

DIRECTORY OF PRODUCTIVE SCIENTISTS OF PAKISTAN (PSP) 2017

The quality research contribution of scientists, including academicians, engineers and doctors of the country, particularly those involved in the production of new knowledge is regularly evaluated and ranked by PCST. PCST has previously published 08 directories on the subject “Productive Scientists of Pakistan” in the last twenty years. This is the Ninth (09) study carried out and it includes the data of 4154 scientists of Pakistan employed in public/private sector universities, colleges and R&D organizations who have contributed in scientific research from beginning of their career up to 2016. It incorporates a wide range of indicators for assessment of both quantity and quality of research and its impact.

- The Evaluation is done on the basis of the criteria, which has been developed and approved by a high level committee in 2017 (<http://www.pcst.org.pk/psp.php>).
- The draft of the directory 2017 was made available for review on PCST website on December 15, 2017 for verification of data by the applicants before the final release of the document and this directory contains the information based on the available data provided by scientists of various R&D/S&T institutions and universities of Pakistan till December 22, 2017.
- The data not meeting set criteria and/or having no documentary proofs has not been included.
- The weightage for different research areas under the revised PSP criteria is as under:

Parameters	PSP
Cumulative Impact Factor	20%
Citations	40%
<ul style="list-style-type: none"> ▪ Total citations ▪ <i>h</i>-index ▪ citations per article 	15 15 10
Patents Granted	5%
Ph.D. Supervised	5%
Books Published / Edited	5%
External Research Grants	10%
Applied Research Output/Innovation	10%
Awards	5%
Total	100%

➤ The mean benchmarks are given below for ready reference:

S.No	Parameter	Mean Benchmark* (Highest Score)	Percentile Score**
1.	Books	106.34	5
2.	Patents	18.81	5
3.	PhDs	173.19	5
4.	Grants	121.94	10
5.	Publications	-	60
	i. Impact Factor	276.11	20
	ii. Citations	2691.54	15
	iii. <i>h</i> -Index	47.89	15
	iv. citations per article	157.26	10
6.	Innovation/ Applied Research Output	11.21	10
7.	Awards	36.22	5

*** Benchmarks for different parameters are rationalized using the mean of the highest scores in each subject. Scaling is applied in a way that everyone scoring higher than the mean benchmark shall be given 100% of that parameter.**

**** An applicant can assess his/her own score for any parameter by dividing his/her score by applying the following formula:**

$$\frac{\text{Percentile Score}}{\text{Mean Benchmark Score}} \times \text{Score of Applicant}$$

e.g. for awards, if the applicant's score is 40 then $5/36.22 * 40 = 5.52$

Score of applicants is calculated after applying divisibility. For example for Cumulative Impact Factor (IF) of an applicant:

- **The IF of each journal is obtained from the JCR**
- **IF of each paper is calculated by dividing journal impact factor by number of authors e.g. If a paper having 2 authors is published in a journal with impact factor 3, the Divided IF is $3/2 = 1.5$.**
- **The Divided IF is summed up for all the publications of applicant and is Author Impact Factor**

- All possible efforts were made by PCST to contact scientists by emails/phone calls for data collection through online system as well as through their CVs along with proof of their credentials. However, if some scientists could not provide complete information for the directory, their data may not be complete.
- The draft data was made available for review to the applicants before final release of result, so no amendments will be made in the final directory of PSP 2017.
- PCST bears no responsibility for any error in the spellings of name, designation or present institutional address of any applicant, as they were asked for verification before final release of document.
