

King Khalid University



College of Science
Department of Mathematics



جامعة الملك خالد



كلية العلوم
قسم الرياضيات

Report on research activities in the Department of Mathematics Academic Year 1444H (2022-2023)





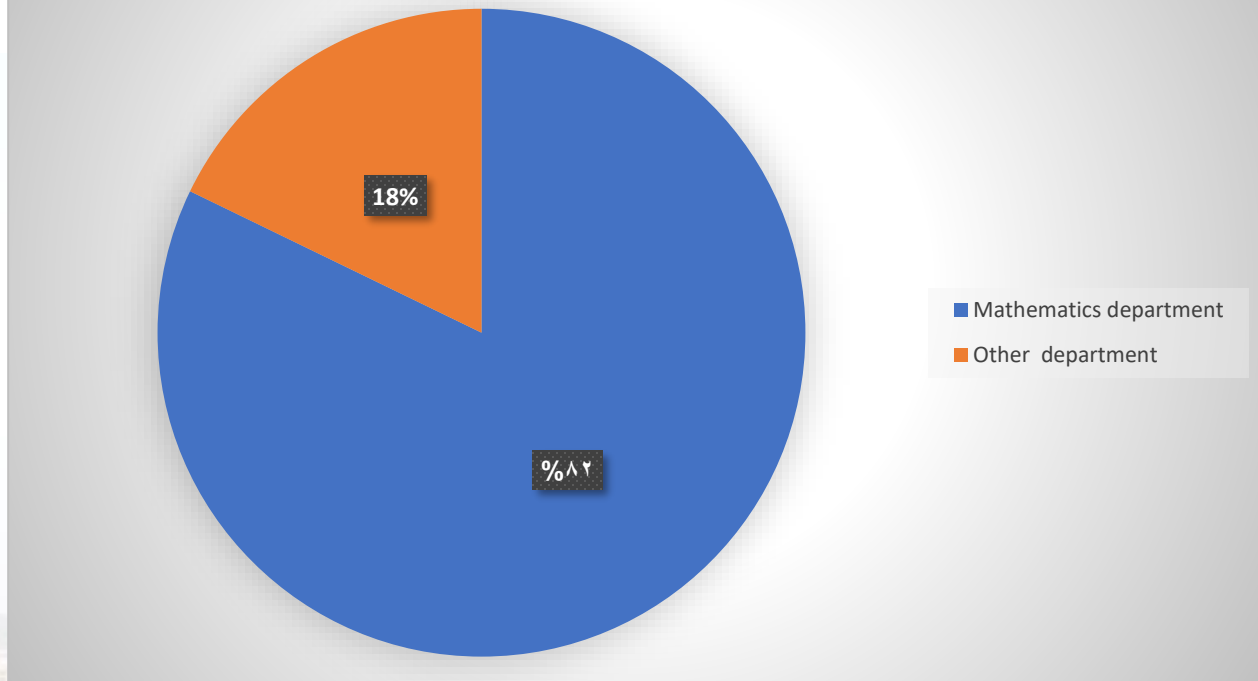
1. Introduction

The scientific research is a fundamental elements in the strategic plan of King Khalid University. The university encourages and support researchers from all scientific disciplines. Of course this great consideration is motivated by the fact that the scientific research is the principal source of many technologies development. Similarly to the other fundamental sciences fields, the scientific research in mathematical sciences is widely developed in King Khalid University. The department of mathematics at King Khalid University is one of the most productive departments in scientific research at Kingdom of Saudi Arabia. In particular the publication rate as well as the citation rate is continuously increasing in the last years. These efforts have been recognized and reward by the university. Furthermore, many faculty members of the mathematics department were rewarded for their contribution in scientific productions in the university. The scientific research activities in the Department of Mathematics is organized in four research groups that are : (1) Applied mathematics group, (2) Analysis and geometry group, (3) Algebra and number theory and their applications group and (4) Statistics and probability group . It is clear that the four research groups covers the principal topics of mathematical sciences and their applications. We aim in the present report to summarize the different scientific activities in the mathematics department during the academic year 1444H (that corresponds to 2022-2023). This report covers the principal scientific productions in the department such that the scientific publications, the research projects and the participation to the scientific events (seminar, conferences or workshops.).

2. The scientific publication



In the beginning of the academic year 1445 an electronic survey was distributed in the mathematical department to collect the data concerning the scientific activities in the department. Based on this survey we count 571 scientific papers published by the faculty members. However, in order to avoid the duplication of the joint publications we have used the Google Scholar platform and the Web of Sciences to remove the duplicated scientific papers. From this academic platforms we have identified more than 85 publications jointly written by the faculty members of the department. The identification of these papers is necessary to precise the real contribution of the mathematics in the scientific publishing in King Khalid University. It should be noted that this statistical survey cover the academic year 1444H. More precisely we study the period between August -2022 to August-2023. During this period the department of mathematics has contributed by 486 scientific publications. With this number of published scientific papers the publication rate in the department becomes 7.25. It was 5.76 by member in 1442H and 6.53 during the academic year 1443H. So, there are substantial progression in the scientific publishing at the mathematics department. In order to highlight the contribution of the department is this kind of scientific activity we have compared the number of publication of the mathematics department to the others departments of King Khalid university. Using web of sciences platform we totalize 2730 scientific papers published by the faculty members of the King Khalid University. So, the proportion of the Department of Mathematics in the scientific publishing activity is about 17.80%. Thus, we can say that the mathematics department is among the most active department in the university. In graphs (1) we visualize and we compare the contribution of the mathematics department with respect the other departments in king Khalid university..

CONTRIBUTION OF MATHEMATICS DEPARTMENT COMPARED TO
OTHER DEPARTMENTS IN THE KING KHALID UNIVERSITY

Figure(1): Contribution of mathematics department compared to others departments in the King Khalid University

It should be noting that the scientific publishing in mathematics department is in continuous development. The number of scientific publication was 405 scientific papers for 1443H and is increased by 81 papers. Concerning the scientific research activities for each research groups, we present in the Table (1) the distribution of the published papers over the different groups in the department.



Table(1): Number of publications by research groups

Research groups	Number of publications
Applied Mathematics	277
Analysis and geometric	135
Algebra and number theory and their applications	53
Statistics and probability	21
Total	486

We can see clearly that the group of Applied

mathematics is the first group in term of number of publications. This group has 277 published papers during the academic year 144H. Secondly, 135 scientific papers are produced by the group of Analysis and Geometry. The third research group, in term of number publications is the research group of Algebra and Number Theory and their applications. The member of this group have published about 53 scientific papers. The number of publications realized by the Statistics and Probability group was 21 scientific papers.

3. The citation rate

The second important indicator of the scientific production is the citation rate. This indicator permits to examine the quality of the scientific publications. Of course the impact of the scientific papers can be measured through the citation rate. In this report we examine this aspect using the Google Scholar platform. We control the number of citation under the unified affiliation of the department that is “Dept., King Khalid University, KSA.”. Concerning the academic year 144H we found 8264 citation. Compared to the academic year 1443 where the citation number was 7301 we obtain an augmentation of 13% in the number of citations. Without surprising this increasing of citation number is due to the



selective high indexed scientific journals considered in the scientific publishing at the department.

4. Research project

According to the survey distributed in the department. There are 34 research projects approved by the Deanship of Scientific Research. In the table (2) we present the number of projects achieved by each group. It is reported in this table that the number of project proposed by the Applied Mathematics Group was 16 projects. While 12 research projects were approved for the research group of Analysis and geometry. The faculty members affiliated in the group of Algebra and Number Theory and their applications have achieved 4 projects. Finally there are only two projects conducted by the Statistics and probability research group.

Research groups	Number of research projects
Applied Mathematics	16
Analysis and geometric	12
Algebra and number theory and their applications	4
Statistics and probability	2
Total	34

Table(2): Number of research projects by research groups

5. The scientific events

Based on the responses collected from the distributed survey, thirty three members have confirmed their participation in scientific events. Eight members have participated to an international conferences and 16 members have participated with oral presentation in



scientific meeting inside the Kingdom of Saudi Arabia. Finally we mentions that the mathematics department organizes an annual seminar for their members. Exceptionally for the academic year 1444H, two invited speakers from King Abdullah University were participated to this scientific meeting and 9 members of the department have participated with oral presentation.

