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### Corresponding author:

Alfredo Guzmán Rincón

alfredo.guzman@asturias.edu.co

#### **Author Affiliation:**

Corporación Universitaria de Asturias.

# Conceptual model for the assessment of academic productivity in research seedbeds from a systematic review

Martinez-Daza, MA1; Valencia, LI2; Guzmán, A3.

#### **ADMINISTRATIVE INFORMATION**

Support - FUAA and CUA.

**Review Stage at time of this submission -** Formal screening of search results against eligibility criteria.

**Conflicts of interest** - The authors declare no potential conflicts of interest of a personal, academic, political, or religious nature.

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**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 June 2023 and was last updated on 28 July 2023.

# INTRODUCTION

eview question / Objective To design an evaluation model for the academic productivity of research seedbeds based on the available evidence in the literature. To this end, the following guiding questions were established:

- RQ 1: What are the key criteria that should be considered to evaluate the academic productivity of research seedbeds based on the available evidence in the literature?
- RQ 2: What indicators can be included in an evaluation model of the academic productivity of research seedbeds, based on the findings in the literature?

Background Higher Education Institutions (HEIs) seek to implement strategies that facilitate formal research conducted by teachers, but more importantly, they aim to take actions to promote formative research within the student-teacher relationship. In this sense, HEIs have established multiple strategies with the aim of influencing the

curriculum and pedagogical management in order to develop students' research skills and promote scientific production by both students and teachers. From this perspective, one of the most implemented strategies for formative research by HEIs to strengthen research skills is the creation of research seedbeds. From this perspective, the impact of such a strategy remains unknown, as there is a lack of a holistic view regarding the impact of research seedbeds on research activities in HEIs, due to the lack of models that allow their evaluation. Therefore, it is unknown whether research seedbeds are fulfilling their main objective of training human resources for research and supporting the academic productivity of institutions. In this context, the purpose of this study is to design an evaluation model for the academic productivity of research seedbeds based on the available evidence in the literature.

Rationale The lack of a model for evaluating academic productivity in research seedbeds that allows assessing the effectiveness and relevance of the pedagogical strategy for training human

resources in science, technology, and innovation used in Higher Education Institutions (HEIs). From this perspective, it is expected to establish metrics and indicators based on the literature review, which will constitute the first published evaluation model that can be applied by any Higher Education Institution (HEI) as a basis for recognizing the production of research seedbeds, considering that previous reviews have focused on other aspects of research seedbeds and not on their evaluation as a learning strategy.

#### **METHODS**

Strategy of data synthesis To identify articles with significant impact on research seedbeds, the following academic databases will be used: SCOPUS, ProQuest, Jstor, Scielo, and Sciencedirect. These databases contain abstracts and citations of scientific documents, such as articles, books, and conference proceedings, which the academic community considers of high quality. The search for determining the documents will be done using equations and will be conducted in both English and Spanish. No filters will be applied in the information search, such as publication period, geographic area of the study, or journal quartile categorization, except for SCOPUS, in order to include the maximum number of studies and avoid the loss of information.

Eligibility criteria For this study, the review will include documents such as articles, book chapters, research results, and conference proceedings. From reading these documents, categories will be established to classify the indicators used to evaluate the academic productivity of research seedbeds. An inductive approach is estimated to be adopted, and based on the results, a theoretical model will be proposed to understand the academic productivity in research seedbeds as a formative research strategy in higher education institutions.

#### Source of evidence screening and selection

Para la selección de los documentos, y debido a que la búsqueda se limitará a cinco bases de datos la fase de eliminación de registros duplicados se llevará a cabo. Los documentos seleccionados, relevantes para este estudio serán registrados en una matriz compuesta por los siguientes datos: tipo de documento, año, autores, título del documento, nombre de la revista, clasificación del cuartil de citas y palabras clave. Después serán analizados para proceder con la presentación de los resultados.

Data management For this stage, the reviewers will collaborate in the joint creation of an Excel form. This form will be used to determine which variables should be extracted from the documents, which will allow the establishment of a standardized abstraction tool. Each reviewer will independently complete the Excel form, and then the results will be discussed and updated through an iterative process. In this phase, the intervention of an external third party will not be required to resolve discrepancies. In case discrepancies arise, previous studies will be consulted to determine their categorization in the corresponding explanatory variables to evaluate the academic productivity of research seedbeds.

Language restriction English and Spanish.

Country(ies) involved Colombia.

**Keywords** research seedbeds, formative research, measurement, productivity, higher education.

#### Contributions of each author

Author 1 - Magda Alejandra Martinez-Daza. Email: mmartinez103@areandina.edu.co Author 2 - Lira Isis Valencia Quecano. Email: lira.valencia@asturias.edu.co Author 3 - Alfredo Guzmán Rincón. Email: alfredo.guzman@asturias.edu.co