Interdisciplinary Perspectives In University Teaching Of Economics: Case Colombia

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Abstract

The overall objective of this research is to characterize university-level economics education in Colombia. Economics programs in Colombia emerged in a context where the country was undergoing institutional changes (Montenegro, 2017). The significant challenge of integrating new technologies, information, and knowledge (ICT) into the learning of this discipline (economics) arises as a fundamental factor in the comprehensive education of future professionals. The study is conducted through a bibliometric analysis using a sample of 1234 documents published on economics courses in university education, sourced from the SCOPUS database. Using VOSviewer software, co-occurrence of keywords related to the topic is determined. The methodology also encompasses a quantitative and qualitative study of national economics programs, with a total population census of 85 curriculum plans. These plans must be aligned with current labor market demands to address Colombia's real socioeconomic issues. Subsequently, a comparative analysis of the curriculum plans enables a critical assessment of their alignment with the principles of the new economy, given the current circumstances of COVID-19.

Introduction

The university, derived from the Latin "universitas magistrorum et scholarium," roughly meaning "community of teachers and students" (Colish, 1997), is understood as the higher education institution that comprises various faculties and confers academic degrees corresponding to different epochs and countries, including colleges, institutes, departments, research centers, and professional schools (RAE, 2001). Thus, it forms, constructs, and formally implements academic curriculum plans based on professional offerings (programs).

The curriculum or study plans represent the instrumental synthesis, organization, guiding documents, and teaching-learning experiences that must be completed in a socially and culturally valuable professional career. It encompasses the objectives, content, and necessary actions that teachers and students must undertake to develop their curriculum (Furlan, Casarini, Ibarrola, & Arnaz, 1996, 1999, 1984, 1981), implicitly including the motivation students need to achieve their academic goals successfully and to assume responsibility for their future careers.

Economics programs in Colombia emerged in a context where the country was undergoing institutional changes (Montenegro, 2017). From the Thousand Days' War that led to economic mismanagement disorder, to World War I with decreased customs revenues prompting the government to withhold metals backing the currency's value. The Central Bank of Colombia was established in 1923, and in 1931, the country's monetary system detached from the gold standard (Miesel, 1990). The Second World War saw a significant rise in economic growth in the United States while Colombia's growth declined due to stagnant foreign trade, as indicated by Montenegro (2017) in his 1992 study. This led to the necessity of teaching economics in the country to address the demand for policies to improve macroeconomic variables and stimulate national growth and development.

After 1945, the Institute of Economic Sciences was founded under the National University's Faculty of Law. It aimed to develop specialization in economics across various professional fields, primarily those with legal preparation (Rivera, 2002). The curriculum encompassed five areas: economic theory, political economics, social sciences (history), research, calculation, and control (public finance, statistics, mathematics, demography, accounting, financial mathematics, advanced finance, fiscal and trade balances). Subsequently, in 1952, this institute became the Faculty of Economic Sciences, housing economics, administration, and accounting programs. While it's challenging to pinpoint which university (National, Javeriana, Normal Superior) in the country offered the first independent Economics program, all shared the vision of producing professionals attuned to the world's social, political, and economic issues.

With the economic boom of the Caribbean region in the 1990s followed by its decline, the University of Sucre established the Faculty of Economic and Administrative Sciences under the Department of Administration and Finance. It later gained autonomy as the Faculty of Economic and Administrative Sciences, housing the Economics program (Unisucre, 2013). Between 1996 and 2000, there was a 14.4 percentage point increase in higher education coverage; of total enrollees, 76.9% pursued university degrees. The economics field attracted the highest number of students, followed by administration, accounting, and related sciences (32.5%), engineering, architecture, and related fields (19.5%), and social sciences and law (18.2%). However, the institution's educational quality was below the national average (Aguilera, 2005), highlighting that educational coverage doesn't equate to quality.

Hence, it's essential to recognize the significance of education as a social, moral, intellectual, and pedagogical value. Educational system transformations and institutional functioning are interconnected with development, which involves not

just economic growth but also improving living conditions, including education. According to the United Nations Development Program (UNDP), this perspective reflects the relationship between education and the economy. The new global paradigms introduce the idea of pluralism in the teaching of economics as a crucial factor for training future professionals. An integrated and pluralistic economic education is essential for comprehending the world and its relationships in a more comprehensive manner, going beyond the technical aspects currently taught in classrooms (González & Espinoza, 2015).

With the New Economy, academic institutions face technological, informational, and knowledge (ICT) challenges concerning accessibility, quality, wellbeing, among others. Universities can contextualize knowledge through continuous curriculum planning, aligning it with current and rapidly changing labor market demands. This not only ensures proper education but also empowers economics professionals to effectively contribute to solving the economic issues affecting society at large. However, this is often ineffective because many public universities, for instance, follow a similar marketoriented curriculum planning approach in their undergraduate and graduate programs (Rhoades & Slaugther, 2004).

Limited participation and collaboration in creating curricula that align with social reality and professional formation are skewed by universities that don't allow students to access perspectives and methods from other disciplines, which could provide opportunities to shape their education according to their life goals and academic interests. As Colander (2007) points out, quoted by González M. (2016, p. 23), "given its complexity, economics presents content errors that are taught or aligned primarily with possible economic theory and not with practice, which is also necessary." This suggests a combination of plans that maintain the foundation of conventional economic teaching while

incorporating new knowledge tools offered by the evolving market. This approach could offer a different perspective on training, focused on society's real needs and changes. Based on this, the following question arises: What are the characteristics of economics study?

To address the presented issue, the central objective is set to characterize the curriculum plans of the economics major in Colombia. In this regard, the structure of this study comprises, firstly, a bibliometric analysis that delves into research categories, utilizing the SCOPUS database. Subsequently, a statistical evaluation of the general features of curriculum plans in Colombia will be conducted.

Globally, numerous studies have been conducted concerning curriculum structures of economics programs, considering aspects such as teaching, quality, learning, technology, among others. In this context, the research by Giraldo (2016) stands out, emphasizing education as a pivotal instrument for social mobility through employment. This is influenced by crucial factors like education level and the general and specific competencies of individuals. The assessment of the quality of the economics program at Universidad Militar Nueva Granada (UMNG) was grounded in the analysis of job profiles and academic curriculum plans. Utilizing the Labor Observatory of the Ministry of Education, the employability of UMNG's economics graduates was examined, along with employers' perceptions in major cities regarding freshly graduated higher education candidates. Additionally, the academic curriculum of the economics program was reviewed, leading to the identification of various actions for program improvement, such as technology integration and the implementation of a seminar allowing students to define their electives.

Jaramillo (2016) highlights that social sciences delve into understanding reality through two distinct processes: societal transformation that presents new

cognitive challenges, and the development of controversies among theoretical currents offering differing interpretations of social reality. The synthesis of these processes materializes in academic curriculum plans. In this context, the challenge in economics education is to educate professionals capable of analyzing economic processes from a scientific perspective, utilizing tools such as logic, statistics, and econometrics for constructing economic theories and models. From a purely curriculum-based perspective, the study plan must be content-rich, encompassing the study and analysis of economic thought, understanding the Colombian reality, mastering mathematical tools, both pure and applied to socio-economic analysis, and fostering research processes.

On the other hand, Terán (2008) delves into considerations regarding how an individual can become an economist and whether attending a university is a valid path to achieve this goal. Their research, "History of the Economics Program at Universidad de Nariño 1973-2003. Prospective Balance," is based on interviews with 75 economics program students in 2006. The results indicate that the program offered by Universidad de Nariño is a suitable place to study economics, as it follows the same sequence of curriculum plans as other faculties in the country and abroad.

In Vondra's (2017) study, the quality control mechanism yields long-term improvements for a field or study program, ensuring proper operation within the competitive university environment. In Czech higher education, professional fields of study have been enhanced through amendments to the Higher Education Law. This creates a need for control and improvement mechanisms that are more industry-focused than reliant on academic publications. Gathered findings are presented, and student expectations are highlighted, which undervalue theory despite its necessity for a fundamental understanding of the industry. This work proposes a

continuous development mechanism that enhanced the Multimedia undergraduate field of study in economic practice, offering general recommendations that could benefit other study fields.

Metodology

This research adopted a methodological approach that integrated both quantitative and qualitative aspects, enabling a comprehensive and in-depth analysis of studies related to economics courses in higher education.

Quantitative Approach: Bibliometric Analysis

To address the quantitative dimension of the research, a bibliometric analysis was conducted, involving several stages:

- Sample Selection: A sample of scientific articles from the Scopus database was selected. These articles were related to studies about economics courses in higher education.
- Data Collection: Essential data from the selected articles, including keywords, authorships, abstracts, institutions, and countries involved in the research, were meticulously collected.
- Co-occurrence Analysis: Using the VOSviewer analysis tool, a detailed co-occurrence analysis of keywords in the articles was carried out. This analysis revealed thematic patterns and the most frequent relationships between keywords.
- 4. Hierarchical Keyword Clustering: Through VOSviewer, a hierarchical cluster of keywords was created. This visual map allowed the identification of thematic clusters and predominant areas of focus in studies about economics courses in higher education.
- 5. Authorship Correlation: An exhaustive analysis of collaborations between authors in the

selected articles was performed. This identified co-authorship patterns and prominent collaborative relationships in the field.

Institutions and Countries Identification: A
detailed analysis was conducted to determine
institutions and countries showing greater
activity and contribution to research on
economics courses in higher education.

Quantitative Approach: Comparative Analysis of Curriculum

To address the quantitative focus in the comparative analysis of curriculum for national economics programs, the following steps were followed:

- 1. Sample Collection: Curricula from various national economics programs were collected to create a representative sample.
- Data Compilation: Data needed for the comparative analysis, including the average duration of semesters and other relevant variables from the selected curricula, were gathered.
- Data Processing: Using SPSS 28.0 statistical software, the collected data underwent processing and analysis. This yielded descriptive analyses and cross-tabulations of curriculum characteristics.
- Descriptive Analysis: Descriptive statistics were calculated for variables of interest in the curricula, such as the average duration of semesters and specific program characteristics.
- Cross-Tabulations: Through cross-tabulation analysis, relationships and patterns among different curriculum variables, such as sector, Ministry recognition, years of validity, modality, and credit hours, were explored.

Quantitative Approach: Bibliometric Analysis in Literature Review

For the quantitative analysis in the review of existing literature regarding global economics curriculum, the following steps were undertaken:

- Literature Selection: Relevant scientific articles globally related to economics curriculum in higher education were meticulously collected and selected.
- 2. Application of Bibliometric Analysis: Bibliometric analysis was applied to the selected literature, utilizing the SCOPUS database. This allowed obtaining indicators about publication productivity, authors, institutions, and publishers, as well as the analysis of citations and impact indices. These components were integrated with the qualitative approach to enhance a comprehensive and detailed understanding of studies related to economics courses in higher education.

Use of VOSviewer Software: Creation of Bibliometric Maps

- Data Compilation: Data necessary for constructing bibliometric maps, including co-citation and cooccurrence data of keywords, were obtained.
- 2. Map Construction: Bibliometric maps were created using VOSviewer software, visualizing relationships between authors, journals, and keywords present in the reviewed literature.
- Trend Identification: The generated bibliometric maps contributed to identifying emerging trends in keywords related to economics curriculum.

It is worth noting that the use of bibliometric analysis, a subdiscipline of scientometrics, was crucial in approaching the global literature review on economics curriculum. This tool, as per (Rueda-Clausen, 2005), assessed the quality of the knowledge generation process and its impact on the

environment. Similarly, (Pritchard A., 1969) defined it as the application of mathematical and statistical methods to analyze scientific literature and its authors. Through bibliometric analysis, it was feasible to extract indicators, in this case sourced from the SCOPUS database, encompassing the productivity of publications, authors, institutions, publishers, and publication locations. This encompassed thematic analysis, citations, and impact indices necessary for the study. Also, the use of VOSviewer software (Eck & Waltman, 2010) to construct bibliometric maps of authors or journals based on co-citation or co-occurrence data was highlighted. In this study, it was employed to create clusters that showcased trends in keywords related to the subject matter.

Sample Framework

This research utilizes a sample (N) of 929 globally published documents concerning economics courses in higher education, collected through the SCOPUS database (Figure 1) TITLE (economics AND studies AND university teaching) AND (LIMITTO (LANGUAGE, "English") OR LIMITTO (LANGUAGE, "Spanish")) AND (LIMITTO (DOCTYPE, "ar")). Initially, an analysis of the gathered information was conducted, followed by data decomposition to attain the characterization of sample parameters, publication profiles, and the most co-occurring keywords. It is noteworthy that the presented samples have been chosen in a limited

number (15) of better publications.

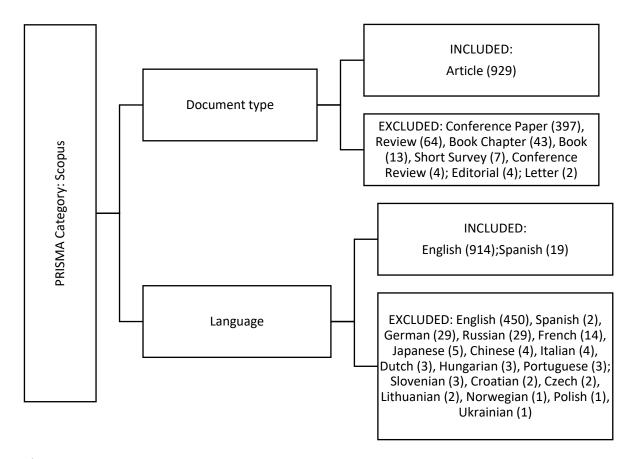


Figure 1. PRISMA Category: Scopus

RESULTS

Numerous studies have been undertaken in the context of economics courses within higher education on a global scale. This recognition underscores the pivotal role of this field in shaping societal dynamics and influencing the evolution of innovative teaching and learning methodologies. Prior to 1986, the global landscape underwent profound structural transformations, spanning economic, social, cultural, and political domains. The aftermath of the First World War, coupled with financial upheavals and a burgeoning demand for advanced education, triggered a demand for fresh pedagogical paradigms and academic attention.

Following 1986, the realm of research in university management, particularly concerning curriculum development, began to gain traction. The historical junctures mentioned earlier further catalyzed the need for higher education, subsequently galvanizing the exploration of novel realms of knowledge, including economics. Notably, the period from 1968 to 1998 not saw a gradual and consistent emergence of publications in this field (figure 2). However, it was in the year 2000 that a notable surge in research activity occurred, with the number of publications per year reaching peaks.

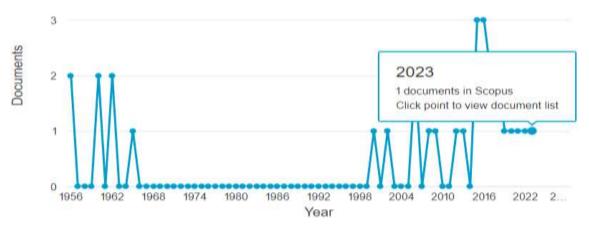


Figure 2. Thirty better publications per year about economics courses.

Sources: Scopus

Several academic journals are dedicated to publishing articles related to economics education annually. One such journal is "Voprosy obrazovaniya/Educational Studies Moscow," which has been publishing quarterly since 2014 by the Higher School of Economics at the National Research University (HSE) and features five papers per year. The "Journal of Economic Education" has been publishing between one and two issues per year since 1971. The "Proceedings Frontiers in Education Conference (FIE)" experienced a decline in publications, going from three articles per year to two starting in 2011. Similarly, "Economics of Education Review" had two annual publications between 2008-2010, experienced a decrease in 2011, dropping to one publication per year. However, the "International Journal of Emerging Technologies in Learning" maintained a steady publication rate of one article per Stephono of the sense se

Year

year until 2019, when it increased to four per year (figure 3).

Figure 3. Thirty better source per year about economics courses.

- Proceedings Frontiers in Education Conference Fie - Economics Of Education Review

Sources: Scopus

◆ Voprosy Obrazovaniya → Journal Of Economic Education

- International Journal Of Emerging Technologies In Learning

According to Scopus, Olga Zlatkin-troitschanskaia from Johannes Gutenberg University Mainz in Germany has the highest number of publications with six research papers covering competencies in higher education, pedagogy, learning, and international perspectives. Another prolific author is Forsters, M. with five articles. The United States leads in the number of certified publications in the field of economics education at the university level with 416 publications. This is attributed to substantial investments in education and research, particularly in the realm of higher education to enhance and strengthen teaching quality. Other countries that have notable publication numbers include the United Kingdom with 84, Russia with 66, Germany with 52, Australia and Canada with 39 each, China with 38, Spain with 30, and the Czech Republic and Hungary with 29 and 26 respectively. In terms of universities with the highest number of publications about economics courses globally, the University of South Africa leads (Figure 4).

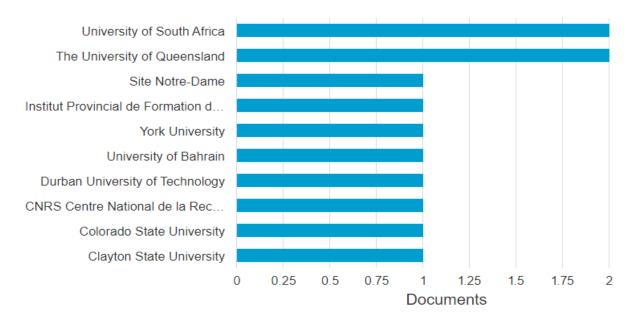


Figure 4. Documents by affiliation

Sources: Scopus

The illustration shows that the social sciences have the highest percentage of research with 26.4%, followed by engineering with 17.8%, and other fields with 14.8%. Economics publications are ranked seventh among the most researched areas, accounting for 5.4%. However, there is still a relatively low correlation with other careers or fields of study. As a result, economics education remains a topic of emerging significance for professional training processes.

Statistical analysis of variables in the research model

The statistical analysis of variables in the research model applied to economics programs in Colombia reveals that the private sector has the highest prevalence of this type of education. The most common form of recognition by the Ministry of National Education is (official recognition). Most economics programs in Colombia have a validity of 7 years, with a predominance of in-person modalities, a mode of 144 credits, 9 semesters, a semester-based admission period, and a tuition cost range between three and six million colombian money. Table 1 presents the descriptive statistics of the data.

Evaluating the results of the obtained frequencies, they show that 69% of economics programs are in private institutions with a standard deviation of 0.463. This suggests the possibility that there could be a stronger emphasis on this predominant sector, and that access for students from lower socioeconomic backgrounds might be limited in pursuing this type of career. Although "official recognition" is the prevailing denomination, it's encouraging to note that high quality has a frequency of 44% with a deviation of 0.496, potentially indicating a growing attainment of this distinction. As shown in the cross-tabulation graphs, programs in the public (official) sector need to improve their quality standards, as they have the lowest number of high-quality programs.

Table 1. Descriptive Statistics

		Α	В	С	D	E	F	G	Н
N	Valid	79	79	79	79	79	79	79	79
	Missing	0	0	0	0	0	0	0	0
Mode		2	1	7	2	144	9	1	4
Standard deviation		0,463	0,496	1,4897	0,335	11,105	0,829	0,273	1,305

Legend: A=Sector, E=Credit_Number,

B=Ministry_Recognition, C=Year F=Number_Of_Duration_Periods,

C=Years_Of_Effectiveness,

ectiveness, D=Modality, G=Admission_Periodicity,

H=Tuition_Cost_Interval.

The statistical analysis of the variables in the research model applied to economics programs in Colombia highlights the prevalence of private institutions in this field and suggests that there may be limitations for students from lower socioeconomic backgrounds. Additionally, there is potential for growth in high-quality programs, particularly in the public sector. An automated analysis of the regression model shows an accuracy of 88%, with the validity in years being the most important factor.

Conclusion

In conclusion, the study reveals that the United States has the highest number of certified publications with 416, followed by the United Kingdom (84), Russia (66), Germany (52), Australia and Canada (39), China (38),

Spain (30), the Czech Republic (29), and Hungary (26), with no presence from Latin America. The most used variables for curriculum analysis are competencies in higher education, pedagogy, learning, and international perspectives. The social sciences (26.4%), engineering (17.8%), and economics (5.4%) are the areas of greatest research. The study suggests that the official sector in Colombia needs to establish measures to increase the number of high-quality registrations for their economics programs, instead of relying disproportionately on the private sector for this responsibility.

Strengths of the study include its global scope and comprehensive analysis of publications related to economics education. The study also highlights the importance of economics education in shaping societal dynamics and innovative teaching and learning methodologies. The statistical analysis of variables in the research model applied to economics programs in Colombia provides valuable insights into the prevalence and quality of economics education in the country.

However, weaknesses of the study include a lack of analysis on the impact of economics education on economic development and a limited focus on Latin America. Additionally, the study does not provide recommendations for improving the quality of economics education in Colombia beyond establishing measures to increase the number of high-quality programs.

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