
|-----------------------|-------------------|---------------|----------------|--------------|--------------------|---------|
| Personal obstacles    | Between groups    | 4.816         | 3              | 1.605        | 2.786              | .043    |
|                       | Within groups     | 80.093        | 139            | .576         |                    |         |
| Data related obstacles| Between groups    | 4.407         | 3              | 1.469        | 2.369              | .073    |
|                       | Within groups     | 86.185        | 139            | .620         |                    |         |
| Organizational        | Between groups    | 5.523         | 3              | 1.841        | 5.517              | .001    |
| obstacles             | Within groups     | 46.383        | 139            | .334         |                    |         |
| Financial obstacles   | Between groups    | 0.444         | 3              | 0.148        | 0.417              | .741    |
|                       | Within groups     | 49.358        | 139            | 0.355        |                    |         |
The above table indicates that there are no statistically significant differences in both data-related and financial obstacles owing to p value (0.073, 0.7) respectively. However, p-value was significant in both personal and organizational dimensions with (0.04, 0.001) respectively. This indicates the statistically significant differences in the study sample responses regarding those dimensions according to the sample academic rank. Therefore, LSD test was applied as a post hoc test to uncover those differences as illustrated in table 7 below:

| TABLE 7: LSD test results |
|---------------------------|
| **Dimension** | **Rank(I)** | **Rank(J)** | **N** | **P value** |
|----------------|--------------|--------------|-------|-------------|
| Personal obstacles | Teacher Assistant | Professor | 37 | 0.02 |
| | Teacher | 64 | 0.005 |
| | Assistant Professor | 28 | 0.01 |
| | Professor | 14 | |
| Organizational obstacles | Teacher Assistant | Professor | 37 | 0.000 |
| | Teacher | 64 | 0.010 |
| | Assistant Professor | 28 | 0.003 |
| | Professor | 14 | |

Table 7 depicts the significant differences among the participants who have academic rank (professor) and all of the other ranks in the personal dimension. This might support the probability that professors have much skills and experience supporting them in conducting their research. Similarly, the organizational dimension also indicates the differences among the same academic ranks. This result might be due to the probability that some professors have much responsibility in teaching and supervising M.Sc. and Ph.D. students as well as other tasks.

10. The Study Recommendations

In light of the study objectives and results, the researchers recommend the following:
- Raising the research efficiency of researchers through conducting specialized courses conducted by senior researchers with experience in publishing in international journals.
- Establishing financial support allocations for the scientific research for faculty members.
- Supporting researches and researchers by scientific awards and grants, which encourage them to improve and raise the work of scientific researchers.
- Encouraging research cooperation between faculty members at the university and local, Arab or international universities.
- The establishment of specialized research centers at the university level, with the task of coordinating with social institutions (ministries, companies, and the private sector).

11. References

[1] H. Fawzi and A. Al-Hattami, “Faculty Production of Research Papers: Challenges and Recommendations,” *Int. J. Humani. Soc. Sci.*, vol. 7, no. 2, pp. 221–228, 2017.
[2] N. A. Algadheeb and M. A. Almeqren, “Obstacles To Scientific Research In Light Of A Number Of Variables,” *J. Int. Educ. Res.*, vol. 10, no. 2, pp. 101–110, 2014.
[3] A. Nejatizadeh, M. Sarnayzadeh, K. Khamouji, R. Ghasemi, and N. Nakhodaei, “Constraining Factors of Research among faculty members at Hormozgan University of Medical Sciences,” *Electron. physician*, vol. 8, no. 5, pp. 2405–2409, 2016.
[4] H. M. Hatamleh, “Obstacles of Scientific Research with Faculty of University of Jadara from Their Point of View,” *J. Educ. Pract.*, vol. 7, no. 33, pp. 32–47, 2016.

[5] B. Journal, E. Vol, E. Centre, and D. Uk, “an Investigation Into the Factors That Impede Scientific,” vol. 5, no. 12, pp. 91–100, 2017.

[6] Z. Karimian, Z. Sabbaghian, A. Salehi, and B. S. Sedghpour, “Obstacles to undertaking research and their effect on research output: a survey of faculty members’ views at Shiraz University of Medical Sciences,” *East. Mediterr. Heal. J.*, vol. 18, no. 11, pp. 1143–1150, 2012.