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Map of Research Published on Administration in Africa

Mapa da investigação publicada sobre administração em África
Mapa de investigaciones publicadas sobre administración en África

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ABSTRACT

Knowing the path traveled is an important step to be able to distinguish what remains to be traveled. In correspondence with this idea, this study seeks to analyze the investigations carried out by administrative science researchers on the African continent. To achieve this end, we carry out a bibliometric study, starting from an analysis of publications on Administrative Sciences by researchers from the continent reported in Scopus. Once 100% of these publications are reviewed, 86.8% of them are worked on by defining the functions or areas of knowledge where they develop, in the same way the temporal evolution is analyzed, as well as the areas and countries where they develop. In addition, some elements related to the collaboration links between the countries are characterized according to the development of the study, the main journals where the investigation results have been published, and the behavior of the authors with the largest number of publications.

Keywords: Administration, Africa, Research.

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RESUMO

Conhecer o caminho percorrido é um passo importante para poder distinguir o que falta percorrer. Correspondendo a essa ideia, este estúdio busca analisar as investigações realizadas por pesquisadores da ciência administrativa no continente africano. Para tanto, realizamos um estudo bibliométrico, a partir de uma análise das publicações em Ciências Administrativas de pesquisadores do continente relatadas na Scopus. Uma vez revisado 100% dessas publicações, ele trabalhou com 86.8% delas definindo as funções ou áreas de conhecimento onde se desenvolveu, da mesma maneira se analisou a evolução temporal, assim como as áreas e países onde se desenvolveu. Além disso, alguns elementos relacionados aos vínculos de colaboração entre os países são caracterizados de acordo com o desenvolvimento da estúdio, os principais periódicos onde os resultados da pesquisa foram publicados e o comportamento dos autores com maior número de publicações.

Palavras-chave: Administração, África, Investigação.

RESUMEN

Conocer el camino recorrido es un paso importante para poder distinguir lo que queda por recorrer. En correspondencia con esta idea, este estudio busca analizar las investigaciones realizadas por autores de las ciencias administrativas en el continente africano. Para lograr este fin, partimos de un análisis de publicaciones científicas del área de Ciencias Administrativas de autores africanos que se encuentran registradas en Scopus. Una vez revisado el 100 % de estas publicaciones, se trabaja con el 86.8 % de ellas definiendo las funciones o áreas de conocimiento donde se desarrollan, del mismo modo se analiza la evolución temporal, así como las áreas y países donde se llevan a cabo. Además, se caracterizan algunos elementos relacionados con los lazos de colaboración entre los países según la evolución de esta ciencia, las principales revistas donde se han publicado los resultados del estudio y el comportamiento de los autores con mayor número de publicaciones.

Palabras clave: Administración, África, Investigación.

Introduction

Like most sciences, management does not follow a linear path. Although recognition as an independent science has existed for over 100 years and the contributions to its body of knowledge have been wide and varied, enriching its wealth from fields as diverse as mathematics and psychology; for some authors (de Mattos, 2009) the question arises frequently: is Administration an art or a science? Until now, there is not a definitive answer.

Analyzes of scientific epistemology by African authors are diverse, with authors such as Metwally and Nyathi (2017) describing the research themes presented on the stage of the 2016 African Academy of Administrative Conference, where the themes were based on an effort to describe the awakening of administrative science in the African context and development and the main steps or trends in its development (Horgan, 1993).

On the other hand, Callaghan (2018) analyzed the impact of social science theories and trends on administrative science and solved the problem of difficulty in measuring several variables related to independent and dependent administration. The various paradigms that can be applied as a management approach and the managerial consequences of adopting one or another paradigm (Pozo Curo et al., 2020).

Similarly, Ngulube and Ngulube (2015) conducted a study in which they analyzed over 332 research articles in the region, using multiple research methods to validate or draw their conclusions. A similar analysis was conducted by Feldman (2018) who examined in greater depth the use of qualitative or quantitative methods in the South African context, specifically in leadership research. On the other hand, Jordaan et al. (2013) provided a general description of publications in the South African Journal of Economic and Management Sciences, considered one of the references in the field of management on the African continent, evaluating a total of 257 articles published between 2004 and 2010 and diving deeper into variables such as study design or participating authors.

There is currently no consensus on how science grows. Various theories have been proposed on this topic, showing points of commonality and divergence between them. Popper (1980) believed that science progresses not by confirming new theories but by rejecting those theories that contradict experience. Kuhn et al. (1962), on the other hand, raised that development of science is influenced by a priori knowledge in the theories and laws of the scientific community. Lakatos (1983) considered that science is a series of interrelated theories, so that some theories arise from previous theories. Instead, Feyerabend promoted the view that scientific progress occurs through the introduction of hypotheses that are inconsistent with theory or established facts (Aguilar Gordon & Heredia Guzmán, 2019).

The examination of the earlier theories leads to the conclusion that, despite their divergent conceptions, they share certain commonalities: the body of prior knowledge and the dissemination and presentation of new theories and research findings are prerequisites for the advancement of science. This conclusion suggests that knowing where and what to look for up-to-date, high-quality information on a particular science, which themes are more or less analyzed, which authors define research trends, and what mechanisms may be promoting or limiting the development of research are all important benefits of knowing where and what research results of a particular science are published (Baldwin et al., 2009).

Considering the above, this study aims to describe the characteristics of African writers' administration-related articles that are indexed in the Scopus database.

Literature Review

Jurado Jurado (2018) claims that Frederick Taylor's contributions to the design of pay scales, the investigation of procedures and timings, and the endeavor to save expenses are what gave rise to the field of administration's inception as a science. The definition of six fundamental business functions—administrative, security, technical, accounting, financial, and marketing—as well as the approach to the administration's functions of planning, organization, direction, and control—are provided by Fayol, who then adds his own contributions (Ibarra-Colado, 2008).

The contributions of the behaviorist school and the school of human relations enhanced these early ideas (Jurado Jurado, 2018). The Second World War set the stage for the growth of the mathematical school's contributions, which are mostly focused on industrial process optimization. Based on von Bertalanffy's theoretical ideas, the Systems school arose in the second half of the 20th century (Felix, 2003). This movement is acknowledged as another significant qualitative leap because it views the organization as an open system that interacts with its surroundings and influences both the system's overall performance and the interactions of its individual parts (Batista-dos-Santos et al., 2010).

The theory of contingencies (Oña-Sinchiguano, 2020) arises as a complement to the systems school and asserts that organizations must design their administrative systems to account for the unique conditions both inside and outside of them. Some of the most recent complexity theory postulates are merged under the paradigm of the systems school at the end of the 20th century, with this vision acknowledging commercial organizations as dynamic systems organizations (Paucar-Caceres & Jerardino-Wiesenborn, 2020).

These fundamental schools of administrative science were enriched by theoretical methodological proposals from various business administration functions as a response to internal and external shifts within organizations. For example, the shift from human resources administration to strategic human resources management (Obedgiu, 2017); from product marketing towards relationship or people marketing (Thaichon et al., 2019); from process planning to long-term supply chain management (Shen et al., 2020); from 100% quality assurance to quality management (Hamid et al., 2019).

However, not all business management functions developed in the same manner or at the same pace. Not all developed within the organization or as autonomous functions. Not all are silently recognized as business administration functions. For example, management of innovation (Guerra Betancourt et al., 2013) or industrial property, which most organizations do not take on or systematize the management of information, technology or environment management. Information management can be an independent function or part of general administration or responsibility for a particular area of organizations. Administrative sciences play a diffuse role in technology management. On one hand, many technologies and their evolution respond to particular fields of other sciences (e.g., technical sciences). However, administrators must take on their leadership for the particular conditions of each company, and organize specific processes of these technologies (e.g. evaluation, selection, maintaining, transferring, protecting, etc.) (Wu et al., 2020; Benzaquen & Charles, 2022).

Environmental management is a proactive measure taken in response to the recognition of the crucial importance of preserving resources and safeguarding the environment (Ormazabal et al., 2017). Nevertheless, there is a lack of consistent recognition and action towards this necessity among various segments of society, including businessmen. Although some organizations establish specialized departments for environmental management, the prevailing perspective is that it should be seamlessly integrated into all facets of the organization, as a cross-functional responsibility (da Costa et al., 2010).

Corporate social responsibility (CSR) initiatives have emerged as a distinct approach, characterized by similarities to environmental management but with unique features that set it apart (Silva et al., 2016). These initiatives represent organizations' efforts to address not only their economic interests and comply with environmental regulations imposed by society, but also to respond to various demands from different social actors. By doing so, organizations aim to ensure their long-term sustainability (Ferrer, 2021).

Two research disciplines, project management and the management of actions aimed at establishing business relationships outside the borders where the organization operates (internationalization), are integral parts of the administrative functions of organizations. These disciplines are considered as expressions of specific conditions that align with strategic decisions related to the social purpose of the organizations. The field of administrative sciences encompasses these disciplines, which play a crucial role in social and investigative practice. Project management, as highlighted by Oliveira and Martins (2019), focuses on effectively managing projects within organizations. On the other hand, the management of actions aimed at establishing business relationships,

as discussed by Felzensztein et al. (2020), emphasizes the importance of managing relationships with external stakeholders in an international context. These research disciplines contribute to the overall effectiveness and success of organizations in achieving their social objectives.

In order to gain a comprehensive understanding of administrative sciences, it is insufficient to merely acknowledge the functions outlined by Fayol, which are characteristic of the administrative process, and apply them to various business functions from an administrative standpoint. It is imperative to recognize that the utilization of administrative sciences should be directed towards contributing to the attainment of the organization's objectives, and thus, it is crucial to have a clear understanding of what these objectives entail (Gamero & Ostos, 2020; Rezende Oliveira & Cordeiro Martins, 2020).

According to Paucar-Caceres and Jerardino-Wiesenborn (2020), the objectives of administration in organizations can be succinctly summarized as the achievement of the 4 "E's", which encompass the traditional aspects of efficiency, efficacy, and effectiveness, along with the incorporation of an ethical dimension. This ethical dimension emphasizes that companies are not solely economic entities, but rather, they are specific systems that are integral parts of a larger social system, and as such, they must operate in alignment with societal demands and expectations (Mandujano-Salazar, 2021).

The differentiation between business administration and public administration lies in the inherent goals of the organization and the context in which it operates. While there are areas of overlap and shared knowledge between the two fields, they also possess distinct characteristics. Public administration, for instance, is significantly influenced by political science, and must also engage with disciplines like sociology and consider the impact of international geopolitical relations (Samán Chingay et al., 2022).

The general functions of administration, as proposed by Fayol, have been widely acknowledged and accepted by scholars, albeit with some minor variations introduced by different authors. Juran (Bisgaard, 2007) and other authors have suggested that these functions can serve two main objectives: monitoring and controlling the attained levels, as well as enhancing the overall performance of the organization in various domains (Queiroz et al., 2020; Zanon et al., 2020). From this perspective, organizational improvement can be considered as an additional function of administration.

Felix (2003) suggests that there are various taxonomic proposals in the literature that aim to differentiate the different aspects of administration, often viewed from a functional standpoint. This study proposes an analysis of administration based on the depiction in figure 1, which places the fundamental functions at the core of administration and surrounds them with business functions. Additionally, the author acknowledges the environment as a significant factor that influences systems and contingency theories, as well as the outcomes that summarize the diverse organizational objectives. Furthermore, three potential generic strategies are identified: integration, corporate social responsibility, and internationalization.

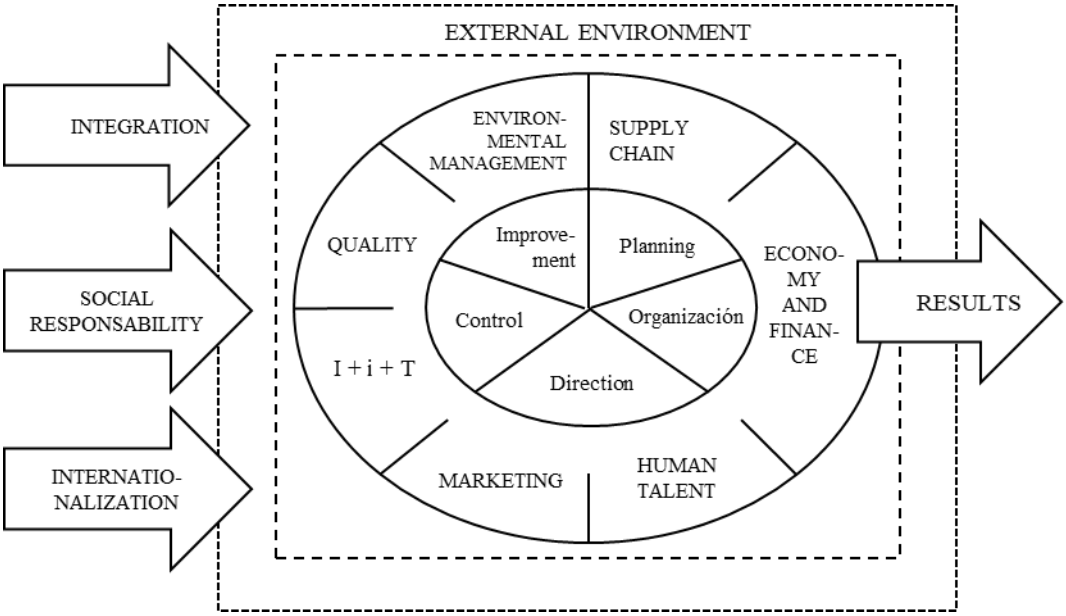

Figure 1. General scheme for the analysis of research in administration

The reference framework will be used to condense the findings of the analysis, while the examination of the publications under investigation will be conducted.

Methodology

The study encompassed three primary phases: establishment of the database, examination and categorization, and processing of information.

Conformation of the database

The formation of the database involved conducting a search in Scopus using the specified search equation: TITLE-ABS-KEY (administration) AND PUBYEAR> 1856 Y PUBYEAR < 2020 AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE,"ar")) AND (LIMIT-TO (AFFILCOUNTRY, “x”). By applying these filters, the total number of publications was significantly reduced from over 4 million to a mere 5021 publications. This reduction is succinctly presented in table 1.

Table 1.
Filtering publications

	Number of articles
Total Administration	4.285.235
Area: Business, Administration and Accounting	344 783
Type of documents: Articles	229 137
African countries	5021

Note: Own elaboration.

Classification of publications

The articles obtained from the research were categorized based on the scientific fields they pertained to. It was observed that an article could be associated with multiple scientific areas, similar to how they were classified according to the sectors of research and the countries involved. The classification process relied on the information provided in the titles and keywords of the articles. In order to ensure the accuracy of the classifications, the articles were divided into five subgroups and subjected to an inverse

pyramidal classification system: 1, 2, 3. Each subgroup was initially reviewed by an expert classifier, followed by a secondary review conducted by two additional classifiers. Any discrepancies or incorrect classifications identified during this process were further analyzed by three other classifiers. This rigorous approach aimed to maintain the validity and reliability of the classification system.

Processing

The database underwent analysis using various techniques and software, based on its classification. The prosecution aimed to uncover answers to several inquiries. Firstly, they sought to determine the distribution of research across different areas or functions within the field of administrative sciences. Secondly, they aimed to understand the historical trends in investigations conducted within specific areas of science. Additionally, they aimed to identify the sectors in which administrative science research is conducted within the region under study. Furthermore, they aimed to examine the behavior of administrative science research across different countries within the region. They also sought to explore the collaboration between countries within the region and with other countries in the field of administrative science research. Moreover, they aimed to identify the prominent actors involved in these investigations and the connections established between them. Lastly, they aimed to identify the journals that report on the region's research in the field of science under analysis.

Different statistical methods were employed to determine the frequency of publications based on various factors such as administration variables, countries, sectors, and years. Additionally, the relationships between these variables were examined by constructing analysis networks and utilizing UCINET 6 software. The selection of this software was motivated by two factors. Firstly, it was necessary to extensively edit the database in order to exclude articles that did not contribute directly to the scientific knowledge being analyzed. Secondly, the software enabled the editing of graphs, thereby enhancing their visual representation and comprehension, which was particularly important due to the large number of variables involved in certain networks.

The subsequent networks were established:

- Interconnections among variables or functions within the administration.
- Interconnections between the variables or functions within the administration and the countries.
- Interconnections between the variables or functions within the administration and the sectors.
- Cooperation among Latin American countries.
- Cooperation of Latin American countries with other nations.

Results

From the conducted analysis, the initial finding was the exclusion of 663 articles from the study, accounting for 13.02 % of the total articles to be reviewed. These articles were deemed irrelevant to the field of administrative sciences. The reasons for their exclusion varied, including their focus on other disciplines such as pedagogy, where the subject or context of study pertained to training processes in administration. Additionally, some articles proposed the use of technologies that, while contributing to business objectives, fell under the domain of other scientific fields. Furthermore, certain articles were classified within the administrative sciences category without sufficient evidence to support their placement. Moreover, the analysis also identified the presence of 46 articles dedicated to bibliometric analyses.

Table 2.
Distribution of articles by administration functions

Functions	No	Functions	No	Functions	No
General administration	**965**	**Economy and finance**	**529**	**Supply chain**	**456**
Management	184	Accounting	87	Outsourcing	18
Public administration	16	Cost	5	Value chain	9
CEO	12	Revenue management	30	Demand	29
Control	149	Stock market	2	Resource management	56
Organizational design	1	Working capital	25	Supply chain	244
Teamwork	36	Market profitability	2	Inventory	57
Strategy	24	Finance	206	Improvement	17
Success factors	24	Cash flow	4	Location	1
Government	110	Investments	64	Capabilities	3
Leader	151	Taxes	16	Forecast	20
Improvement	37	Credits	17	Operation management	1
Organization	5	Budget	18	Reverse logistics	1
Planning	140	Amortization	4	System	65
Proactive	3	Profits	49	**Results**	**641**
Resilience	20	Trademark	66	Gain	11
Efficiency	47	Commercialization	3	Debt	11
Behaviour	161	Communication	57	Productivity	39
Competencies	36	Consumer behavior	102	Effectiveness	74
Diversity	41	Customer relations	12	Liquids	12
Ethics	69	E-commerce	9	Impact	213
Communication	5	Market research	1	Sustainability	221
Training	414	Loyalty	30	Fluctuation	13
Motivation	64	Product portfolio	42	Absenteeism	1
Work organization	29	Price	19	Retirement	1
Performance evaluation	14	Promotion	11	Public relations	13
Recruitment and selection	8	**Human resources management**	**991**	**Innovation and technology**	**735**
Health and safety	30	Sales forecast	1	Big data	9
General	200	Segmentation	7	Information	270
Integration	**100**	**Commercialization**	**452**	Innovation	168
Integration	42	**Environmental management**	**727**	Competitive intelligence	66
Cooperative	4	Impact	28	Adoption	41
Work networks	22	Waste	90	Maintenance	24
Cluster	10	Water	57	Technology	157
Alliances	3	ISO 14000	3	**Environment**	**233**
Collaboration	19	Clean production	7	Community	74
Quality	**506**	Circular economy	4	Interest groups	86
Quality of service	45	General	538	Laws	2
ISO 9001	8	**Social responsability**	**43**	Competencies	69
TQM	281	**Projects**	**283**	Culture	1
Techniques	8	**Risks**	**236**	Climate	1

Note: Own elaboration.

The remaining articles were allocated among the various areas outlined in Table 2. It is evident that there is a disparity in the distribution based on the different administrative functions. The function that has received the most attention in research is the management of human resources, accounting for 15.6 % of the investigations. Within this area, the focus is primarily on topics such as training and ethical considerations. Following closely behind is the general administration function, which encompasses qualities such as system, strategy, and foresight, making up 15.2 % of the research. As anticipated, these areas have garnered the most interest, representing 17.5 % of the investigations.

Interestingly, the research conducted on innovation, information and technology management accounts for 11.6 % of the total. Similarly, it is worth noting that research on environmental management represents 11.4 %, while results-oriented research represents 10.1 %. Furthermore, it is noteworthy that investigations focusing on specific functions of business management receive less attention. Economy and finance management accounts for 8.3 %, quality management for 7.9 %, and commercial management and supply chain management for 7.1 %. In terms of representation, research on the environment constitutes 3.6 %, while integration actions between companies as a generic strategy are observed at a lower percentage of 1.5 %.

Table 3 provides an overview of publication trends over the years. In the year 2000, all publications prior to that year are included, while in 2005, publications from the period 2001-2005 are grouped together.

Table 3.

Performance of publications by year and variables

Variables/Year	00*	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	2020
General administration	45	39	16	13	10	8	22	28	35	29	33	54	52	76	90	88	118
Environmental management	11	18	3	6	11	10	6	11	14	18	22	32	27	37	38	51	95
Quality	23	8	2	3	3	2	4	8	6	10	10	12	15	14	22	25	33
External environment	6	7	5	4	3	5	8	9	5	8	8	7	26	33	24	28	51
Economy and finance	16	27	7	11	11	13	24	18	21	16	27	25	32	33	50	74	64
Supply chain	20	11	3	7	12	6	6	16	11	13	29	19	31	29	53	70	61
Human resources management	43	49	22	15	33	19	26	32	30	27	65	55	62	57	98	118	144
Innovation and technology	30	17	5	2	10	9	11	7	14	10	19	18	27	30	32	49	39
Internationa-lization	0	0	0	0	0	0	2	0	1	0	0	0	0	2	3	1	4
Integration	0	2	2	2	1	1	6	2	1	2	4	3	6	6	5	10	11
Marketing	10	12	4	5	6	12	11	8	9	16	26	18	12	32	53	51	45
Results	11	7	1	2	2	3	7	6	8	8	9	11	17	24	21	50	46
Others	18	16	11	8	12	11	12	7	19	16	16	23	32	20	43	58	50

Note: A continuous scale of colors is established based on performance, ranging from excellent performance (green) to poor performance (red).

Table 3 illustrates that each dimension examined has exhibited a varying degree of growth in terms of investigation. Although the timing and magnitude of this growth have differed, it is evident that all dimensions have experienced an upward trend. Notably,

the fundamental dimensions of administration, human resources management, and supply chain management have demonstrated early and substantial growth, while internationalization strategies have been delayed and inadequate in comparison.
Figure 2 illustrates the conduct of the examinations across various sectors and variables of the scrutinized administration. It is evident that there is a broad range of sectors being investigated.

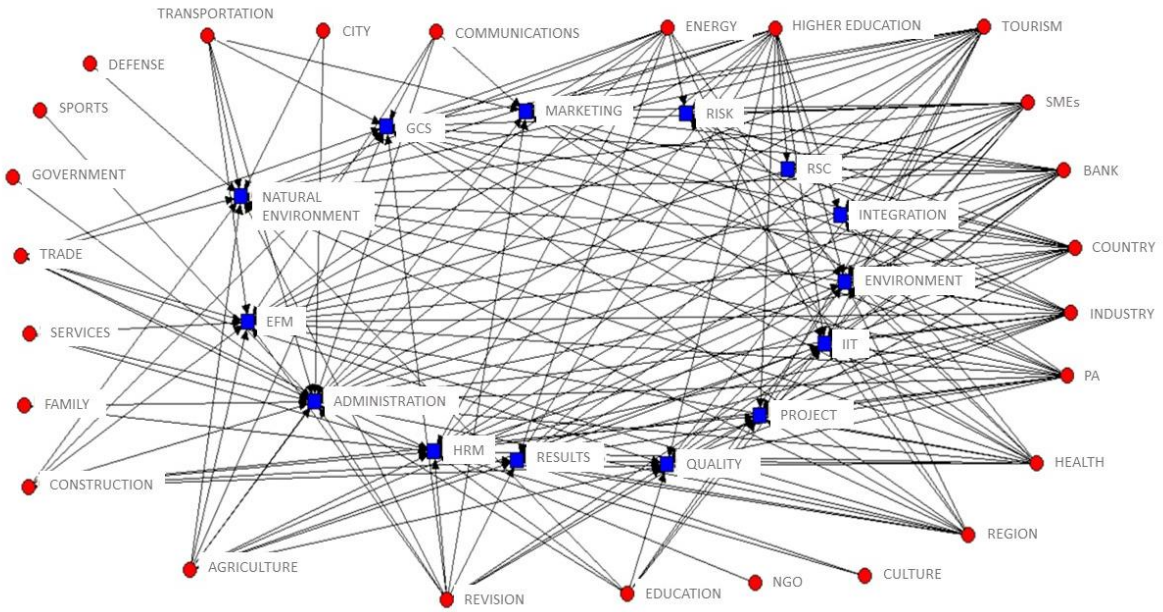

Figure 2. Behavior of investigations by sectors and functions

In the examination of various sectors, the research encompassed a total of 25 sectors. These sectors include broad or comparative studies conducted at the regional or national level, as well as studies focused on analyzing the unique characteristics of family businesses or small and medium-sized enterprises (SMEs), and bibliometric analysis on various topics.

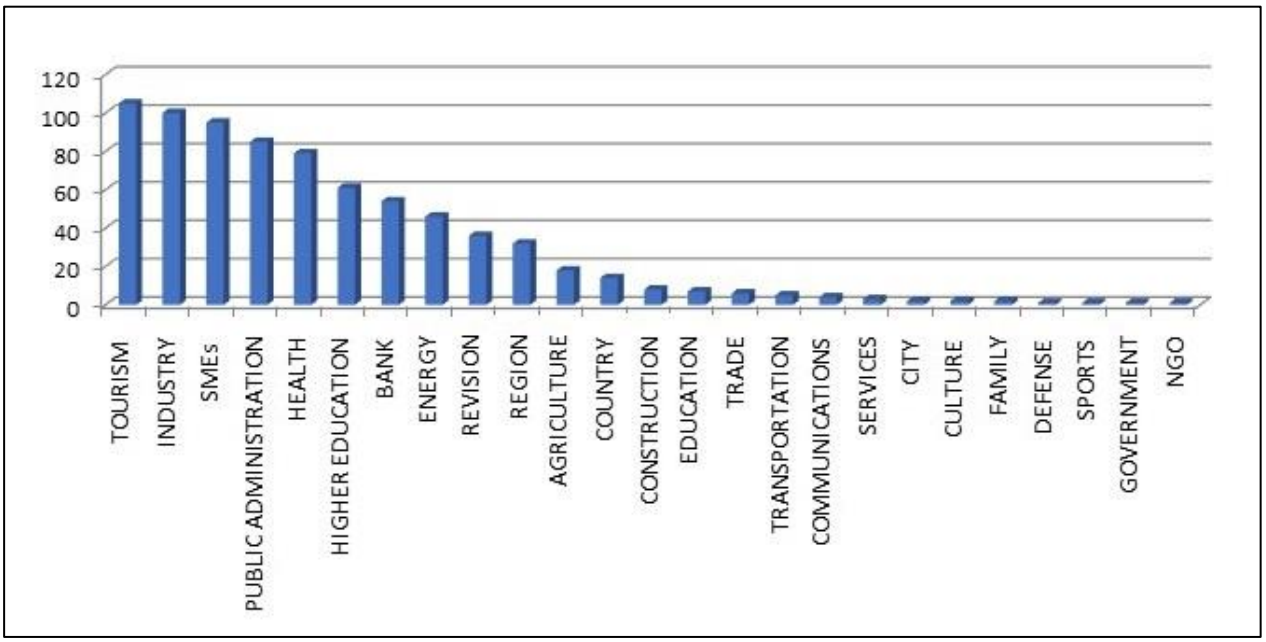

Figure 3. Representativeness of investigations in different sectors and functions of administration

Figure 3 illustrates the percentage of representation that each sector holds within the categories or functions of the administration being analyzed. Notably, key sectors such as Tourism, Industry, SMEs, Public administration, Health, Education, Financial organization, Bibliographic reviews, regional comparative analysis, agriculture, and country-level studies have been the subject of investigations pertaining to the different functions defined within the administration.

The distribution of research across countries is not consistent, as some countries have a significant number of publications (Figure 4). It is evident that the majority of research output is concentrated in a select few countries, although most countries do have at least one publication.

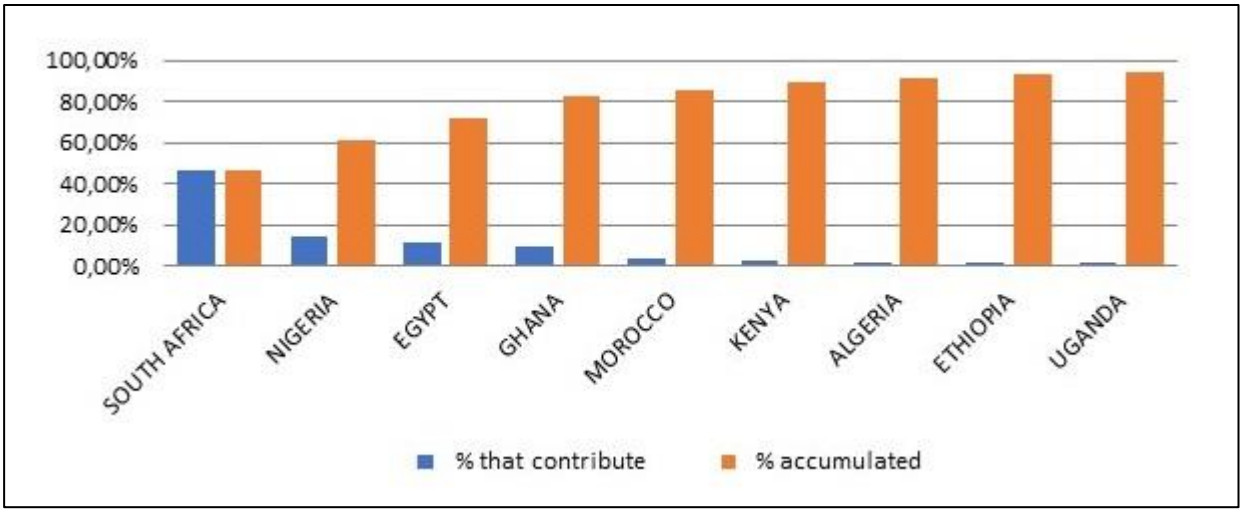

Figure 4. Number of publications analyzed by country

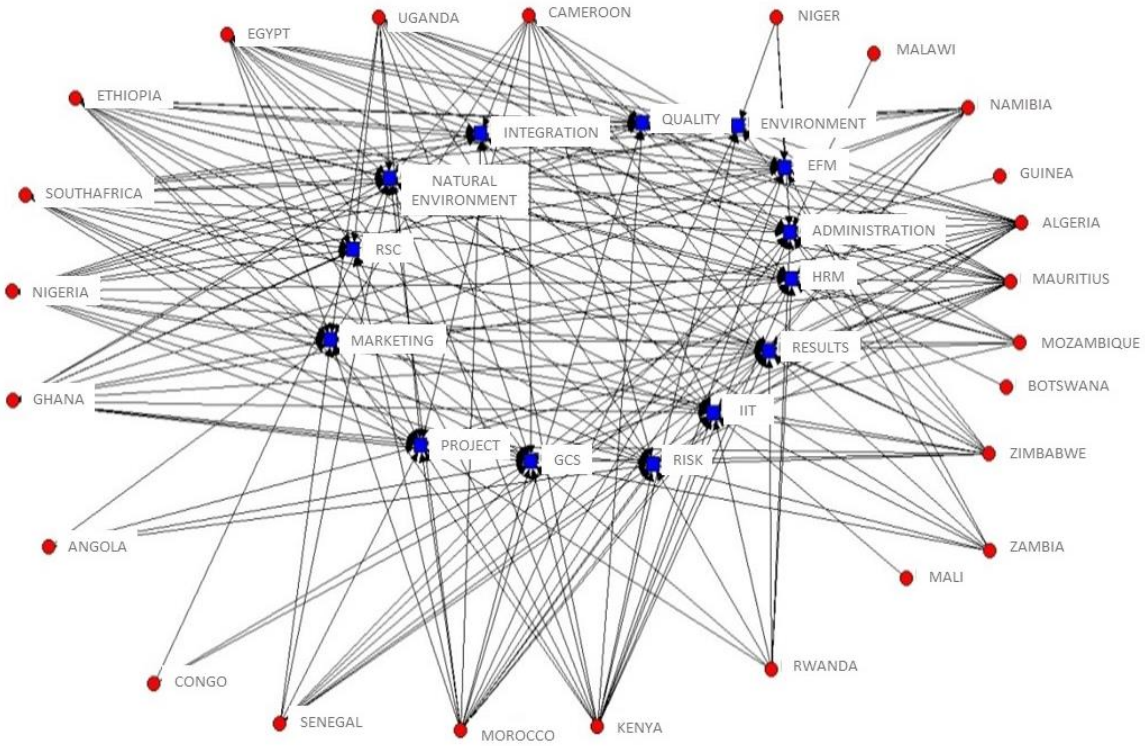

Figure 5. Relationship between the analysis of the functions by country

Figure 5 illustrates the level of analysis conducted on various functions across different countries. The data reveals that, in general, the majority of functions have at least one publication in countries like South Africa, Nigeria, Egypt, Ghana, Morocco, Kenya, Algeria, Ethiopia, and Uganda. However, in Mali, only one publication related to information, innovation, and technology is reported, while in Malawi, only one publication associated with administration in general is reported.

The distribution of sectors to be examined in the countries being studied exhibits a resemblance to the previous behavior. Figure 6 illustrates a significant variation between the countries under analysis and the sectors being investigated. It is worth mentioning that South Africa stands out as the only country where publications are reported across multiple sectors, including transportation, services, sports, culture, communications, and more.

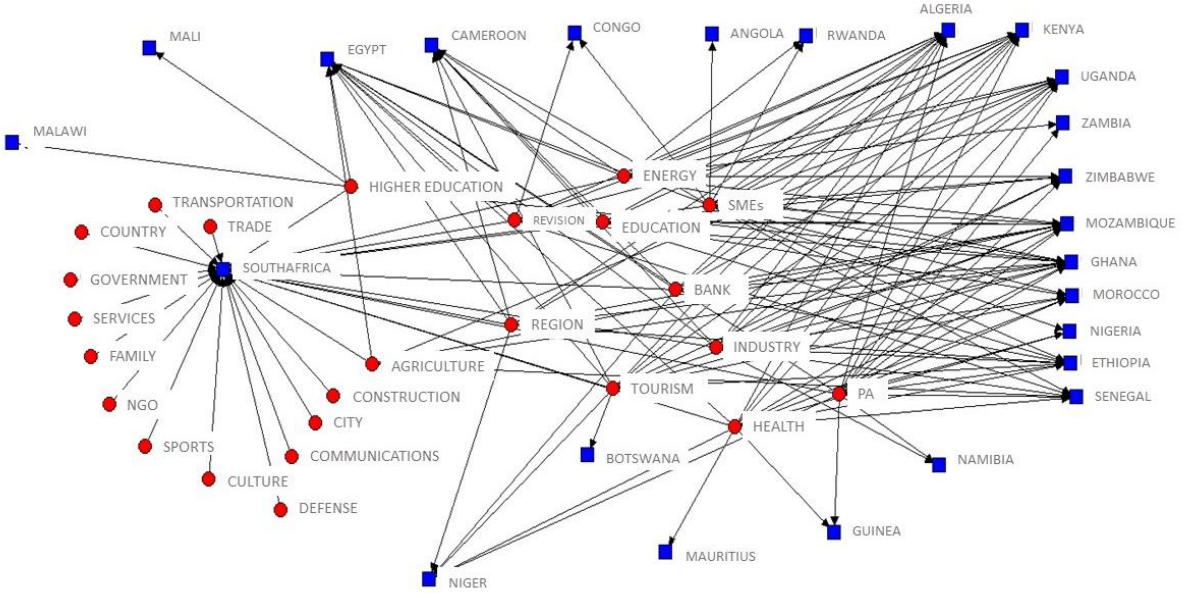

Figure 6. Relationship between sectors and countries where the investigations are carried out

Based on the findings presented in Figure 7, it is evident that South Africa stands out with the analysis of 25 distinct sectors or areas. In a separate category, we have Egypt, Ghana, Mozambique, Kenya, and Algeria, where the analysis encompasses 10 or more areas.

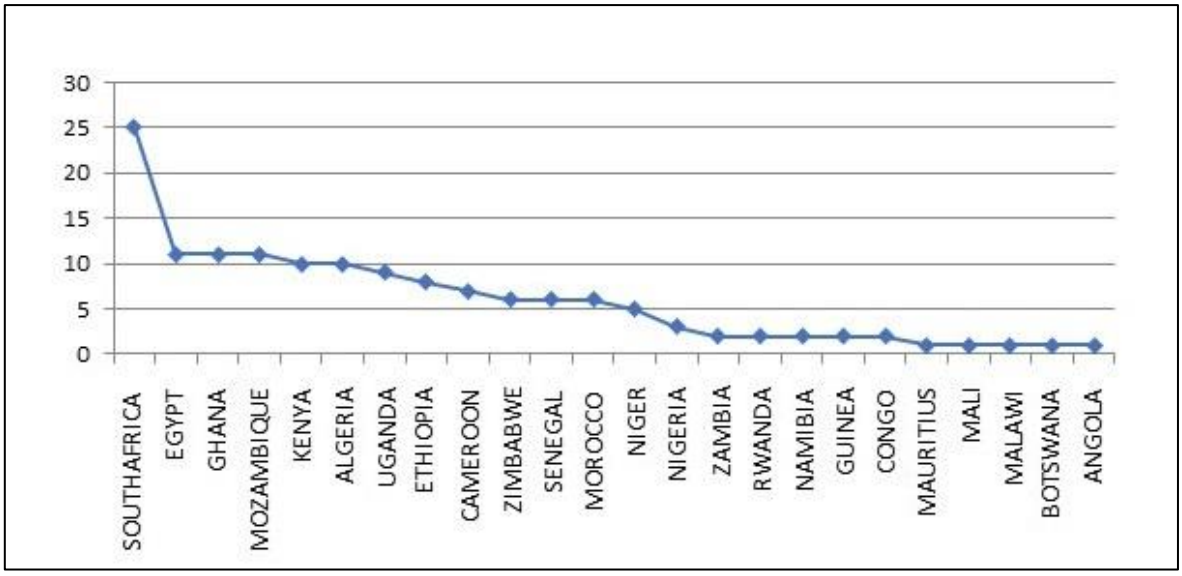

Figure 7. Percentages of sectors that are considered in the research by country

In figure 8, the results reveal a diverse approach towards various sectors across different countries. Sectors like tourism, industry, SMEs, public administration, and health have received significant attention in terms of investigation. Conversely, research on NGOs, sports, defense, culture, and other sectors appears to be less prominent.

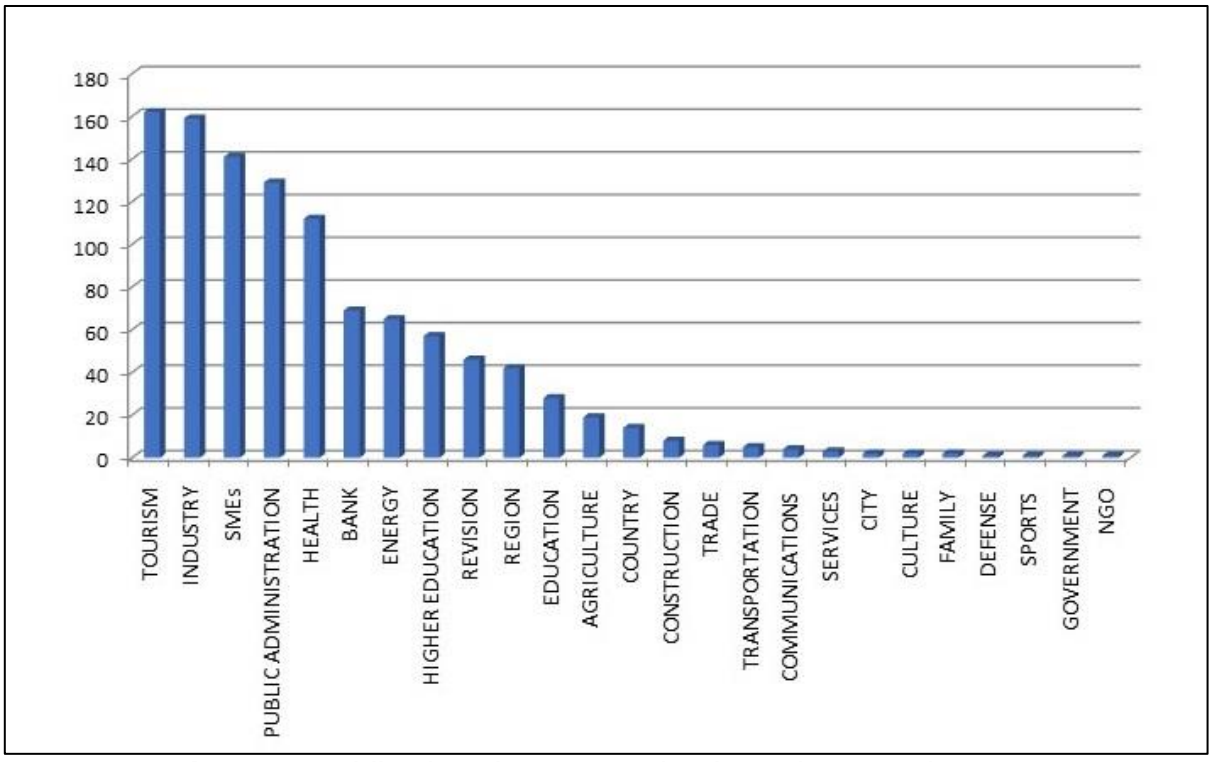

Figure 8. Publications by country that investigate each sector

It was deemed viable to assess the extent of research integration among the countries in the region as well as with countries outside the region. The diagram in figure 9 illustrates the connections identified among the countries within the region. It is evident that there are collaborative ties between the majority of countries, except for Ivory Coast, Guinea, Guinea Bissau, Malta, Mozambique, Algeria, and Mauritania. Within this

network, the countries with the highest centrality levels are South Africa, Kenya, Ethiopia, Ghana, and Egypt.

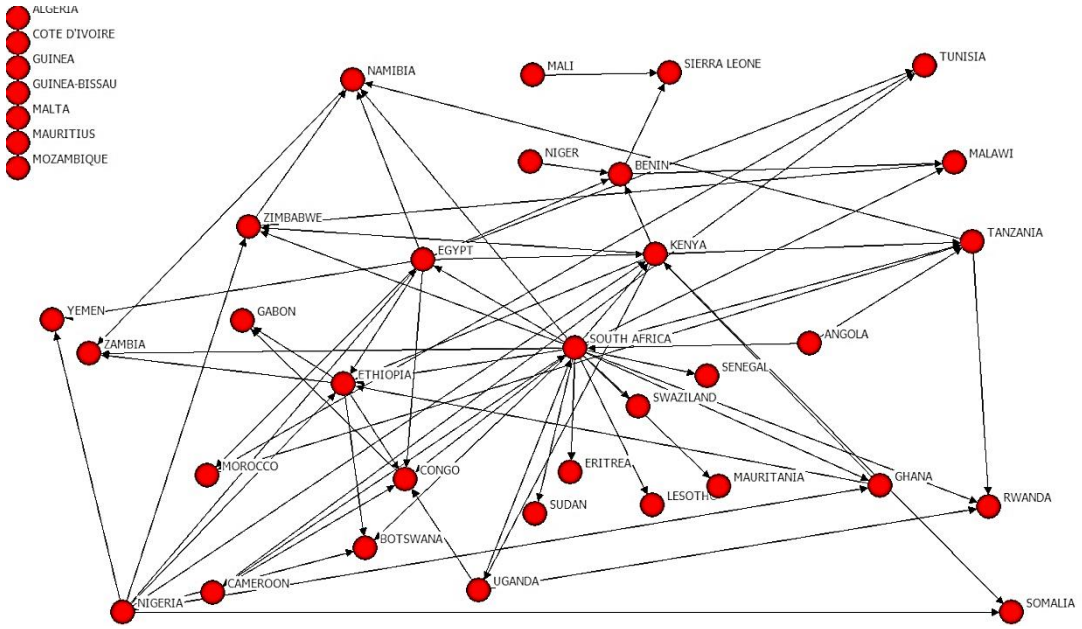

Figure 9. Collaboration link between the countries of the region

Figure 10 illustrates a significant level of collaboration between countries within the region and those outside of it. The collaboration links are diverse and encompass a total of 74 countries. However, it is worth noting that in 19 of these countries, the collaboration is limited to just two countries. Among the countries within the region, South Africa stands out for establishing links with over 71% of the countries, followed by Nigeria, Egypt, Ghana, Tunisia, Malta, and Morocco, which establish links with approximately 30% of countries outside the region. On the other hand, more than 60% of the countries have less than 10% of ties with other countries in the region. This should not be interpreted as a lack of ties, but rather as an indication that these relationships are concentrated in a few countries. Notably, the United Kingdom, the United States, Australia, Canada, the Netherlands, Saudi Arabia, and China account for more than 50% of the region's ties with countries outside of it. Figure 10 provides an overview of the contribution of these main external countries to the ties with the region.

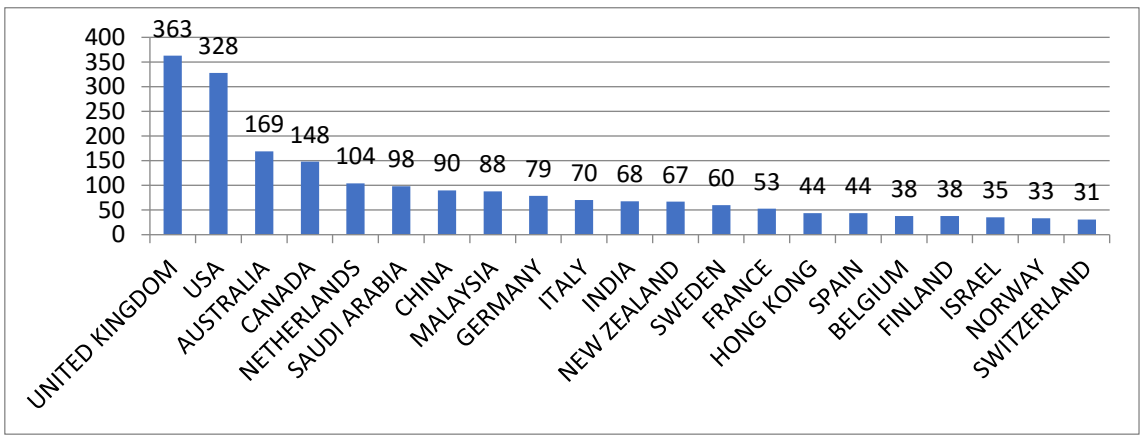

Figure 10. Countries with the highest level of collaboration links

Furthermore, an examination was conducted on various aspects pertaining to the most productive authors in the region and the platforms where their works are published. The analysis of these authors revealed that a total of 9,599 individuals contribute to the publications under scrutiny, although their productivity levels differ significantly. It is noteworthy that 92.55% of these authors do not exceed 2 publications. Figure 11 illustrates the patterns observed among the authors with the highest publication rates. Notably, Saayman M. stands out as the author with the largest number of documents, having a total of 184 publications. The earliest publication attributed to Saayman M. dates back to 2001 and is affiliated with the University of Northwest South Africa, primarily focusing on the field of tourism management. Similarly, only 5 authors possess an H index equal to or greater than 10. These authors include Brent AC (12), Abratt R (11), Bowen P (11), Von Solms R (10), and Saayman M (10).

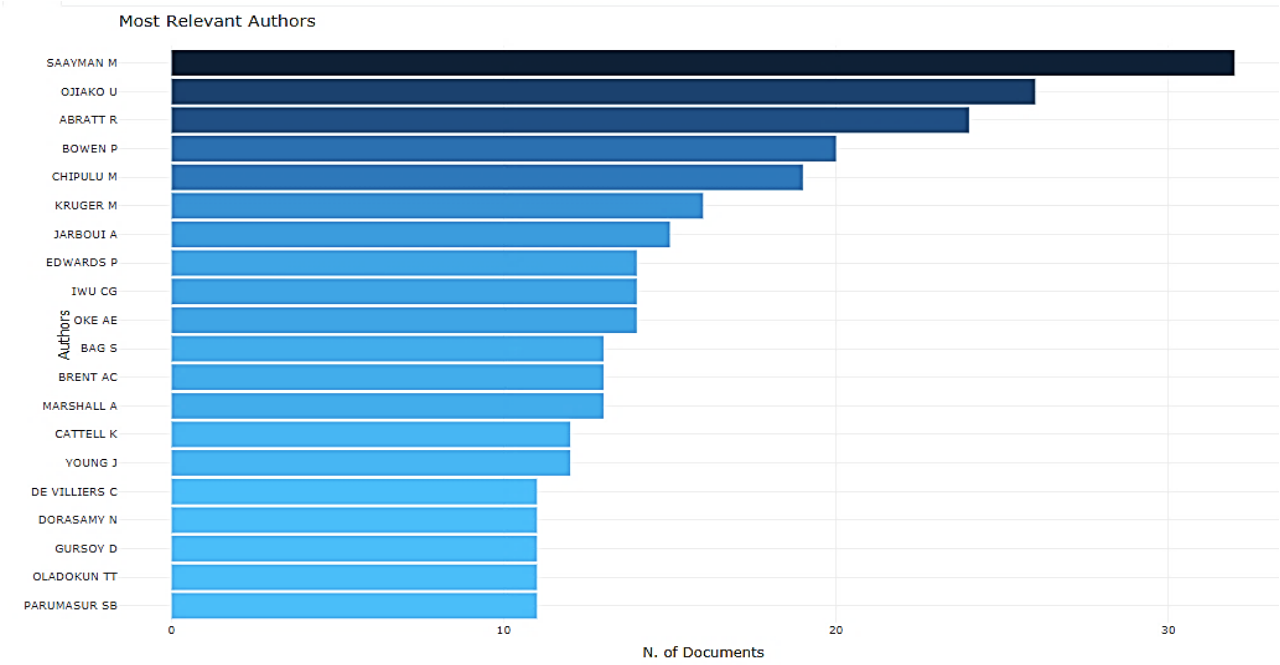

Figure 11. Behavior of publications by authors

In spite of the vast array of authors present, the outcome of examining the extent of collaboration among authors in the region is astonishing. The level of collaboration between authors in the region is nearly nonexistent. While there are authors who collaborate within small groups, they fail to coordinate their efforts with other pre-existing groups.

In terms of analyzing the journals in which these publications are produced, a total of 867 journals have been identified. These journals are distributed across quartiles, as illustrated in table 4. It is evident that there is a relatively equitable distribution, with a slight predominance in the upper quartiles.

Table 4. Distribution of the journals where it has been published by quartiles

	Quartiles				
	Q1	Q2	Q3	Q4	Not classified
Number of journals	257	217	181	78	135

Note: Own elaboration.

Figure 12 illustrates the countries to which the journals belong, specifically those with 10 or more publications reported. It is evident that there is a notable presence of both regional and international countries. The United Kingdom, the Netherlands, and the United States stand out as the dominant contributors, accounting for a combined total of 52.6%.

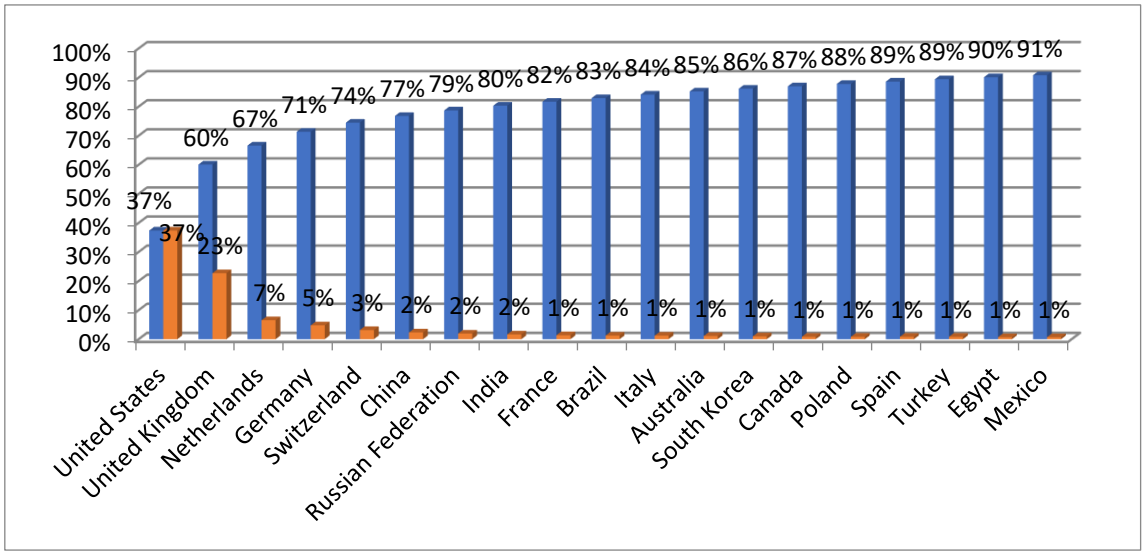

Figure 12. Representation by countries to which the journals where it is published belong

The same pattern can be observed in academic journals. Figure 13 illustrates the journals that have published 50 or more articles.

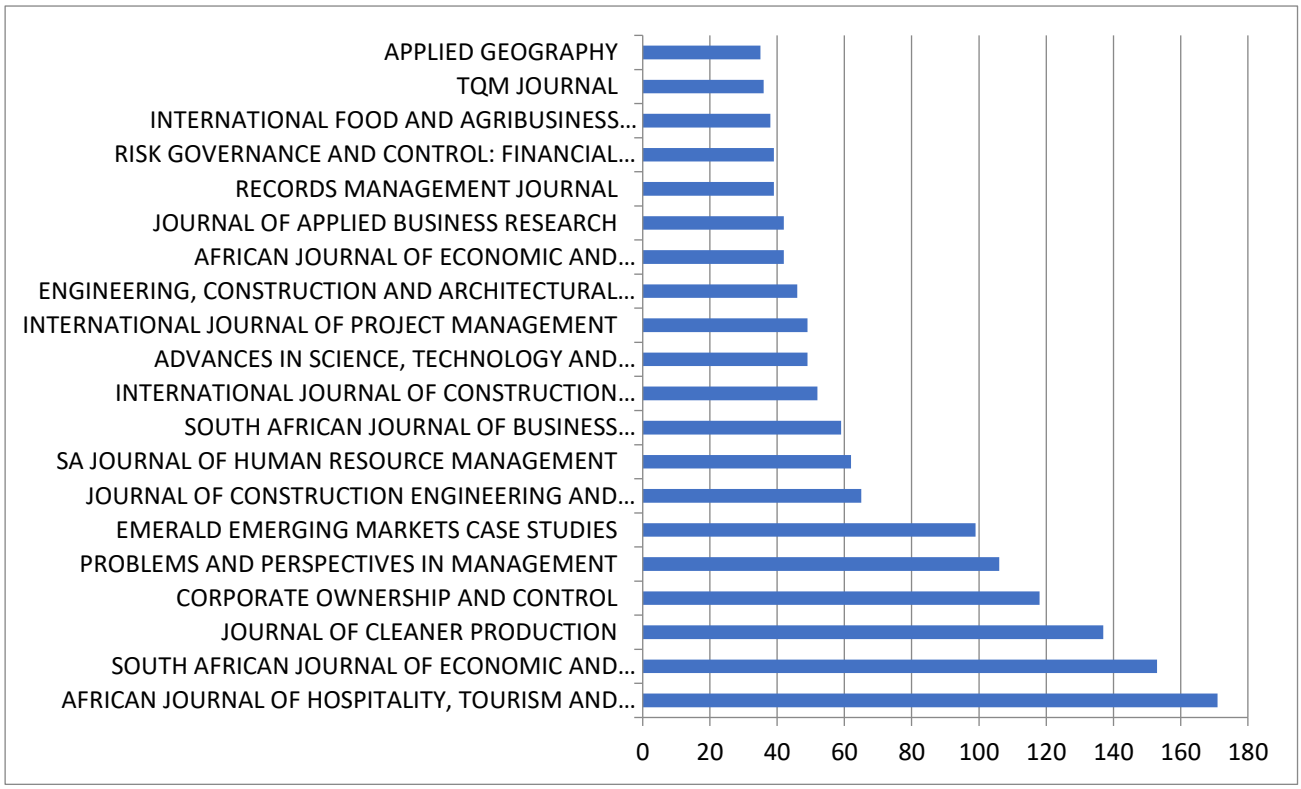

Figure 13. Number of publications in the journals with the highest number

Discussion

The lack of clarity or precision in the scope and boundaries of administrative sciences is indicated by the percentage of articles found that are not directly related to the field. It is unclear whether this is due to the search engine's classification algorithm, the choice of journals for publication, or the researchers themselves conducting the studies.

The interconnectedness of the topics investigated further supports the systemic approach presented by administrative sciences (Felix, 2003), as well as the potential manifestation of complexity theory (Oña-Sinchiguano, 2020). This demonstrates the diverse variables that are interrelated in these studies, as well as the dynamic nature of the changes that occur in the various environments where the research is conducted. The observed structure in the research validates both classical schools of administration and features characteristic of the socio-technical school, mathematics, and contingencies, among others. Additionally, there were investigations that analyzed one, several, or all functions of administration in general and the operations of business organizations in particular. These investigations aimed to achieve the main objectives outlined by Paucar-Caceres and Jerardino-Wiesenborn (2020).

The study topics varied and showed a tendency to increase in quantity and geographic coverage, although not necessarily at the same pace as in other regions. This trend is believed to be a result of the research stimulus that has been occurring in universities across the continent, which serve as the main hubs for research (Jordaan et al., 2013; Metwally & Nyathi, 2017; Ngulube & Ngulube, 2015).

The observation of a paradoxical situation arises from the coexistence of a strong level of integration between countries within the region or with external nations, juxtaposed with the lack of integration among researchers within the region. These researchers tend to base their studies on external references that are disconnected from their own national or regional context. Similarly, it is believed that the current number of journals available in the region for publishing research on administrative sciences remains inadequate.

Conclusions

The findings in a broad sense indicate that administrative sciences play a role in the epistemological advancement of the Region. The evolution of these sciences demonstrates a correlation with the theoretical and methodological principles that support the analysis of this field. Additionally, they highlight the presence of a diverse and extensive network of research collaboration in this domain, both at a regional and global scale. Similarly, it is evident that there is a need to enhance the collaborative ties among the most prominent researchers in the region, with the objective of fostering the establishment or development of a distinct school of thought that is tailored to address the specific needs and characteristics of the existing socio-economic context.

The research conducted acknowledges the managerial implications stemming from the intricate and systemic nature of administrative sciences, as well as the multitude of variables and interconnections that manifest within this realm. These observed outcomes can serve as a general framework for examining the specific management models implemented in particular environments by various entrepreneurs.

Limitations and future investigations

The present study acknowledges a significant limitation, which is the lack of a comparative framework to effectively assess the state of administrative sciences in the region. The authors suggest conducting similar investigations in other geographical

areas and utilizing the findings to conduct comparative analyses. It is important to note that regional behaviors may differ due to varying socioeconomic conditions.
To conduct comparative studies, it is recommended to utilize benchmark indicators such as Gross Domestic Product (GDP) by country, population size by country, number of research centers, and the presence of research budgets. However, caution should be exercised when using these indicators as their existence alone does not guarantee the development of a specific science. Other variables related to scientific potential and research problems in different environments should also be considered.
Furthermore, it is advisable to thoroughly analyze the pre-existing conditions under which the investigations were conducted. Some studies may not always address the region's specific problems or interests, but rather stem from the priorities of countries with developed economies or comparative studies between different sectors, countries, or regions. While these studies may contribute to scientific development, they may not always reflect the local problems or priorities of the region.

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