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Title: Variables that influence the process of linking Higher Education Institutions and Industry

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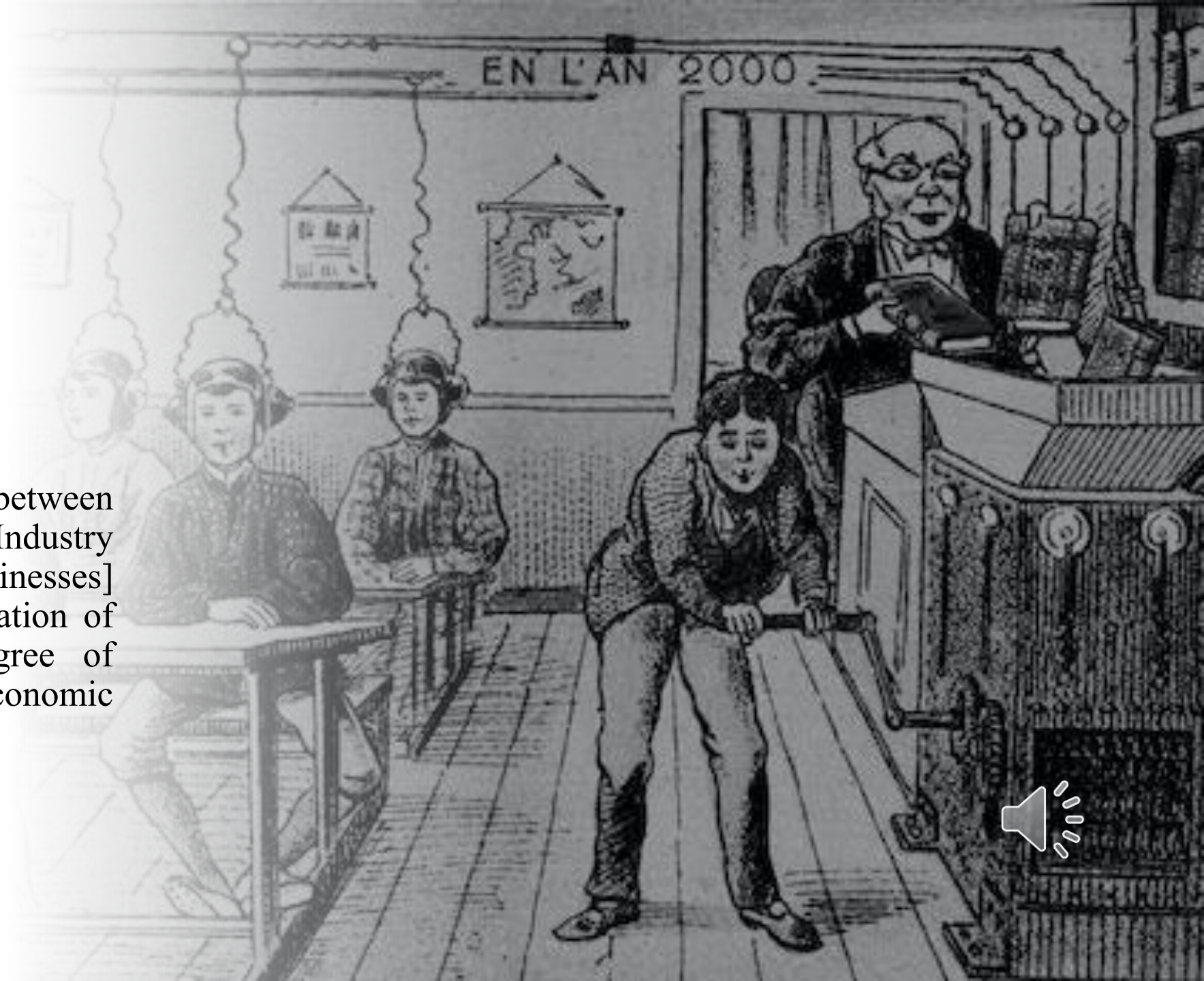
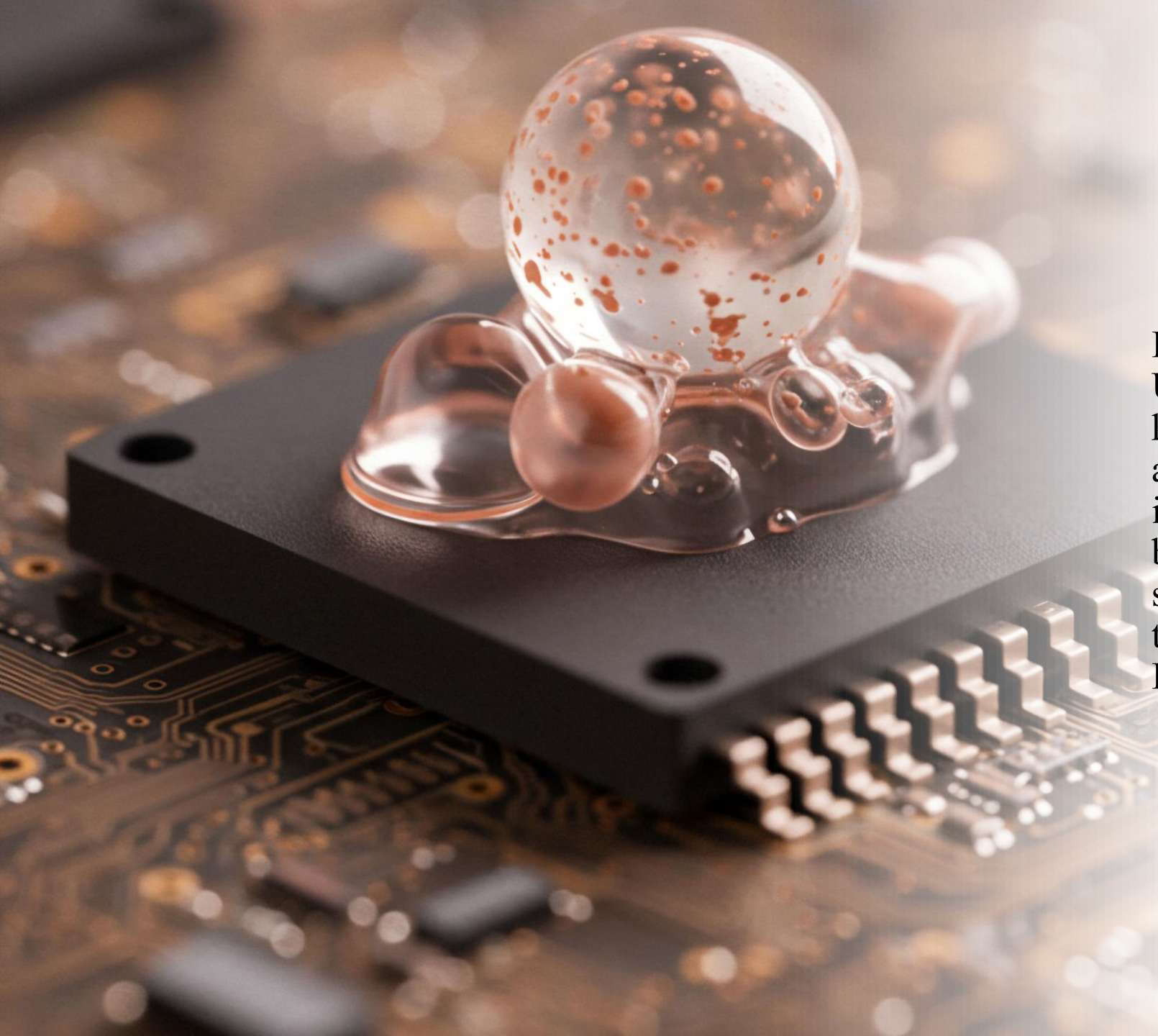
Introduction

The efficiency of the link between universities [HEIs] and Industry [the productive sector, businesses] contributes to the consolidation of regions with a high degree of collaboration and economic integration [Porter, 1998].

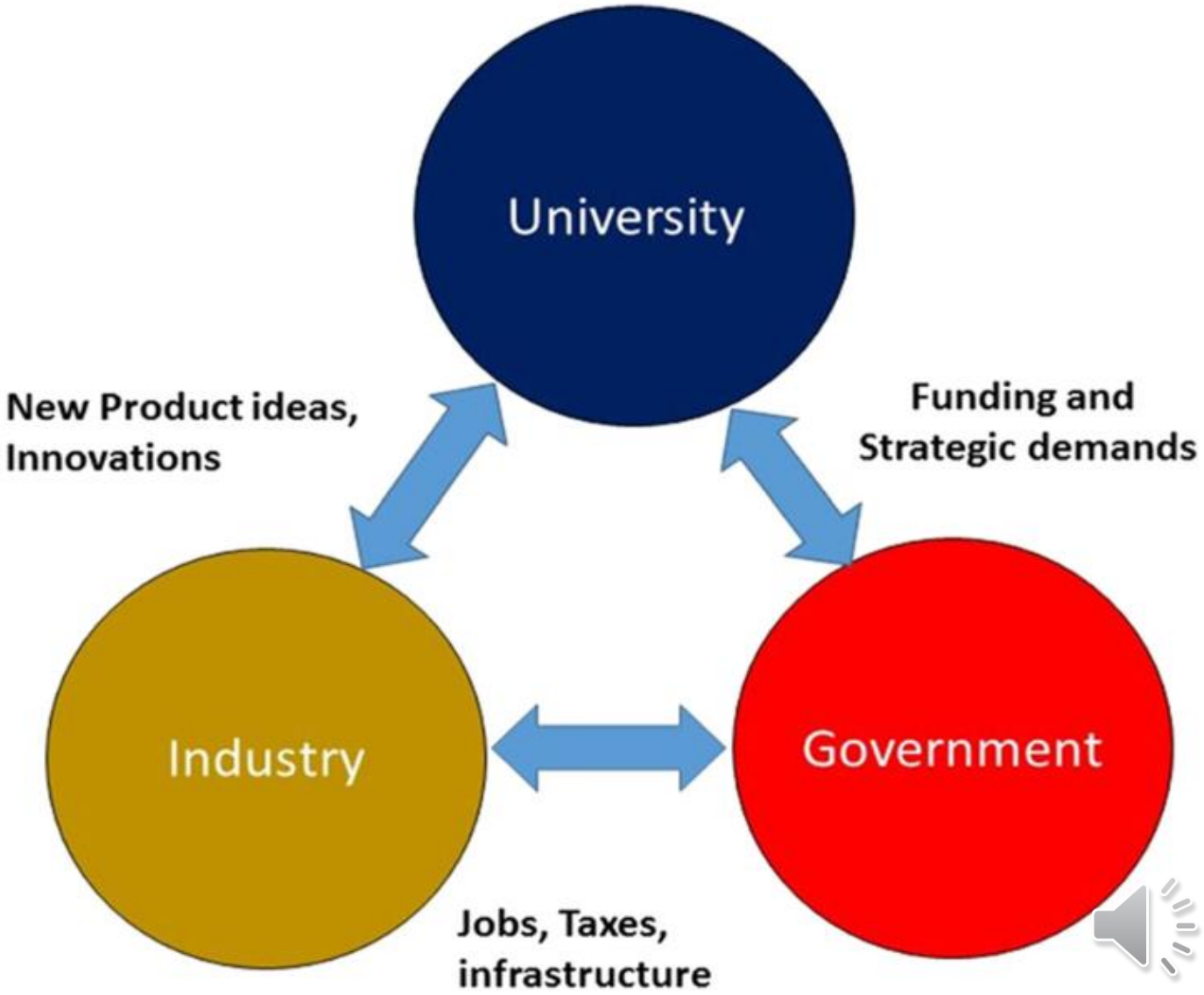




In addition, the objective of the University is to generate knowledge and disseminate it to achieve the greatest possible impact, in pursuit of social well-being. Therefore, this research seeks to identify the main variables that influence the University-Industry linkage process.

Triple helix model

The approach of Etzkowitz and Lesdesdorff [2002] with their Triple Helix model [Cabrero et al., 2001;Mendoza et al., 2020; Ramírez et al., 2012; Robles Cárdenas & Ballina Ríos, 2012] which, indicate that de UIL process is carried out by three main actors: Government, Industry and Academia.

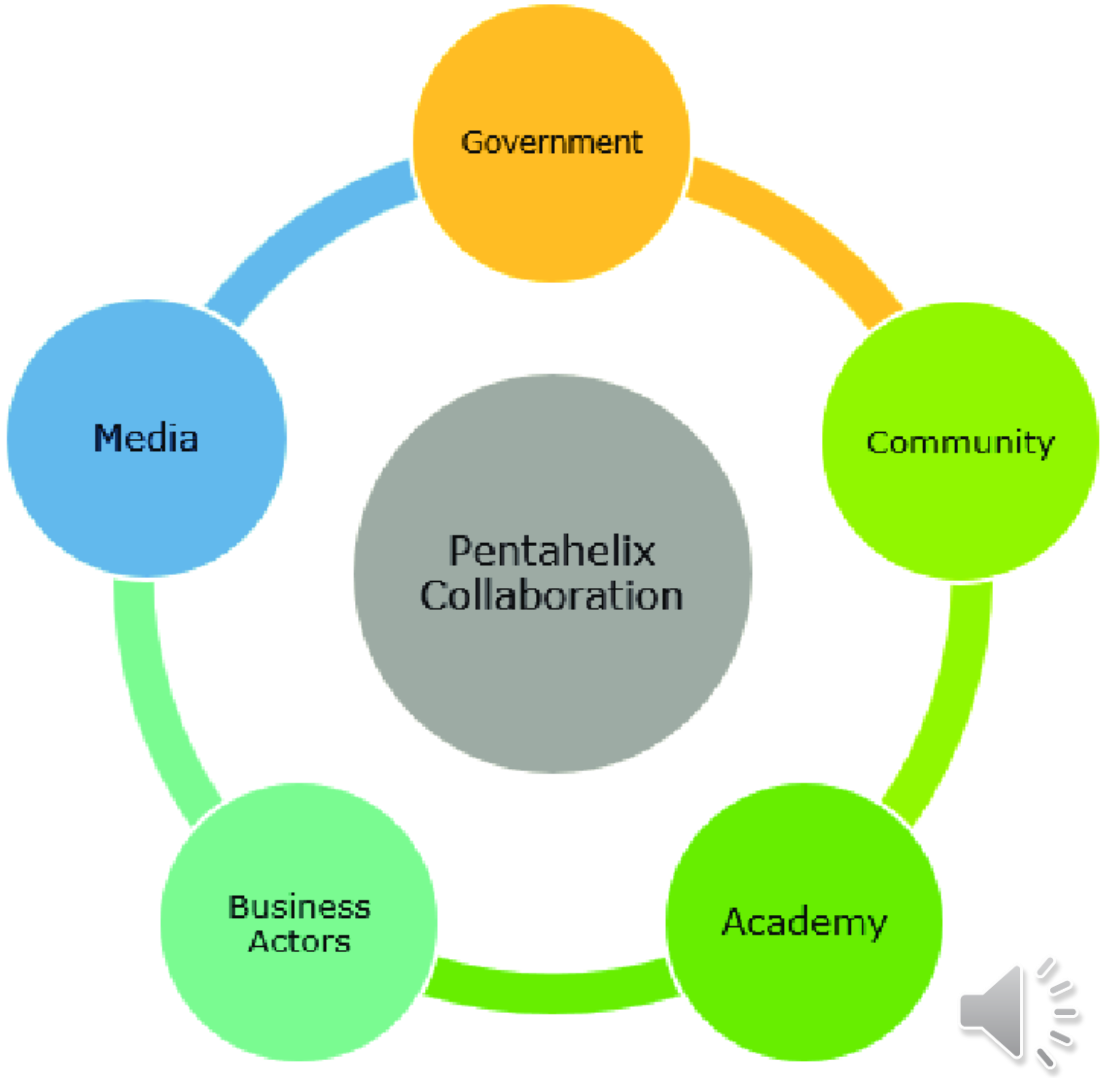


Fourth helix

However, Cayannis and Campbell [2009] propose adding a fourth helix: the user of the innovations.

Penta helix model

Later a fifth helix is added, the environment [Castillo-Vergara, 2020].



LINKAGE

The means that allows the university to interact effectively and efficiently with its environment coordinating its teaching, research, and cultural service outreach functions, while also fostering its ability to engage with productive and social sectors within mutually beneficial actions, which enhances its strategic positioning.

Alcántar and Arcos, 2004.

Education System

Formed by Higher Education Institutions [HEIs], Technological Universities [TUs], and Research Centers [RCs], through their faculty, researchers, and students. Therefore, research can be advances in technological development, translating into tangible goods that benefit society [Orozco Hernández, 2019]

Government

A body that will implement the efficient use of public resources to incentivize technological collaborative, and open development as well as generate political and legal capital which leads to the effective articulation of the Pentahelix to generate high-quality and sustainable knowledge, as it provides feedback to the other four elements that comprise the model [Orozco Hernández, 2019].

Industry (Productive Sector)

All the productive units as companies and businesses that can produce significant impacts on production, as well as development opportunities for a sustainable, high-quality economy with a long-term vision, also considering their social responsibility and commitment to the environment [Orozco Hernández, 2019].

Society

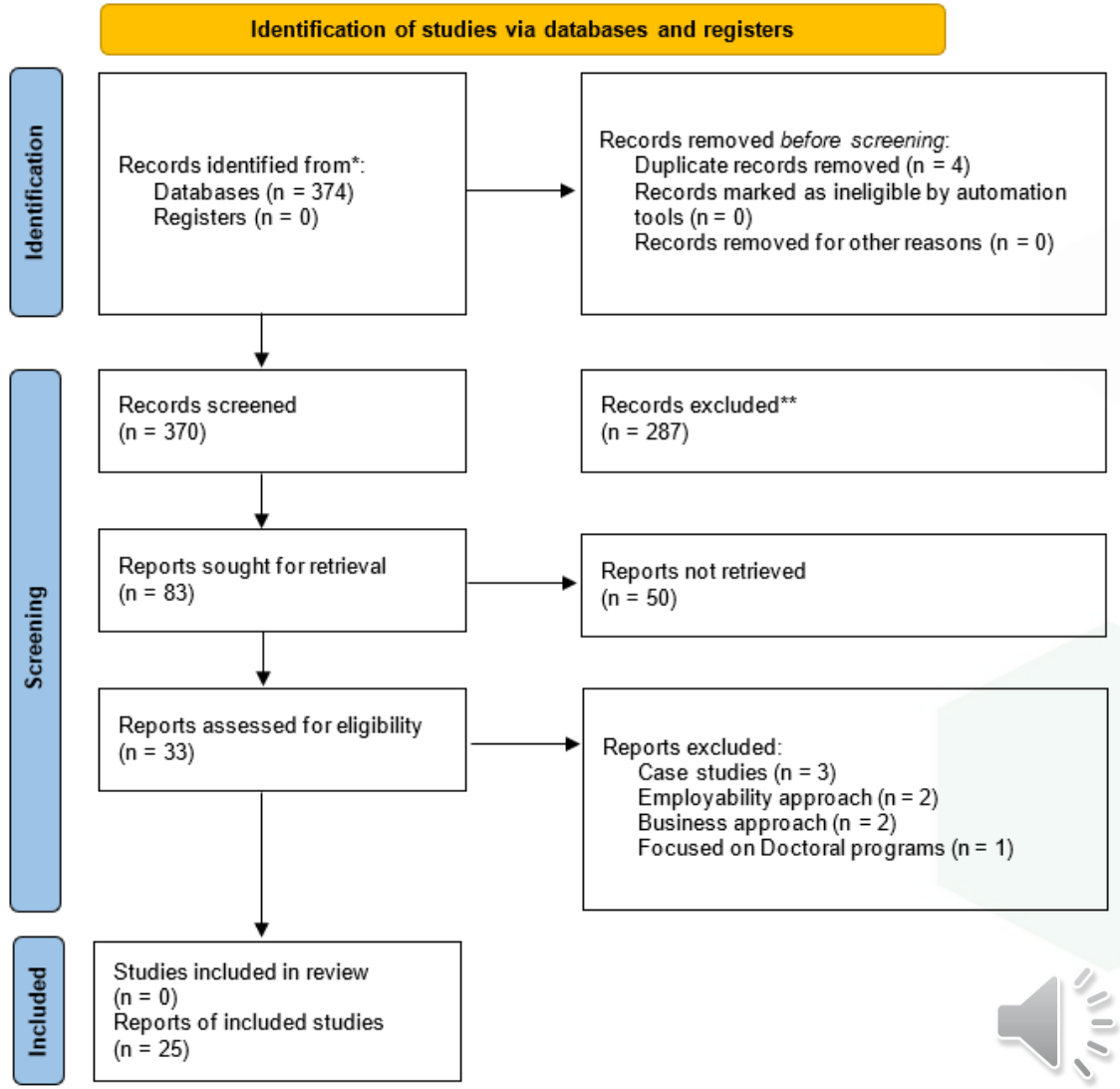
As it is not an entity, nut rather a group of individual, the study of interactions arising from this dimension is carried out through two axes: civil society organizations and individual personal petitions.

Environment

It is not an individual or group of entities, but the space itself, the scenario in which the other dimensions and the resources they have are found.

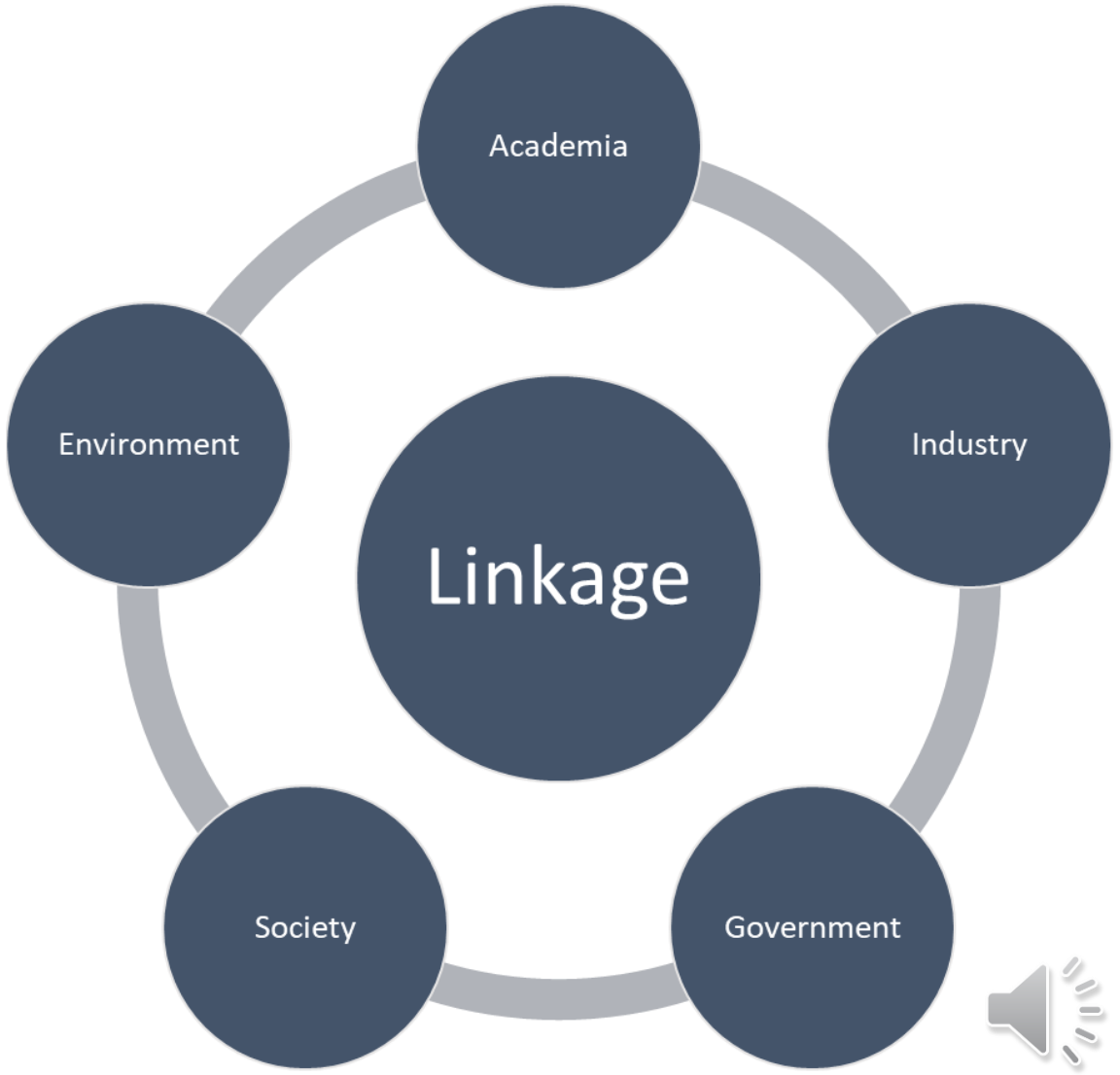
Methodology

A qualitative, documentary-type research was used, considering scientific search engines no older than 5 years, descriptive and cross-sectional



Results

Dimensions of the N-helix model were established:



Results

The application of each variable was carried out, locating them in the dimension, determining the variables, their definition and indicators, as well as the source from which the different variables were obtained, supported by the search for information.

Variables for the Education System
Technology transfer
Knowledge management
Innovation
Technology Management
Human resources training and transfer

Item creation

Once the indicators were defined, they were operationalized and items created.

Initially, it was decided to ask quantitative questions. However, given the possibility of not being able to meet the information needs with the available data, it was decided to develop a qualitative instrument based on the Lickert scale.

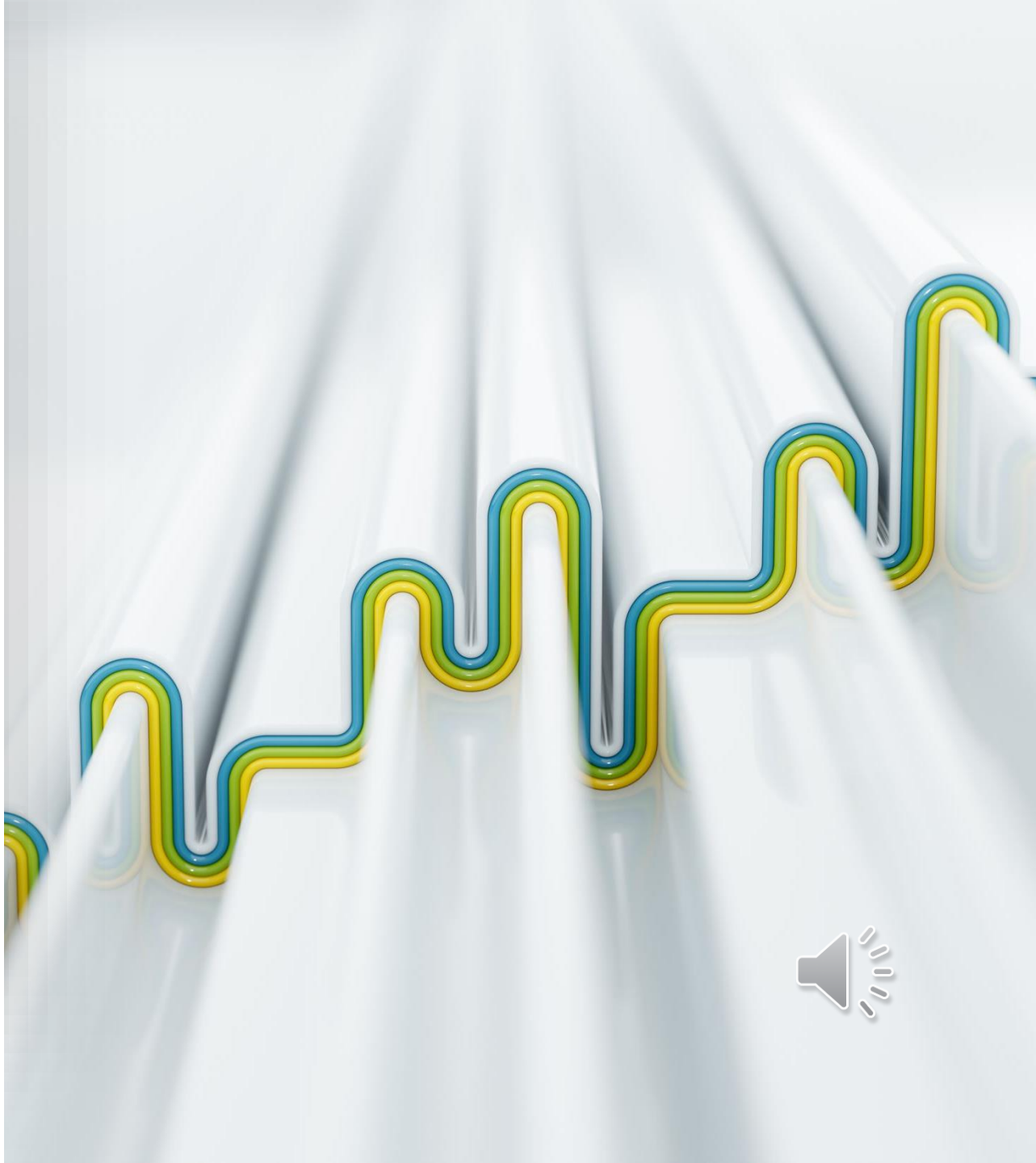
Transfer of technology

No.	Afirmación
1.	The institution publishes periodically in journals.
2.	The institution participates in conferences where research advances are disseminated.
3.	The institution provides funding for research projects.
4.	The institution provides consulting or advisory services.
5.	The institution conducts training activities to improve staff capabilities.
6.	The institution encourages the registration of intellectual property [patents, utility models, industrial designs, and trademarks] among students and researchers.
7.	The institution transfers technology to individuals external to the institution through informal mechanisms specific to its bureaucracy.
8.	The institution transfers technology to individuals external to the institution through formal means.

Conclusions

The process of linkage between universities and industries can be evaluated through a qualitative data collection instrument that allows for determining its current status.

As part of the analyze of the linkage between HEIs and the industry sector, variables were identified allowing to create a measurement instrument. So, for the current phase of the proposal, the determination of variables that support the linkage measurement construct has been achieved.



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Background

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Discussions

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