

Academic and Administrative Obstacles Facing Scientific Research in Higher Education Institutions in the Sultanate of Oman: An Analytical Quantitative Study

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ABSTRACT

The aim of this study was to investigate the most important academic and administrative obstacles facing scientific research in the Sultanate of Oman. It also aimed at revealing the impact of some independent variables, such as gender, age, type of institution, field of study, and country of education. The study was conducted on a sample of 714 researchers and academics working in institutions of higher education in various governorates of the Sultanate. The study is a descriptive research. In order to characterize and diagnose the phenomenon in a profound and comprehensive way, a questionnaire was developed as the main instrument for data collection. The questionnaire was devised analytically in line with the objectives and questions of the study. The results of the study demonstrated that the most important administrative obstacles facing scientific research in the Sultanate is the large number of hours of teaching and the huge administrative loads. The results also indicated that the lack of sabbatical leaves for the academics and the difficulty of obtaining them constitute another most important academic obstacle. It was also found that the variables such as ‘the type of institution’ and ‘the country of graduation’ are among the most influential independent variables in academics and researchers’ views with respect to the academic and administrative obstacles they face while they attempt to conduct their scientific research.

Keywords: Scientific Research, Administrative obstacles, Academic Obstacles.

Introduction

Scientific research is a significant means for development and one of the pillars in the process of modernization leading societies to future prospects. Many societies have already come to recognize the importance of scientific research, and it has become a source of great interest. According to Yaqoot (2007), the issue of science and technology is a prominent feature of a country’s development. In order to establish the rules and principles of development, many countries rely on scientific research. The existing literature on the topic puts due emphasis on the high amount of expenditure on scientific research in developed countries compared to that in developing ones. For example, the contribution of America to global research and development in 2013 was approximately 32.4 billion dollars, while Europe’s contribution to the global expenditure rate was 22.7 billion dollars. On the other hand, statistics show a decrease in the scientific research in the Arab world and other developing countries due to the problems they faced in financial resources and annual budgets. According to the report published by UNESCO in 2015, the contribution of all Arab countries was only 1.1 billion dollars of total global expenditure on research.

Arab countries appear to be suffering from low levels of contribution to global research production. The number of researchers is so low, and there is a decline in the number of research studies conducted annually. As indicated in the UNESCO Science Report (2015), the number of Arab researchers compared to researchers in the developed countries shows a large gap. The share of Arab countries is just 149.500 researchers while there are 1.721.000 researchers in the American continent. Statistics in the same report, related to the share of Arab countries in the scientific publications

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compared with the global statistics, show a decrease in these countries which reached 2.4 percent compared to 32.9 percent for the American continent and 39.3 percent for Europe. Several reasons, such as 'lack of clear policies for conducting research', the absence of goals and priorities', 'the shortage of research centers' and 'the dearth of resources necessary for scientific research', in the Arab world have caused the problem. Furthermore, 'the bureaucracy within the institutions', in addition to 'the limited use of the results of scientific research', as there is a disconnection between the research studies done and the problems existing in the society, and 'the weak levels of scientific research in the Arab world compared to those in the developed countries' (Darwish, 2013) play significant roles in this scene.

Review of the Literature

Following a thorough review of the literature on scientific research and the administrative and academic obstacles faced by researchers, and based on a careful reading of relevant studies, the main findings of previous studies which are related to the present study will be highlighted. The studies will be presented in chronological order.

The study done by Al-Mahboob (2000) aimed at identifying the problems of scientific research facing the faculty members of King Faisal University. The approach adopted in the study was analytical descriptive. The results showed that the most important problems facing the scientific research is the lack of financial resources. Moreover, teaching load, publication issues, lack of facilities, and their level of satisfaction with the University's support of scientific research affect the research performance of faculty members.

In his descriptive study, Jaradat (2002) administered a questionnaire to a sample of 874 faculty members in a number of Jordanian universities. He pointed out that the most important obstacles facing scientific research in Jordanian public universities is the imbalance between the University's plans and objectives, national development plans and needs, and the individual work of the scientific research institutions without any interconnection among them. Additionally, factors such as lack of financial support sufficient to conduct scientific research and the fact that most of the faculty members' time is spent in teaching had also their impacts on getting entangled with research activities.

In his short report, Ernest (2003) highlighted three important obstacles in conducting research studies in Medicine. The obstacles in terms of significance are 'financial', 'methodological', and 'ethical.' As to the first obstacle, he pinpoints that in most countries research funding is on a very small scale. Next, methodological obstacles in conducting research in medicine are, for example, the challenges as to what is an acceptable 'placebo' control for a trial of massage treatments. The ethical obstacles facing research activities are the ones which provide hesitation in applying certain medicine of physical activities because the patients must be assured that what is being done is as necessary for them as the real treatment.

In his study, Hemsley-Brown (2004) attempted to identify obstacles on the applications of scientific research. He used databases available on Internet from Canada, America, Australia, Britain, and other European countries. He found that the most important obstacles to the use of scientific research are 'the weakness of the mechanism to reach the results of research', and 'the lack of time to do so.' It was also found that there are criticisms leveled against the importance and significance of the topics being investigated, as well as the existence of a large gap between the objectives of researchers and the users' needs of the findings of such research studies.

Al-Fatli (2008) conducted his study with the aim of identifying the obstacles faced by the researchers in Iraqi universities. He administered a questionnaire to 200 faculty members at the University of Qadisiyah. He found that financial constraints are at the top of the obstacles faced by the university researchers, since the financial support constitutes an important basis of scientific research. The study also highlighted the importance of some obstacles with different administrative and academic forms in creating additional challenges for faculty members which prevent them from doing research activities.

Solodnikov (2008) intended to diagnose the current state of scientific research in higher education in Russia and investigated the problems it faces. He used his personal experience and discussions available on the net. He concluded that the most important problem facing scientific research is the fact that staff members are overloaded with teaching activities.

The study recommended that it would be desirable to reduce the faculty members' teaching load so that they can have enough time to get involved in conducting scientific research.

Sayyar (2011) conducted a study aiming at understanding the reality of scientific research in the Arab world and the characteristics of scientific research in it. The study concluded that the scientific research environment in the Arab world is not conducive to research, creativity and innovation on all political, economic, social and cultural dimensions. Moreover, the level of academic freedom of the researchers is very low, there is a weak mechanism for marketing research centers' products, and academic staff members do not have high motivation and interest. The study also found that the dominant culture does not encourage scientific research and researchers are not fervent enough for doing research studies.

Al-Mohammed (2011) also conducted a study in which she aimed to identify the reality and impediments of scientific research from the point of view of faculty members in the university. A sample of 168 faculty members from Humanities and Science Faculties of the university responded to the items of a questionnaire. The study found that the obstacles related to the administrative aspect are the highest in terms of the degree of influence on the scientific productivity of the faculty members, followed by the obstacles related to the technical aspect, and the researcher-related obstacles, and finally the obstacles related to the subject of research.

Taskeen, Shehzadi, Khan, and Saleem (2014) investigated the researchers' perceptions of the difficulties facing junior researchers in the scientific research process in Pakistan. The study was conducted on a sample of 100 staff members of Lahore University using a questionnaire as a data collection tool. They found that the most important difficulties junior researchers have during the preparation of scientific research is the lack of supervision provided for them in addition to the high costs. They also reported that it is necessary to allocate more time and energy to conducting research studies and writing research papers. Furthermore, the results highlighted the difficulty of having an access to previous studies and related literature.

Farzaneh et al. (2014) aimed to examine and investigate the limiting factors for research from the perspective of students and teachers. A sample of 50 teachers and 200 students randomly selected from different academic disciplines in the medical sciences acted as the participants of their study. The results showed that the most important obstacles from the students' point of view were the existence of complex administrative systems related to the process of research, while the most important obstacles to research from the point of view of teachers was the lack of time due to the heavy workloads of academic work, and weak financial support for research.

Mansoor (2015) investigated the most important difficulties encountered by the researcher in the field of human sciences in the Faculty of Arts. He administered a questionnaire to 11 faculty members, who had been selected according to non-probability sampling. He found that the most important difficulties encountered by researchers in the field of human sciences are 1) the research studies are not beneficial with respect to solving problems and paving the way for the development of their field of study, 2) the procedures related to participation in seminars and scientific conferences are inflexible, and 3) no particular budget is allocated for conducting scientific research at universities.

In their study, Heidarnia and Haj Ali (2015) attempted to identify the obstacles on the path to conducting the action research by the primary school teachers in Bijar, a city in Western Iran. The population of the study consisted of 754 primary school teachers employed in the education department in the academic year 2013-14. The required data was collected via a researcher-made instrument. Their findings indicated that the individual obstacles to conducting the action research based on priority included: educational, attitudinal and skill obstacles respectively. The priority in organizational and skill obstacles involved motivational and structural obstacles. In analyzing the environmental obstacles, only one factor, called the lack of resources and facilities, was identified. In general the results of this study suggested that in the case of absence of obstacles, teachers attempt to conduct research, and in this respect there is no difference between male and female researchers.

Pischke et al. (2017) aimed at investigating challenges faced large international interdisciplinary research projects. The study employed a questionnaire to collect the required data. It was administered to the research team at National Science Foundation Partnerships for International Research and Education (NSF-PIRE). The results of the study showed that there

were some barriers facing interdisciplinary international researches. Examples of these barriers are 'integration', 'language', 'fieldwork logistics', and 'time commitment'. The study recommended an adequate amalgamation of cultures, disciplines, and languages in order to facilitate communication and overcome any challenges that may arise in interdisciplinary research.

The study conducted by Al-Hatamleh (2016) aimed to estimate the degree of the existence of scientific research obstacles among faculty members in Jadara University in Jordan. The study was carried out on a sample of 100 faculty members. A questionnaire was employed as an instrument to collect the data. An analytical descriptive approach was adopted to analyze the data. Results of this study showed that financial and administrative obstacles, scientific research skills, and research arbitration are the most important obstacles facing scientific research at that University. Results also indicated that there were statistically significant differences among research obstacles according to variables such as 'college', 'academic rank' and 'years of experience'. The study recommended that it was essential to improve faculty members' scientific research skills.

It becomes clear from evaluating the previous relevant studies that many research studies have been done to investigate the reality of scientific research and the obstacles facing it. In these studies incentives have been disclosed and the most important solutions have been proposed to promote conducting research studies at academic centers. It is obvious that the studies attempt to put enough emphasis on the problems confronting scientific research and to show the obstacles from the perspectives of both academic and administrative aspects which affect the level of developing research activities and preventing researchers and academics from their scientific research.

Moreover, what makes this study different from other similar ones is that it focused more on studying specific aspects related to the obstacles of scientific research, i.e., academic and administrative obstacles were of major concerns in the present study. These obstacles seem to be of paramount importance on the path of conducting scientific research studies which are expected to bring about fruitful outcomes leading to the development of individuals, institutions, as well as nations.

Theoretical Framework

Scientific research is a fundamental principle of the development process in various societies and an effective engine for all its sectors (social, economic and cultural) through which the scientific heritage is used and knowledge is produced, enriched and used in different fields. However, the process of advancing scientific research and its development have been accompanied by a number of obstacles and difficulties, which have prevented researchers to reach their objectives. The difficulties related to the academic and administrative aspects represent one of the most important obstacles that affect the scientific research process and cause the failure of its growth and development. Moreover, the absence of a clear strategy for the scientific research process, and the lack of coordination among institutions and research units have intensified the problem. It is held that members of an organization respond to certain situations in which they find themselves in the process of their interaction within the organization, where they spread this response to other positions that are similar to the positions previously responded to, A departure from this framework would constitute a functional impediment that would prevent the organization from achieving its objectives and purpose (Darwish, 2013, p. 64).

In this context, the theory of pattern tends to emphasize that any functional pattern is based on its performance in the way that each part plays its role while relying on other parts, and thus highlighting functional support among the parts represented by the format and interconnections, and between parts and layout as a whole. Therefore, the social processes, that take place within the framework of the pattern and the resulting relationships, represent behavioral models resulting in the feeling of individuals to adopt each other, and to link their ideas, and the interdependence of the activities that they do during the process of interaction. These activities will lead to structural interdependencies in functional relations among them. In this context, Darwish (2013, p. 96) asserts that Parsons and his colleagues present universities as a structural pattern that contribute to the balance of the overall pattern of society and its prominent role in scientific research and development as a bureaucratic institution with a variety of administrative functions as well as academic duties and

scientific research. It has been emphasized that the relationship between the administrative processes on the one hand and the academic and scientific research activities within this institution, on the other hand, is a reciprocal, interrelated and strong relationship, on the path of which there are a number of difficulties and administrative complications.

A researcher may find himself faced with a very bureaucratic system that tends to give priority to the implementation of tasks rather than to the development of the organization, and to diminish the importance of scientific research within the framework of the institution. This bureaucratic organization is often autocratic and is reluctant to accept the opinions of its parts or components. This is what Weber discussed when dealing with the concept of "hierarchism" within bureaucratic organizations. He stressed the importance of coordination among activities within the organization to achieve its objectives (Darwish, 1963: 65).

In general, scientific research will continue to be one of the finest activities of the human mind with a significant role in industry and development of life, as well as the consequent economic, social and cultural gains, and ultimately in the development of societies. Despite the great importance of scientific research, as a structured objective effort, and its implications and diversity, it cannot be carried out in the required form without the availability of many resources and the foundations supporting its growth and development.

The Study

Statement of the Problem

The institutions in the higher education are the best places for conducting scientific research and have, in fact, an active role in leading the scientific research movement in the society as the environment and the grounds are ready for carrying out scientific research of various kinds. There are also highly qualified human resources who can have a significant role in the development of human knowledge both intellectually and socially. However, scientific research efforts in the Arab world, including the Sultanate of Oman, are still weak and are governed by a range of considerations related to administrative, academic, social and cultural aspects. This has raised the concerns of the academic community and all those who are active in scientific research and development, because of the associated implications of this phenomenon.

Accordingly, the problem of the present study is to investigate and examine the challenges that may face researchers and academics in the various higher education institutions in the Sultanate of Oman, especially administrative and academic ones. Because there are various repercussions, especially in the view of the magnitude of the challenges posed by the transformation process in the Omani society, and what can be accompanied by cognitive and scientific needs that require scientific research mobility. In light of the foregoing, the idea of this study has been formulated in an attempt to gain more knowledge about the nature of the academic and administrative obstacles that prevent the academics and the researchers working in higher education institutions in the Sultanate of Oman to enhance their scientific production. Moreover, attempts will be made to find solutions to the problem and to propose certain recommendations.

Research Questions

In order to address the abovementioned problem, the following research questions have been formulated:

1. What are the most important academic obstacles facing scientific research in the Sultanate of Oman?
2. What are the most important administrative obstacles facing scientific research in the Sultanate
3. What are the effects of variables such as gender, age, type of institution, specialization, and the country from which the last degree has been obtained on the variety in the attitudes of the study sample to the academic and administrative obstacles facing them?

Objectives of the Study

This study has been designed and conducted in order to comprehensively investigate the academic and administrative obstacles facing scientific research. Moreover, it intends to offer an in-depth and accurate analysis of these obstacles. It also seeks to provide an adequate knowledge about these aspects. Furthermore, the roles these obstacles have in creating

more difficulties and challenges before researchers and academics in the Sultanate of Oman will be pondered upon.

In short, the study aims specifically at:

1. Monitoring and identifying the most important academic obstacles facing scientific research in the Sultanate.
2. Disclosing the most important administrative obstacles facing scientific research in the Sultanate.
3. Determining whether there is an effect on some of the independent variables (gender, age, institution type, specialization, and the country from which the last degree has been obtained) in the variety of the attitudes of the study sample towards the obstacles of scientific and administrative research.

Significance of the Study

The importance of this study stems from the fact that scientific research is one of the main pillars in the all-encompassing development process of a nation. It attempts to draw a realistic picture of the nature of the academic and administrative challenges and obstacles facing researchers and academics which hold them back from the development and growth of their scientific achievements, especially in its specialized institutions such as higher education institutions in the Sultanate of Oman. The importance of the study lies in the fact that it investigates the extent of the impact of some variables related to the characteristics of academics and researchers in their different attitudes towards the obstacles under study. This would provide a precise description of these obstacles and the most important variables that contribute to the divergence of views of researchers and academics around them. More specifically, the importance of the study is in its attempt to provide a clear diagnosis of the most significant academic and administrative obstacles facing scientific research, which may benefit decision makers and those involved in the production of knowledge and scientific research and help them to develop precise plans and objective strategies that will enhance the research process.

Limitations of the Study

The study was conducted on researchers and academics in the Sultanate of Oman during the first half of 2017.

Definition of Key Terms

Scientific Research, Scientific research is defined as an organized intellectual process by a person called the researcher who has investigated the facts about a particular problem called the subject of the research, by following an organized scientific method called the research approach in order to arrive at suitable solutions (Impotent and Girls, 2003, p. 5).

Scientific Researcher, Scientific researcher can be any individual at the university who holds a high scientific qualification and conducts a thorough investigation of the general facts and principles in the light of which, after verification, a problem can be solved (Al-Fatali, 2008: 231). Moreover, a researcher can be defined in this study as persons who hold a Doctorate, Master's or Bachelor's degree, working at a higher educational institution in the Sultanate of Oman, namely universities, colleges and institutes, either governmental or private, and performing teaching and conducting research duties.

Obstacles of Scientific Research, Obstacles of scientific research means difficulties and challenges that prevent the researcher from conducting and writing scientific research of different types and hinder the growth and development of the research process. In this study, it is defined as academic and administrative difficulties that hinder the scientific research process of researchers and academics working in institutions of higher education, and prevent them from achieving scientific research, or limit their research activity.

Method

A descriptive method has been applied in the present study

Participants

The participants in this study are 714 researchers and academics in the Sultanate of Oman. The high majority of participants were male (male=473 and female=226, and 15 of the participants did not indicate their gender in the questionnaire). The age range of the participants was mainly 30 to 60+ and one fourth of them were from private universities. Among the participants who answered the questionnaire, about 20 percent were in the engineering related fields. As to where the participants had obtained their last university degree it was found that 30 percent of them had obtained their degree from Arab countries and the remaining 70 percent from Europe, North America, Australia and others. Details of the participants' demographic features are presented in table 1 below.

Table 1 : *The Demographic Features, Frequencies, and Percentages of the Participants*

Features	Response	Number	Percentage
Gender	Male	473	66.2
	Female	226	31.7
	No indicated*	15	2.1
	Total	714	100
Age	29 and less	72	10.1
	30-39	260	36.4
	40-49	228	31.9
	50-59	104	14.6
	60 and more	33	4.6
	No indicated*	17	2.4
	Total	714	100
Institute type	private university	182	25.5
	Other government bodies and colleges	129	18.1
	Sultan Qaboos university	140	19.6
	Private colleges	70	9.8
	Not indicated*	193	27
	Total	714	100
Field of study	Engineering sciences	140	19.6
	Medical Sciences	49	6.9
	Social Sciences	90	12.6
	Educational Sciences	109	15.3
	Natural Science	48	6.7
	Management and Economics Sciences	83	11.6
	Other	153	21.4
	Not indicated*	42	5.9
	Total	714	100
Where the last degree obtained	Arab country	214	30
	Western Europe	126	17.6
	Eastern Europe	32	4.9
	North America	64	9
	Australia	35	4.9
	Other	192	26.9
	Not indicated*	51	7.1
	Total	714	100

* No data was available

Table 1 shows that male participants outnumber female ones, that is, 66.2 percent are males and only 31.7 percent are

females. This difference affects social and cultural features. However, the study is mainly concerned with the academic and administrative obstacles facing them. Most of the sample members are male academics and researchers, who usually tend to express their beliefs related to their masculine social type. Studies have reported the reasons for the low percentages of females in the labor sectors as being more involved in household responsibilities and maternity duties as the main roles females should play in society (Shehata, 1999).

The table also indicates that the large majority of respondents fall between the age groups of 30-39 and 40-49, with percentages reaching 36.4% and 31.9% respectively, while 60 years and above has the lowest representation rate, i.e., only 4.6%. This seems to be quite justifiable with respect to the rules and regulations of recruitment in higher education institutions in the Sultanate of Oman. Therefore, more than two-third of the academicians of the study sample are between 30 to 49 years of age.

As indicated in the above table, most of the respondents are from the engineering related disciplines. The percentage of those surveyed is 19.6%. Next were researchers and academics specialized in educational sciences, 15.3%, followed by those in social sciences, i.e., 12.6%. On the other hand, the results show a decrease in the representatives of Medical and Natural Sciences in the sample as they did not exceed 6.9% and 6.7% respectively. In general, there is an almost consistent distribution of the sample members according to their academic specialization.

Furthermore, the results shown in the table reveal that most of the researchers and academics under study had obtained their latest degrees from Arab countries, that is, 30.0% of them. This was followed by Western European graduates by 17.6%, while those who had obtained their degrees from North America reached made only 9% of the total sample. Academics and researchers graduated from Australia were the least represented, i.e., only 4.9%. It should also be reported that more than a quarter of respondents, comprising 26.9% of the participants, said they had obtained their last degree from other countries.

The results also show that a quarter of the researchers and academics, 25.5%, of the study sample work in private universities, while the percentage of those employed at Sultan Qaboos University, as the only state university in the Sultanate, is the second highest representation, 19.6%. The researchers and academics working in other governmental bodies and colleges accounted for 18.1% of the participants. Academic staff and researchers in private colleges constituted the lowest representation in the sample of the study, 9.8%. The results of the table show a nearly consistent distribution of the representation of all institutions of higher learning in Oman, which can be reflected in the credibility and generalizability of the results.

Instrumentation

Three researcher-made questionnaires, one for demographic features of the participants, one for academic obstacles for conducting research, and one for administrative ones were used in this study. The demographic questionnaire asked about the participants' gender, age, institute type, field of study, and where the participants obtained their last academic degrees. The two other questionnaires were based on a five-point Likert scale. The questionnaires were prepared based on a critical review of available sources and previous studies related to the subject of the study. The questionnaires included a variety of items. The one devised for knowing about academic obstacles contained 14 items and the one about administrative obstacles contained 19 items. The items in the questionnaires covered a wide range of different aspects of academic and administrative obstacles facing academics and researchers in the institutions of higher education in the Sultanate of Oman. The questionnaire was constructed according to the studies conducted by Jaradat (2002), Saleh (2003), Al-Mahboob (2000), Al-Hatamleh (2016), and Taskeen et al. (2014).

Questionnaire Validation

After the items of the questionnaire were devised by the researchers, it was reviewed by 18 academics and specialists from the Faculty of Arts and Social Sciences at Sultan Qaboos University in order to check for its validity. Based on their comments and suggestions, the required amendments were made to some of the items. If there were a less than 80 percent

agreement on any of the items, the items were modified or excluded from the questionnaires. In this way, the final versions of the questionnaire were made.

The results of the statistical analysis of the questionnaires showed a high reliability index. The total Cronbach Alfa coefficient of the questionnaires turned out to be 0.926, which shows a very significant reliability. The Cronbach's Alfa reliability index of the questionnaire for the academic obstacles was 0.90, and for the one for administrative obstacles was 0.952. These show a very high reliability of the instrument which paves the way for the generalizability of the findings.

Statistical Analysis

A set of statistical measures were employed for doing data analyses. The statistical measures used were Range, One Sample *t*-test, and Multivariate Analysis. The descriptive analysis of the responses according to the five-point Likert scale was done. The participants were to choose 'strongly disagree', 'disagree', 'not decided', 'agree', 'strongly agree', respectively shown by values 1, 2, 3, 4, and 5. Based on the fact that the highest arithmetic value would be 4, which is the subtraction of 1 from 5, the participants' responses were categorized into three levels of high, mid and low. The values of 3.68 and over were taken as high, meaning that the participants showed a strong satisfaction, between 2.34 to 3.67 showed medium satisfaction and values from 1 to 2.33 represented low satisfaction.

Results and Discussions

This part of the study seeks to uncover and explain the opinions and attitudes of the participants regarding the obstacles of scientific research from the academic and administrative perspectives. These obstacles are believed to have an effective role in hindering the research achievement of academics and researchers in institutions of higher education. They have been reviewed and presented in a rank order, which is from the most important to the least important according to the statistical means of the responses given by the participants to all the items of the questionnaires. One sample *t*-test was used to determine whether there were differences. Moreover, the results of the study are based on a multivariate analysis.

The Participants' Attitudes towards Academic and Administrative Obstacles

The results to be reported in the following sub-sections highlight the most important academic and administrative obstacles facing researchers and academics who work in higher education institutions in the Sultanate of Oman. In order to check for any possible statistically significant difference, the results of a *t*-test at the significance level of 0.05 have been sought for.

Academic Obstacles

As stated earlier, the questionnaire for the academic obstacles had 14 items which asked about the participants' various ideas. Table 2 shows the number of responses to each item, the means, and the *t* values, along with the significance indices. One sample *t*-test was employed in order to investigate whether there were statistically significant differences, at the significance level of 0.05, among the participants' perspectives regarding academic obstacles

Table 2: *Researchers and Academics' Ideas about Academic Obstacles According to the Degree of Importance*

No.	Questionnaire Items	Number	Mean	T	Sig
1	Lack of sabbatical leaves for academics and difficulty in obtaining them	675	3.390	8.752	0.000
2	Limited research support provided by the institution management	676	3.320	7.250	0.000
3	Lack of coordination among university departments to serve the research process	683	3.290	6.892	0.000
4	Lack of consistent opportunities to promote and develop research skills	677	3.260	6.352	0.000
5	Absence of research environment and appropriate research requirements in the institution	683	3.250	5.634	0.000
6	Few scientific conferences	682	3.240	5.441	0.000

No.	Questionnaire Items	Number	Mean	T	Sig
7	Low availability of necessary specialized academic references for conducting research studies	685	3.190	4.346	0.000
8	Individualism for scientific research	681	3.170	3.997	0.000
9	Lack of opportunities for conducting joint research	685	3.130	3.066	0.002
10	Limited experience of faculty members in publishing research products in international journals	683	3.130	3.221	0.001
11	Not keeping pace with technological development and its application in the field of scientific research	676	3.050	1.294	0.196
12	Absence of journals and specialized books for doing scientific research	688	3.010	0.184	0.854
13	Lack of working papers, discussions, studies published regularly in the field of scientific research	686	3.000	0.033	0.973
14	Absence of control over plagiarism	675	2.980	0.506	0.613

The results indicated in table 3 reveal that ‘lack of sabbatical leaves for academics and difficulty in obtaining them’ is the most important academic obstacles facing researchers and academics in the Sultanate of Oman. The mean of the responses given by the participants is the highest, i.e., 3.39. In order to see if this mean is significantly different from the hypothesized mean, which is 3, a one-sample *t*-test was run, the result showed that at the level of 0.05, the difference between this mean and the hypothesized one is significant with a *t*-value of 8.754. In this regard, Solodnikov (2008) study indicated that researchers' lack of time for doing scientific research and the high burdens placed on them constitute the most important obstacle facing researchers and prevent their scientific research from being strengthened. One of the significant burdens academics usually encounter in the private sector is that although there is shortage of staff members, a large number of students are accepted each year.

The second important factor is the ‘limited research support provided by the institution management’. The mean of the responses is 3.320 and its statistical difference with the hypothesized mean, with a *t*-value of 7.250 is also significant. This result is largely in line with the findings of the study done by Kanaan (2001), which pointed to the importance of the impact of financial support in stimulating scientific research. In spite of the availability of budget resources and scientific capabilities in the Arab world, the amount of money allocated to scientific research is not that high. The results of the study also agree with the findings of Al-Badri and Al-Boumahdi (2012), who considered the low percentage of expenditure on scientific research as the most prominent obstacle on the path of scientific research in general in the Arab world. The study considers that the problem of scientific research in the Arab world is not only the lack of funding, but also in the "management of finance", considering that effective management will have several effects and benefits to overcome many of the problems facing scientific research and development.

‘Lack of coordination among university departments to serve the research process’ came in third place with a mean effect of 3.29 and statistically significant *t*-value of 6.892. This stems possibly from the weak coordination and planning processes among the various universities, colleges and research centers in the Sultanate. Al-Qasabi’s study (2003) indicated that the absence of planning within the university institutions constitutes the most important obstacle facing scientific research. This, in turn, leads to random and scattered research activities on individual bases without creating any platform for collective research work.

The fourth and the fifth obstacles are ‘Lack of consistent opportunities to promote and develop research skills’, and ‘Absence of a research atmosphere and appropriate research requirements in the institution’ with the means of 3.260 and 3.250, and *t*-values of 6.352 and 5.634 respectively. The result obtained for the fifth factor is consistent with the findings of Karimian, Sabbaghiab, Salehi, and Sedghpour (2012), which pointed out that one of the most important obstacles facing scientific research is the lack of sufficient knowledge in research methods and tools, the weak skills of researchers, and their lack of knowledge of statistical analyses. The research atmosphere in the Arab world is not encouraging enough for research and innovation at all levels. It should be borne in mind that research is a scientific and dynamic process

depending on creative thinking and the availability of a suitable atmosphere.

As for the impact of 'Few scientific conferences' on the rate of research achievement, the results show that this factor ranked the sixth in terms of importance with an average of 3.240 and a t-value of 5.441. The difference between the mean of the sixth factor and the hypothesized mean is also significant. This shows the importance of holding formal and informal scientific meetings in order to activate the process of scientific research from the viewpoint of academics and researchers because conferences usually cultivate rich knowledge in the fields of scientific research and raise research expertise.

The results presented in the table also indicate that the obstacles related to the 'Not keeping pace with technological development and its application in the field of scientific research', 'Absence of journals and related specialized books for doing scientific research', 'Lack of working papers, discussions and studies published regularly in the field of scientific research', and 'Absence of control over plagiarism' fall in the end of the list of obstacles. These factors have the least effect on the academics and researchers' research endeavors. Their means also do not show a statistically significant difference with the hypothesized mean. However, these obstacles have also been picked up by the participants as factors hindering them to go on successfully with research activities.

In general, it is clear that all academic obstacles have a moderate degree of influence. Moreover, the analysis of the means of the responses to all of the factors except for the final one, listed in table 2, reveals that they are mostly more than the hypothesized mean (3). All in all, the participants mainly chose options 'Agree', 'Strongly Agree' in response to most of the items in the questionnaire. This reveals that they think these are serious academic obstacles on the path of conducting research studies at higher education institutions in the Sultanate of Oman. They think that these are the factors that have weakened scientific research and have reduced their academic productivity.

Administrative Obstacles

There were 19 items in the questionnaire for the administrative obstacles. They were designed in order to know about the participants' ideas concerning the administrative obstacles they may encounter in conducting research studies. Table 3 shows the number of responses to each item, the means, and the t-values, along with the significance indices. Another one sample *t*-test was run in order to investigate whether there were statistically significant differences, at the significance level of 0.05, among the participants' perspectives concerning academic obstacles.

Table 3: *Researchers and Academics' Ideas about Administrative Obstacles According to the Degree of Importance*

No	Questionnaire Items	Number	Mean	T	Sig
1	Too many hours of teaching / working per week	680	3.640	14.282	0.000
2	Too many administrative duties	677	3.590	13.554	0.000
3	Not sufficient hours allocated to scientific research in the institution	681	3.460	9.896	0.000
4	Routine and bureaucracy in the work environment	675	3.440	9.915	0.000
5	No courses and training programs to develop scientific research skills	681	3.410	9.537	0.000
6	Weak funding sources for scientific research	672	3.400	9.728	0.000
7	Absence of academic centers in the institution to review research papers	679	3.400	9.345	0.000
8	Difficulty in obtaining data and information from official and private institutions	676	3.390	9.174	0.000
9	No marketing for scientific research outputs	673	3.380	9.355	0.000
10	Difficulty and complexity of academic promotion standards	674	3.330	7.476	0.000
11	No cooperation between research centers and academics	677	3.320	7.609	0.000
12	Lack of coordination between the concerned parties in the scientific research process in the institution	672	3.320	8.006	0.000
13	Poor cooperation of the institutions with researchers	671	3.320	7.712	0.000
14	The bureaucratic difficulties in the work environment regarding the presentation and announcement of research grants in the institution	677	3.300	7.485	0.000

15	The complexity of the procedures necessary to conduct scientific research	677	3.300	7.078	0.000
16	Weak efforts to attract distinguished researchers	677	3.260	6.189	0.000
17	Shortage of qualified staff to carry out scientific research	674	3.170	3.852	0.000
18	Lack of transparency among researchers and the management of scientific research	671	3.150	3.592	0.000
19	Too many regulations and rules	670	3.130	2.991	0.003

The results of the study shown in table 3 reveal that the challenges related to the number of hours of teaching/working hours per week with the highest mean, i.e., 3.64, is on the top of the factors affecting researchers and academics' involvement in academic research. One sample *t*-test showed that the difference between this mean and the hypothesized mean (=3) was statistically significant. That is to say, a vast majority of the participants agreed strongly with this obstacle. The same result was obtained by Farzaneh et al. (2014). They found that the large number of teaching responsibilities is one of the most important problems the academics encounter with. Being overload with teaching hinders academics to get involved in research activities. Therefore, the rate, number and the quality of research studies are highly affected. In the second place of importance was 'too many administrative duties', with a mean of 3.59. The participants' engagement is administrative duties and burdens lag them behind in the conducting research studies.

As the third important factor highlighted by the participants was 'Not sufficient hours allocated to scientific research in the institution' with a mean of 3.46 and a *t*-value of 9.896, it can be inferred that academics and researchers urgently need enough time to be allocated to conducting research studies. The obstacles related to 'Routine and bureaucracy in the workplace', and 'Lack of courses and training programs to develop the skills of scientific research' are the fourth and the fifth most important obstacles on the path of researchers and academics. Their means are 3.44 and 3.41 and their *t*-values are 9.915 and 9.537 respectively. The study done by Bakken, Lantigua, Busacca, and Bigger (2009) confirms that the lack of adequate training of researchers in research methods is the most important hindrance researchers come across. Al-Madani's study (2011) attributed the poor productivity of scientific research to the lack of adequate training of researchers in the field. The duration of training is usually limited and does not qualify them to acquire scientific research skills, and to utilize research knowledge and methodology in research. The most astounding problem in this context is bureaucracy, which results from attempts by those at the top of the hierarchy to monitor the work and activities of researchers in a form of hegemony and supremacy within the powers granted to them by the existing systems in institutions.

The results also show that the obstacles related to research funds, and the absence of academic centers in the institution to review research papers fall in the sixth and the seventh ranks in terms of importance for the participants in the current study. Both of these two factors have an identical mean of 3.4 with slightly different *t*-values of 9.729 and 9.345 respectively. These two factors have a medium effect. These types of administrative obstacles reflect the weakness of the institutions in these aspects and the weak process of continuous development in institutions and research centers. In the same line, Qotb and Alavi (2011) asserted that among the most prominent research obstacles are the institutions' weak development of and low attention to working in the field of scientific research, Moreover, their lack of interest in the establishment of centers specialized in scientific research adds to the problem and the obstacles related to the low rate of government budget on scientific research are among the most important administrative research obstacles. Osagie (2012) emphasized that the government's lack of interest in scientific research, the lack of priority in the plans and strategies drawn, as well as the economic and social levels in particular, constitute the most important challenges facing scientific research.

The obstacles pertaining to 'Shortage of qualified staff to carry out scientific research', 'Lack of transparency among researchers and the management of scientific research' and 'Too many regulations and rules' fall in the end of the list with means of 3.17, 3.15, and 3.13, and *t*-values of 3.852, 3.592, and 2.991 respectively. In this context, it appears that the influence of some aspects of academic institutions on scientific research production is deep and clear. Among these aspects are the reliance which is put on graduate students to work as research assistants at different levels of education and academic experience, as well as the policies that may not be compatible with developments in communities at all levels.

In general, it is clear that the obstacles associated with the administrative responsibilities and teaching burdens as well

as not devoting sufficient time to going on with research projects constitute the most important obstacles. These reduce the productivity of academics and researchers significantly. This result is consistent with many studies such as Kazem and Aljamali (2004) who found that the constraints associated with the teaching and administrative burdens constitute the most important challenges facing academics in the course of their scientific research. It also seems that the aspects related to the work environment and bureaucracy within the academic institutions concerned with scientific research is among the important challenges associated with the weakness and decline in productivity. Administrative problems can be attributed, in general, to the nature of administrative systems and regulations in institutions. The granting of decision-making power to individual academic institutions may lead to the emergence of personal considerations in decision-making and lack of objectivity, which may lead to some personal biases and patterns of non-democratic behaviors that can be reflected in toughening the situation for developing scientific research.

The Participants' Personal Characteristics and Their Attitudes towards Academic and Administrative Obstacles

This part of the study examines the impact of a number of independent variables such as 'Institution Type', 'Gender', 'Age', 'Field of Study' and 'The Country of Graduation' on the attitudes of researchers and academics in higher education institutions in the Sultanate of Oman towards academic and administrative obstacles facing them. In order to achieve this objective, two Multivariate Analyses were run to check for the effects of the above-mentioned independent variables on the dependent variables, i.e., Academic obstacles and Administrative ones. The results are presented in the table 4.

Table 4: *The Participants' Personal Characteristics and Their Attitudes Towards Academic and Administrative Research Obstacles*

Type of Obstacle	Statistical values	According to the Institution	According to Gender	According to Age	According to Field of Study	According to Country of Graduation
Academic Obstacles	Mean Squared	5.589	0.931	0.536	0.026	2.929
	<i>f</i> value	11.30	1.893	1.090	0.054	5.953
	Sig	0.001	0.170	0.297	0.817	0.015
Administrative Obstacles	Mean Squared	2.561	0.247	0.842	0.060	5.848
	<i>f</i> value	4.117	0.397	1.353	0.097	9.400
	Sig	0.043	0.529	0.245	0.756	0.002

The results presented in table 4 reveal that the variables of 'the nature of the institution and the country of graduation' are among the most influential variables among the academics and researchers' opinions regarding the academic and administrative obstacles facing them in preparing their scientific research in general. The results demonstrate the depth of the impact of the type of institution in determining the nature of the obstacles that may face scientific research. This seems to be a logical and expected result taking into account that many of the academic and administrative obstacles are related to the nature of the systems and procedures of the academic institutions. This result is consistent with the findings of the study done by Saleh (2003), which concluded that the type of institution significantly affects the nature of the obstacles academics and those interested in scientific research encounter with.

Table 4 also shows that there is a variety of attitudes towards the obstacles of scientific and academic research according to different universities and countries from which the academics and researchers have obtained their degrees. This diversity of views can be attributed to the fact that the academics and researchers who have obtained their university degree from a particular country may be under the influence of the life style, the educational system, the knowledge atmosphere, and the vision of scientific research in that country. Variables such as gender, specialization, and age did not have a statistically significant effect on the variety in the attitudes of researchers and academics toward the academic and

administrative obstacles,

Conclusions and Recommendations

Conclusions

The following conclusions can be drawn from the present study:

1. The results of the study showed that most of the participants are male (66.2%), and the largest proportion of the sample of the study are graduates of the Arab countries, i.e., up to 30%, which is much larger than the percentages of those who obtained their last university degree from Europe, America and Australia.
2. The results of the study showed that the most important administrative challenges facing the research process are 'the large number of hours of teaching or work per week', 'the administrative load', with statistical means of 3.64 and 3.59 respectively.
3. Obstacles related to 'the lack of qualified staff to carry out scientific research', 'lack of transparency between researchers and the management', and 'the regulations and rules governing the institutions' were in the lower ranks in terms of importance as obstacles.
4. The results also indicated that the variables of 'type of institution' and 'country of graduation' are the most influential independent variables in the diversity of views of academics and researchers on the academic obstacles they face while preparing for their scientific research.

Recommendations

1. It is necessary to establish specialized research centers for scientific research in all fields and disciplines. This will enhance the productivity of scientific research in higher education institutions.
2. It seems that the teaching and administrative loads play an active role in the low academic research production. Particular attention to such aspects is required so that scientific research would become a priority of the institution.
3. It is of paramount importance to pay close attention to the development of research skills among academics and researchers via holding training courses and workshops regarding the mechanism of writing scientific research, the methods of scientific research, the mechanism of searching for references and necessary sources and methods of referencing and other important matters essential for conducting scientific research.
4. The challenges and obstacles, both academic and administrative, faced by academics and researchers during the process of publishing their research papers in the scientific journals should be reviewed comprehensively to come to a complete grip of what prevents the researchers from publishing their research studies.
5. New policies should be formulated in order to create an appropriate research environment for scientific research, and establish frameworks for research cooperation among the different institutions of higher education within the Sultanate and provides rooms to accommodate various experiences. This will, for sure, boost the research process in the Sultanate and increase its diversity.
6. An environment should be created for supporting practical research and benefiting from the expertise of researchers and academics working in various institutions of higher education. This environment should guarantee the support, both financial and moral, for the scientific research and facilitate all procedures related to conducting research in terms of funding, training and dissemination.
7. Further studies should focus on the present issues and challenges faced by the Omani society in order to achieve the maximum investment of the human resources of the researchers in the process of change and modernization that the society undergoes.
8. A database containing all the research that has been done in the Sultanate should be made so that it can be easily consulted at any time. This will help evaluate the research process in certain periods of time and examine the research reality with much accuracy and comprehensiveness.

REFERENCES

- Bakken, S., Lantigua, R., Busacca, L., Bigger, J (2009). Barriers, enablers, and incentives for research participation: A report from the Ambulatory Care Research Network (ACRN)". *JABFM*, 22(4), 436-445.
- Ernest, E. (2003). Obstacles to research in contemporary and alternative medicine. *MJA*, 179, 279-80. Retrieved 14 August 2017 from: https://www.mja.com.au/system/files/issues/179_06_150903/ern10442_fm-1.pdf
- Farzaneh, E., Amani, F., Taleghani, Y., Fathi, A., Kahnamouei-aghdam, F., Fathzadeh-Ardalani, G (2014) Research barriers from the viewpoint of faculty members and students of Ardabil University of Medical Sciences, Iran, 2014 *International Journal of Research in Medical Sciences*, 4(6), 1926-1932.
- Hatamleh, H. (2016) Obstacles of Scientific Research with Faculty of University of Jadara from Their Point of View. *Journal of Education and Practice*, 7(33), 32-47.
- Heidarnia, L. & Haj Ali, M. (2015). Study of the obstacles to conducting the action research from the primary school teachers' point of view in Bijar. *International Journal of Academic Research in Progressive Education and Development*. DOI: 10.6007/IJARPED/v4-i1/1624
- Hemsley-Brown, J.V (2004). Facilitating research utilization: A cross sector review of the research evidence. *International Journal of Public Sector Management*, 17(6), 534-553.
- Karimian, Z., Sabbaghian, Z., Salehi, A., Sedghpour, B (2012). Obstacles to undertaking research and their effect on research output: A survey of faculty members views at Shiraz University of Medical Sciences" *Eastern Mediterranean Health Journal*, 18(11), 1143-1150.
- Osagie, R (2012). Federal government funding of research in universities in Nigeria, the University of Benin as a case study. *International Education Studies*, 5(6), 73-79.
- Pischke, E., Knowlton, J., Phifer, C., Lopez, J., Propato, T., Eastmond, A., Souza, T., Kuhlberg, M., Risso, V., Veron, S., Garcia, C., Chiappe, M., Halvorsen, K. (2017). Barriers and Solutions to Conducting Large International, Interdisciplinary Research Projects. *Environmental Management*, 60, 1011-1021.
- Solodnikov, V. V. (2008). Problems of scientific research activity in institutions of higher learning. *Russian Education and Society*, 50 (5), 85-95. Doi: 10.2753/RES1060-9393500504
- Taskeen, S., Shehzadi, A., Khan, T., Saleem, N. (2014). Difficulties faced by novice researchers: A study of universities in Pakistan. *International Journal of Art and Literature*, 1(1), 1-4.
- البدري، س. و اليومهدي، ع. (2012). واقع البحث العلمي في العالم العربي ومعوقاته، المؤتمر العربي الدولي لضممان جودة التعليم العالي. جردات، م. (2002). واقع البحث العلمي في الجامعات الحكومية في الأردن وتوقعاته المستقبلية. مجلة العلوم التربوية، قطر، عدد2، ص139-169.
- درويش، أ. (2013). مشكلات البحث العلمي في العالم العربي - دراسة في سسيولوجيا التنظيم، دار الوفاء لدنيا الطباعة والنشر، الإسكندرية. سيار، ع. (2011). البحث العلمي في الوطن العربي بين السياسة والمهنية: رؤية تحليلية للمعوقات والتحديات، المنظمة العربية للتنمية الإدارية، الأردن، 39-52.
- شحاته، عز (1999). المرأة العاملة في المجال الأكاديمي كما يراها زملاؤها. مجلة العلوم الاجتماعية، 27، (1)، جامعة الكويت. الفتلي، ح. (2008). المعوقات التي تواجه الباحث في الجامعات العراقية. مجلة القادسية في الآداب والعلوم التربوية، 7 (4+3)، 229-242. القصبى، ر. (2003). استثمار وتسويق البحث العلمي في الجامعة، مستقبل التربية العربية 9، (28)، 9-44.
- قطب، س. و علوي، خ. (2011). البحث العلمي بالجامعات السعودية: الواقع والمعوقات والحلول، المنظمة العربية للتنمية الإدارية، الأردن، 275-298.
- كاظم، ع. و الجمالي، ف. (2004). معوقات البحث العلمي في جامعة السلطان قابوس ومقترحات حلها. المجلة العربية للتربية، 24 (1)، 45-84.
- كنعان، أ. (2001). البحث العلمي في كليات التربية بالجامعات العربية ووسائل تطوره. مجلة اتحاد الجامعات العربية -الأردن، ع 38، 5-69. المحبوب، ع. (2000). مشكلات البحث العلمي كما يدركها أعضاء هيئة التدريس بجامعة الملك فيصل، مركز البحوث التربوية والنفسية، مطابع جامعة أم القرى - مكة المكرمة.
- المحمد، ه. (2011). البحث العلمي في جامعة الكويت: الواقع والمعوقات من وجهة نظر أعضاء الهيئة التدريسية، كلية الدراسات العليا، الجامعة الأردنية، 1-11.
- المندي، م. (2011). رؤية لتطوير مهارات البحث العلمي في التخطيط الاجتماعي. مجلة دراسات في الخدمة الاجتماعية والعلوم الإنسانية، 4(30)، 1960-1929.

منصور، ي. (2015). صعوبات البحث العلمي في العلوم الإنسانية التي تواجه أعضاء هيئة التدريس بكلية الآداب جامعة طرابلس، مركز جيل البحث العلمي، 85-102.
منظمة الأمم المتحدة للتربية والعلم والثقافة (2015)، تقرير اليونسكو للعلوم حتى عام (2030).
ياقوت، م. (2007). أزمة البحث العلمي في مصر والوطن العربي. دار النشر للجامعات، القاهرة: مصر.

المعوقات الأكاديمية والإدارية التي تواجه البحث العلمي في مؤسسات التعليم العالي في سلطنة عُمان: دراسة كمية تحليلية

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ملخص

هدفت الدراسة الحالية إلى الكشف عن أهم المعوقات الأكاديمية والإدارية التي تواجه البحث العلمي في سلطنة عُمان، والكشف عن تأثير بعض المتغيرات المستقلة كالنوع الاجتماعي، والفئة العمرية، ونوع المؤسسة، والتخصص، وبلد التعليم. ولقد أجريت الدراسة على عينة قوامها 714 باحثاً وأكاديمياً من العاملين في مؤسسات التعليم العالي في مختلف محافظات السلطنة. ولقد اعتمدت الدراسة الحالية على المنهج الوصفي بالاستناد إلى الاستبانة أداة رئيسة لجمع البيانات، تم تصميمها لتتوافق وأهداف الدراسة وتساؤلاتها. وخلصت الدراسة إلى مجموعة من النتائج أهمها: أن أهم المعوقات الإدارية التي تواجه البحث العلمي تتمثل في الأعباء التدريسية والإدارية، وأن أهم المعوقات الأكاديمية التي تواجه البحث العلمي تتمثل في قلة إجازات التفرغ للبحث العلمي وصعوبة الحصول عليها. كما أظهرت النتائج أن المتغيرات المتمثلة في نوع المؤسسة وبلد التخرج تعد المتغيرات المستقلة الأكثر تأثيراً في على المعوقات الأكاديمية والإدارية التي تواجه البحث العلمي.

الكلمات الدالة: البحث العلمي، المعوقات الإدارية، المعوقات الأكاديمية.

* مركز البحوث الإنسانية، جامعة السلطان قابوس، سلطنة عمان. تاريخ استلام البحث 2018/4/10، وتاريخ قبوله 2019/4/3.