ECONÓMICAS CUC

García-Gómez et al. / Económicas CUC, vol. 46 no. 1, pp. e116041, January - June, 2025

ACREDITACIÓN INSTITUCIONAL DE ALTA CALIDAD

# Transaction Costs in the Health Sector: An Analysis from the Literature

# Costos de Transacción en el Sector Salud: Un Análisis desde la Literatura

DOI: https://doi.org/10.17981/econcuc.Econ.6041

Review Article

Receipt date: 02/10/2024
Return date: 02/19/2025
Acceptance date: 03/23/2025
Publication date: 01/04/2025

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To cite this article:
García-Gómez, D. S., Camacho-Mariño, C. A., & León-Forero, A. M. (2025). Transaction Costs in the Health Sector: An Analysis from the Literature. Económicas CUC, 46(1), e116041. https://doi.org/10.17981/econcuc.Econ.6041

JEL: I11, I12, M55, O57

*Abstract*

The theory of transaction costs, developed by Ronald Coase, addresses the expenses organizations incur when outsourcing services or engaging in market-based transactions. This study reviewed 158 scholarly publications from 18 countries to analyze how healthcare sector organizations understand and apply transaction cost theory within their organizational processes and structures through the lens of existing literature. The review identifies the principal categories and criteria associated with transaction costs and their influence on decision-making processes. A systematic search was carried out using databases such as Scielo, EBSCOhost, and OCÉANO Digital, in addition to Google Scholar, employing Boolean search equations. The studies were classified according to database source, document type, and language, resulting in the identification of four categories, two criteria, and eight subcategories. Following an in-depth literature analysis, the study highlights that organizations often modify their structures and processes, frequently adopting strategies such as vertical integration or outsourcing, as mechanisms to reduce transaction costs. Despite the widespread theoretical application of transaction cost economics, the findings reveal a notable scarcity of documented implementation within healthcare organizations. This evidences a gap in empirical research specific to the health sector. Furthermore, the study underscores the need to develop tailored tools to mitigate uncertainty in managerial decision-making, enabling a more effective and context-sensitive application of transaction cost theory in organizational practices.

*Keywords*: Transactional cost theory; transaction economics; outsourcing; health economics and organization; efficiency in the health sector.

*Resumen*

La teoría de los costos de transacción, desarrollada por Ronald Coase, aborda los gastos que enfrentan las organizaciones al subcontratar servicios o realizar transacciones en el mercado. Esta investigación revisó 158 publicaciones de 18 países para analizar, desde la literatura, cómo las organizaciones del sector salud comprenden y aplican la teoría de los costos de transacción en sus procesos y estructuras organizacionales. Se identifica las principales categorías y criterios asociados a los costos de transacción y su impacto en la toma de decisiones. Se realizó una búsqueda en bases de datos como Scielo, EBSCOhost y OCÉANO Digital, además de Google Académico, utilizando ecuaciones de búsqueda con términos booleanos. Los estudios fueron clasificados según su base de datos, tipo de documento e idioma, identificando 4 categorías, 2 criterios y 8 subcategorías. Después de analizar la bibliografía, se identificaron las principales categorías y criterios relacionados con la teoría de costos de transacción. Se observó que las organizaciones ajustan sus procesos y estructuras, adoptando con frecuencia estrategias como la integración vertical o el outsourcing para reducir estos costos. No obstante, se evidencia la casi nula demostración de estos procesos por parte de las organizaciones del sector salud. Aunque la teoría es ampliamente aplicada, existe una carencia de estudios que analicen su implementación en el sector salud. Además, se destaca la importancia de desarrollar herramientas específicas que permitan disminuir la incertidumbre en la toma de decisiones, facilitando así una mejor aplicación de esta teoría en los procesos organizacionales.

Palabras clave: Teoría de costos transaccionales; economía de la transacción; subcontratación; economía y organización de la salud; eficiencia en el sector salud.

## INTRODUCTION

Companies have recognized the importance of implementing new strategies to improve production processes, which are fundamental to their raison d'être. A clear example of these strategies is the transaction cost theory proposed by Ronald Coase, first presented in 1937, which mentions the costs associated with carrying out a transaction (Coase, 1937). Over the years, this theory has evolved, as pointed out by Allen (2006), who emphasizes that it has matured both in its empirical implementation and in acquiring new knowledge that complements and enriches it, which can change its nature, influenced by the experiences of organizations.

This theoretical approach, coupled with the immersion of technologies, social networks, and changes in organizational processes, has transformed companies in various sectors, such as teleworking, independent companies, and multinationals. Although the systematization of organizations has advanced, many are not fully prepared to implement these methodological changes. Outsourcing services has become a key strategy in this context, forcing organizations to consider the additional costs of transactions. (Chavas & Mechemache, 2006)

In exploring the economic sectors where transaction cost theory can be implemented, it is important to highlight the scarce documentation on its application in the health sector. The publications reviewed show a lack of attention to recording and analyzing how health sector organizations implement this theory. As Adler (1998, cited by Lavarello, 2004) mentioned, organizations face a "war" when deciding between performing internally or purchasing certain services, a central dilemma in transaction cost theory.

Although transaction cost theory is widely applied in various organizations, it has received little attention regarding its implementation methods. This has resulted in a lack of evidence on how this theory is measured in its various stages (pre-, during, and post-implementation). This situation highlights the need to investigate whether there are matrices or tools to measure and evaluate these organizational costs. (Fernández-Flórez, 1994)

In the health sector, managerial uncertainty in decision making and the high flow of transactions related to this theory highlight the scarce documentation and valuation of information on transaction costs. Moreover, this information is not projected as a valuable tool for creating managerial instruments that minimize the impacts of transactional decisions (Gorbaneff et al., 2011). Therefore, it is essential to review the existing literature on transaction costs and their relevance in organizational, economic, and social processes. (Herranz-Martín, 2020)

In the present study, the analysis is not limited to a single productive sector, but compares various sectors, paying special attention to the health sector (Whitby, 1994). The methodology was based on a detailed review of the literature, classified in a database, to analyze the publications found. The categories and subcategories identified allow describing the contents related to the definition and application of the transaction cost theory, in order to analyze, from the literature, how health sector organizations understand and apply the transaction cost theory in their organizational processes and structures (Quintero Salgado & Garzón, 2021).

Finally, this paper analyzes the literature reviewed, including a contextualization of the transaction cost theory and its evolution in organizational analysis, focusing primarily on the health sector. This is followed by a description of the methodology used in the review, the results obtained, and the analysis of the main findings. Then, the categories are discussed, emphasizing the health field and pointing out the gaps and challenges when implementing this theory. We close with some recommendations for future research on this topic.

## LITERATURE REVIEW

Ronald Coase formulated the transaction cost theory (TCT) in 1937, which Williamson O. E further developed in 1996. This theory focuses on analyzing and minimizing the costs associated with negotiation, contracting, and compliance processes between economic parties. It has evolved from a basic theoretical framework to its practical implementation in various productive sectors and critical analysis in organizational contexts.

Between 1990 and 2022, TCT was progressively adopted by organizations seeking to optimize their internal processes and reduce the uncertainty inherent in business transactions. Geyskens et al. (2006) emphasize that although organizations initially adopted theoretical models, they adapted the theory to their specific contexts over time, making identifying risks and developing mitigation strategies possible.

Other studies, such as Standifird & Weinstein (2007), highlight that TCT is not limited to a single sector, but can be applied transversally in various industries. They identify three types of transaction costs: search, negotiation, and monitoring costs, which serve as a basis for organizations to implement the theory efficiently. However, a key challenge in the application of TCT is managerial uncertainty. Joshi & Stump (1999) point out that, despite advances in theoretical understanding, decision making still presents risks when the costs associated with each transaction are not fully understood. Therefore, it is necessary to create risk measurement and assessment tools to mitigate this uncertainty.

Marín-Idárraga (2012) points out that many organizations implement TCT implicitly, without recording or analyzing the results of its application in financial and operational terms. Companies must adopt a more systematic and explicit approach when applying the theory to address this challenge. It is recommended that organizations develop standardized models for their implementation, especially in sectors such as healthcare, where their application could optimize outsourcing and improve management decision-making. It would also benefit organizations to share their experiences in implementing TCT, allowing the development of a more accurate measurement tool to reduce uncertainty and improve decision-making. (Roberts & Greenwood, 1997; Davidson & Martin, 1995)

## METHODOLOGY

For this study, a literature review was conducted involving an in-depth analysis of selected articles organized in a document review matrix. This matrix was built using a measurement-based methodology and included the following elements: 1. Article title, 2. Year of publication, 3. Country, 4. Language, 5. Document type, 6. Authors, 7. Journal name, 8. Abstract, 9. Highlights/insights, 10. Relevant figures or tables, 11. Key ideas from the review, 12. Notable authors for analysis, and 13. References

### *Eligibility criteria*

In the literature review, a search strategy was implemented in databases such as Scielo, EBSCOhost, OCÉANO Digital and meta search engines such as Google Scholar, implementing the use of Boolean terms such as "AND" and "OR" for the construction of the search equations; a summary of the main bibliographic characteristics used in the literature search is described as a summary. (See Figure 1)

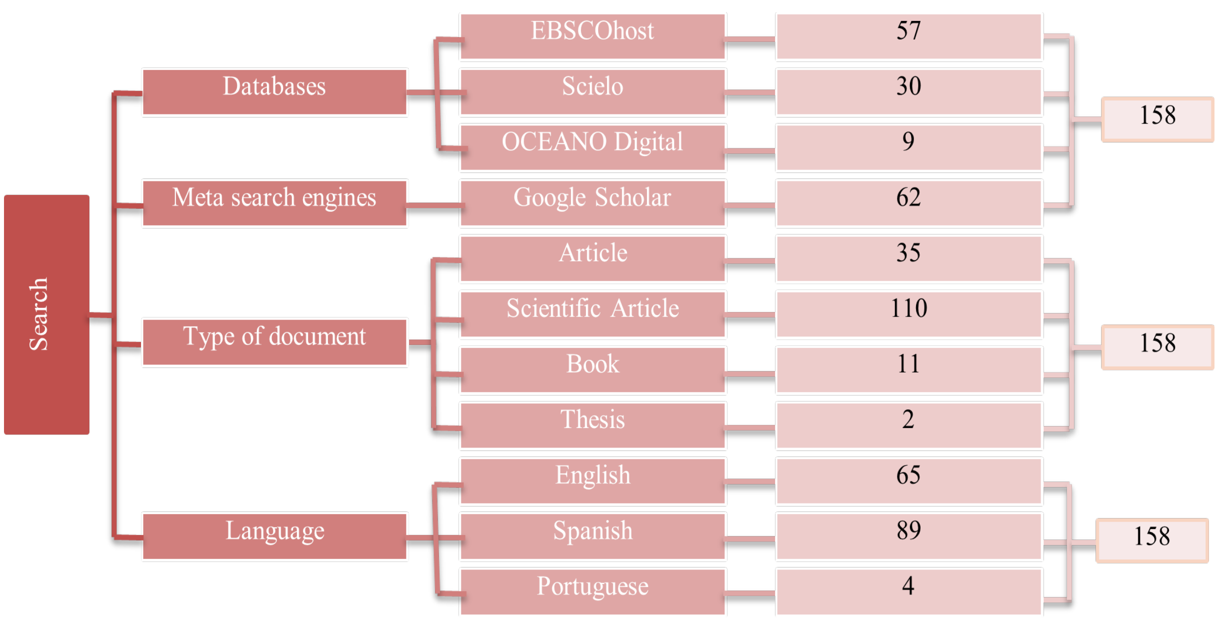



Figure 1. Search strategy
Source: Authors' construction

### *Search equations*

Table 1 shows the keyword combinations you used to search for articles in academic databases. These combinations are known as search equations and are constructed using key terms linked by Boolean connectors such as AND (and), OR (or), to broaden or narrow the results.

Table 1.

*Search equations used in the literature review*

| Nº | Search Equation | Key Term Combination |
|---|---|---|
| 1 | Transaction cost theory OR transaction costs AND health sector OR healthcare AND efficiency OR organizational performance | Theory + health + efficiency/ organizational performance |
| 2 | Economics of transaction OR transaction cost economics AND health systems OR health organizations | Transaction economics + health systems/organizations |
| 3 | Outsourcing AND transaction costs AND healthcare services OR health sector | Outsourcing + transaction costs + health services |

Source: Authors' elaboration

## *Inclusion and exclusion criteria*

Table 2 clearly organizes the inclusion and exclusion criteria defined to carry out the research.

Table 2.

*Inclusion and exclusion criteria*

| Categoría | Criterios |
|---|---|
| Inclusion Criteria | Publications from the last 33 years on transaction costs.<br>Publications in English and Spanish, with international context.<br>Studies with the theoretical description of the transaction cost theory.<br>Studies describing theory implementation processes. |
| Exclusion Criteria | Publications without open access or difficult to view.<br>Publications in languages other than English and Spanish.<br>Publications that deal with outsourcing but do not apply the theory.<br>Publications outside of databases or meta search engines.<br>Studies containing only one of the key search terms. |

Source: Authors' elaboration

Using georeferencing, Table 3 describes the classification of the documents studied, considering the following criteria: a) Year of publication, b) Language, c) Country. A total of 158 articles or publications were analyzed as a result of the search.

Table 3.

*Classification of documents studied by year of publication, country, and language.*

| Year of publication | Language | Country | Total documents |
|---|---|---|---|
| 1990 | English | England | 1 |
| 1991 | English | USA | 1 |
| 1992 | -- | -- | - |
| 1993 | -- | -- | - |
| 1994 | Spanish | Spain | 1 |
| 1995 | English | England | 3 |
| | | USA | 9 |

| | | | |
|---|---|---|---|
| | | England | 2 |
| 1996 | English | USA | 1 |
| | | Switzerland | 1 |
| 1997 | English | USA | 5 |
| 1998 | English | USA | 3 |
| | | England | 1 |
| 1999 | English | USA | 3 |
| | | Canada | 1 |
| 2000 | Spanish | Colombia | 1 |
| | | Chile | 1 |
| 2001 | Spanish | Colombia | 3 |
| | | Peru | 1 |
| 2002 | Spanish | Colombia | 2 |
| | | Spain | 1 |
| | Portuguese | Brazil | 1 |
| 2003 | Spanish | Colombia | 1 |
| | | Spain | 2 |
| | | Argentina | 1 |
| | Portuguese | Brazil | 1 |
| 2004 | Spanish | Colombia | 5 |
| | | Chile | 2 |
| 2005 | English | England | 1 |
| | | USA | 1 |
| 2006 | English | England | 2 |
| | | USA | 5 |
| | | Canada | 1 |
| | | France | 1 |
| | | Indonesia | 1 |
| 2007 | English | USA | 5 |
| | | Canada | 1 |
| 2008 | English | Denmark | 1 |
| | | USA | 3 |
| 2009 | English | England | 2 |
| | | USA | 1 |
| | | Poland | 1 |
| 2010 | Spanish | Colombia | 6 |
| | | Mexico | 2 |
| 2011 | Spanish | Colombia | 8 |
| | | Mexico | 1 |
| | Portuguese | Brazil | 2 |
| 2012 | Spanish | Colombia | 2 |
| | | Costa Rica | 1 |
| | | Mexico | 1 |
| 2013 | Spanish | Colombia | 4 |
| | | Spain | 1 |
| | English | USA | 1 |
| 2014 | Spanish | Colombia | 4 |
| | | Mexico | 1 |
| | | Argentina | 4 |

| | | | |
|---|---|---|---|
| 2015 | English | England | 1 |
| | | USA | 2 |
| 2016 | English | USA | 1 |
| 2017 | English | USA | 1 |
| 2018 | English | France | 1 |
| 2019 | English | USA | 1 |
| 2020 | Spanish | Chile | 1 |
| | | Colombia | 8 |
| | | Costa Rica | 1 |
| | | Cuba | 1 |
| | | Ecuador | 2 |
| | | Spain | 3 |
| | | Mexico | 1 |
| 2021 | | | |
| 2022 | Spanish | Chile | 1 |
| | | Colombia | 15 |
| Total de documentos | | | 158 |

Source: Authors' elaboration

The detailed description of the countries in which the literature on transaction cost theory was found is important since this information was used to analyze the publications, know the scope of the literature review, and thus understand how globalized the review was, and give more support to the analysis performed. (See Figure 2)


Figure 2. Description by country
Source: Authors' elaboration

In order to create the matrix, each of the articles that met the inclusion criteria for this literature review were analyzed, which made it possible to separate the publications into categories as shown in Figure 3, and thus to identify in the articles or publications that transaction costs are a theory which, despite being implemented quite frequently, has not been adequately monitored due to lack of interest in collecting the information it can provide.

This is why there are no measurement tools or criteria for the creation of logarithms that allow managers or organizations to know when to implement this theory and safely generate benefits to the entity and not as it is currently done, where after analyzing costs, the decision is made according to what is most convenient for the organization, assuming the risk that outsourced personnel do not adhere to the entity and this leads to complications or the presence of bad processes within the organization. (Barrientos-Zamorano, 2012)

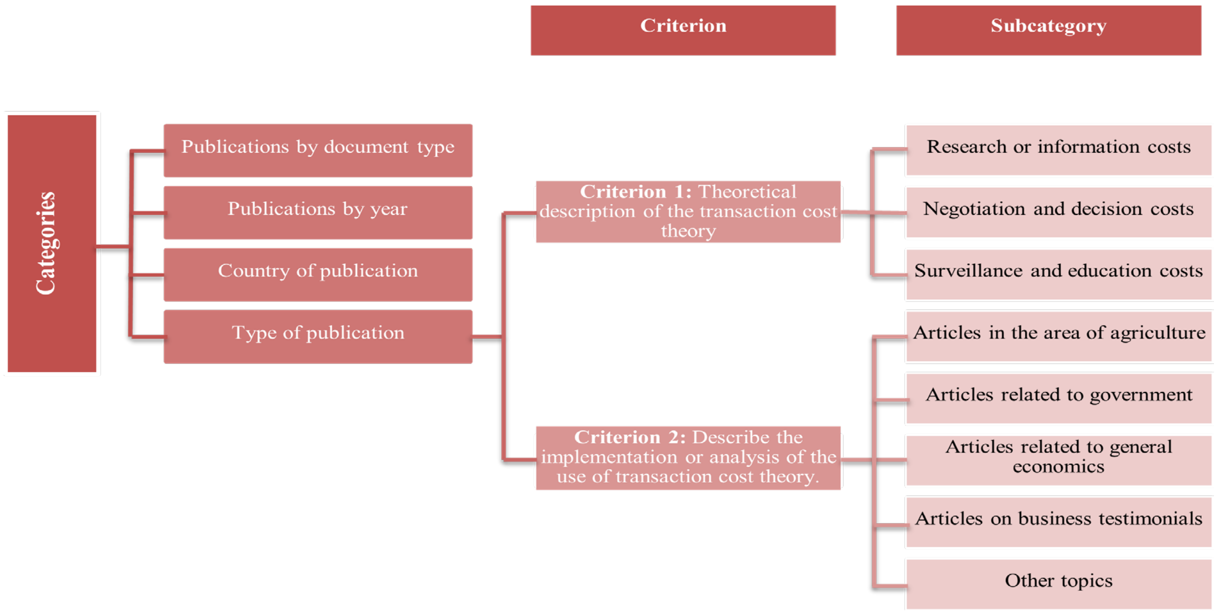


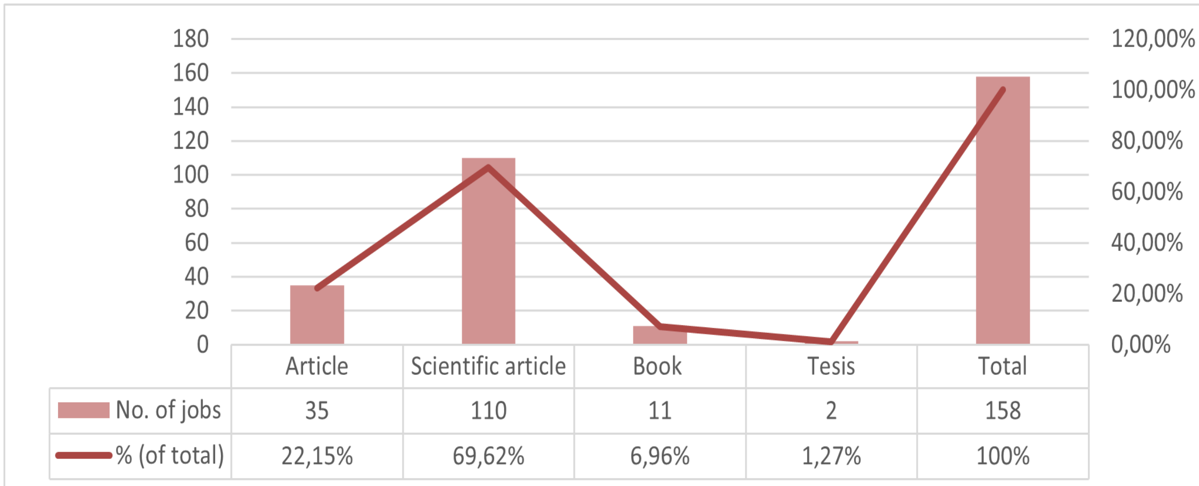

Figure 3. Categories and subcategories
Source: Authors' elaboration

## RESULTS

Initially, the 158 articles that emerged as a result of the search were evaluated under criteria such as the type of document, the year of publication, the country where it was published and the type of study (Theoretical description of the transaction cost theory and implementation experiences and analysis of use), as shown in Table 4. (Silva-Bustamante, 2021)

### *Publications by document type*

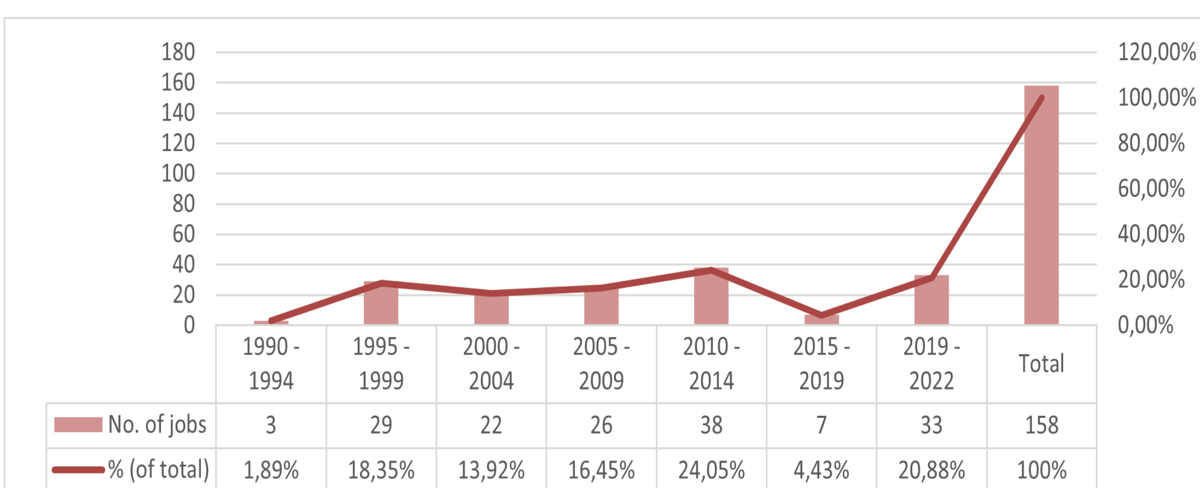
As shown in Graph 1, most of the documents used for the literature review come from academic journals and scientific articles published on platforms of high bibliographic reliability. Together, these represent 91.77% of the total publications analyzed (110 scientific articles and 35 articles). The remaining 8.23% corresponds to other documents, such as book excerpts (11) and theses (2). Within this group, the work Transaction Cost Economics by Williamson (1998), considered one of the founders of this theory, stands out. His contribution is key, since he was one of the first to describe and analyze this business strategy, and is taken as a central theoretical reference in this literature review. (Silva-Bustamante, 2021)




Graph 1. Description by document type
Source: Authors' elaboration

## *Publications by year*

At the time of the literature review, the point of origin of the theory was considered from the first publications of its principal authors or the precursors of the models analyzed. Thus, the search for information started from 1990 to 2022 (see Graph 2). Once the data were recorded, it was identified that between 1990 and 1994 the foundations of the theory began to be formally implemented and recognized, with a total of 3 publications (1.89%). These works laid the groundwork for explaining how, implicitly, organizations were already applying the principles of this theory, which made it possible to reference its implementation theoretically. In addition, it was shown how companies, by using it, initiated processes of adopting new organizational strategies oriented to cost-efficient models, as pointed out by Arámbula & Gómez Álvarez (1993) and Ernst (2010).




Graph 2. Description by year
Source: Authors' elaboration

On the other hand, the analysis also showed that the period with the most publications on this topic was between 2010 and 2014. In this interval, beyond describing the theoretical foundations, the articles focused on documenting concrete organizational experiences. Specifically, studies on how companies implemented the theory in various economic sectors were highlighted, evaluating the associated transaction costs. This is evidenced by the work of Needham & Kam (2004), as well as that of González-Campo (2010), who analyzed these processes from an applied perspective and contextualized them in fundamental business dynamics. (See Figure 2)

*Country of publication*

Based on the information of most of the documents analyzed in this literature review, it is necessary to know the countries of origin of the different publications, since with this information it was possible to analyze and see how globalized this literature review was, allowing to understand if at the time of this review it could be delimited to a particular specific geographic location or if it could be described in a national, international, continental or globalized context, thus obtaining the data shown in Figure 2.

After the classification of the documents implemented in the literature review, it is inferred that although the number of articles per country is not a significant or standard figure for all selected countries, it is possible to refer to the fact that this analysis is global, allowing to understand the general perspective of the process carried out when implementing the economic theory of transaction costs in different organizations worldwide. (González & Tanco-Cruz, 2019).

*Type of approach in the publication.*

Another characteristic taken into account at the time of the analysis was the type of approach used in each article to evaluate what type of content this literature review was going to focus on and what aids could be used for the classification.

Criterion 1: Provides a theoretical description of transaction cost theory.

Criterion 2: Describes the implementation or analysis of transaction cost theory.

By selecting these two criteria, it was sought that the classification of the articles would be detailed and that the information could be consolidated clearly. Therefore, in Criterion 1, the articles that contribute to the theoretical factor of the theory were detected, and in this way it was possible to understand aspects such as why it was created, how it was created, what it consists of, and in Criterion 2, it is hoped to analyze how the transaction cost theory is implemented in companies and how it is framed in their organizational structures. (Pérez Sáinz & Cordero, 1994)

Figure 4 was created to expose the selection strategy to classify the publications and thus describe the bibliographic information used in this literature review. Once implemented, it was possible to make such a classification and describe each criterion in detail. However, the previous graphs describe 158 publications, it was necessary to discard two at the time of analyzing the results since they did not make a substantial contribution to this part of the analysis, leading to the use of 156 publications of which 71 articles belong to Criterion 1 analyzing the transaction cost theory and its development from the theoretical factor and 85 publications focused on the implementation or analysis of the use of the transaction cost theory directly in organizations. (Ponce & Dueñas, 2010)

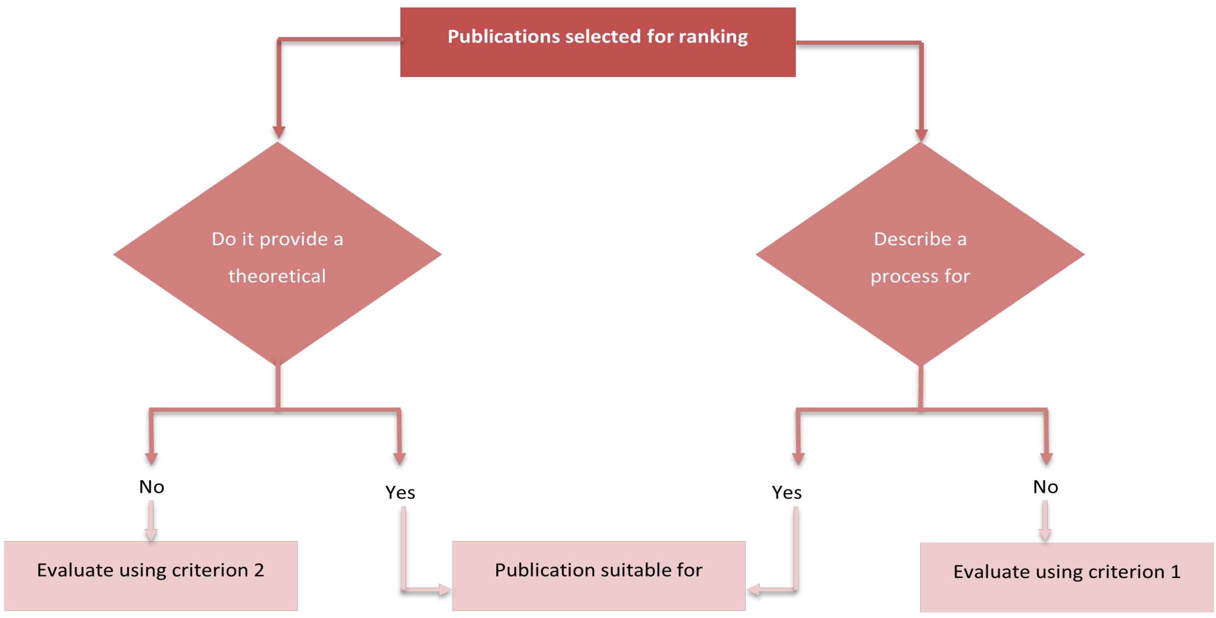



Figure 4. Document analysis flowchart
Source: Authors' elaboration

## *Detailed description of the criterion*

Criterion 1.

In order to describe the theoretical underpinning of the transaction cost theory and the development expected from it when it is put into practice; taking as a starting point the contributions and perspectives presented by the different authors, 71 publications were studied, which allowed contextualizing this theory and understanding the direction in which it is intended to take the organizations that put it into practice. (See Table 4)

Table 4.

*Topics addressed in the 71 publications on transaction cost theory*

| Thematic category | Description | Primary source or featured authors |
|---|---|---|
| Theoretical underpinnings of transaction cost theory | Analysis of definitions, foundations, and conceptual evolution of the theory. | Dahlman (1997), Cordobés-Madueño & Solde-García (2015) |
| Concept of transaction | Transfer of resources or services to meet organizational or individual needs. | Basic Text |
| Subcontracting | Strategy to reduce operational burden and restructure the organization. | Poppo & Zenger (1995) |

| | | |
|---|---|---|
| Risks of subcontracting | Low adherence of outsourced personnel, communication, and organizational image problems. | Foreman & Money (1995) |
| Research or information costs | Resources for supplier search, market research, and quality/price ratio. | Cordobés-Madueño & Solde-García (2015), Dahlman (1997) |
| Negotiation and decision costs | Expenses associated with contracts, procedures, and audits of contractual compliance. | Brown & Potoski (2005), Dahlman (1997) |
| Execution and monitoring costs | Supervision of contractual compliance and quality control in the execution of subcontracted services. | Dahlman (1997) |
| Need for monitoring and implementation of the TCT. | Lack of a systematic record of how this theory is applied and evaluated in Basic text organizational practice. | Basic Text |

Source: Authors' elaboration

The theory of transaction costs aims to identify those characteristics or dimensions of transactions or exchanges that take place either outside or inside an organization, since this type of movement will always be reflected in a win or lose, so when analyzing these publications it was necessary to describe what is meant by transaction, which is explained as the transfer of a service or a resource that can be provided in order to assist or meet a need of the organization or the employee who may require the service.

Another way of perceiving TCT is through outsourcing. Currently, the fact of having the most significant number of employees assigned to a specific objective can change the focus of the organization's management by having to supervise a larger number of processes, which are classified as critical factors within the organization, which is why creating a commercial relationship can minimize the management burden by modifying the organizational structure and thus allowing the focus of intervention to meet the main objectives of the organization. (Poppo & Zenger, 1995)

Outsourcing services is a factor that has cons at a strategic level since it is not possible to measure the level of adherence of outsourced personnel to the organization, since by not perceiving a direct relationship with the company, these personnel may not show commitment to the work they perform or the company may not communicate a message of inclusion with these personnel, and transmit an erroneous message about the organization to the collaborators. (Foreman & Money, 1995)

Transaction costs are a theory which little is known about how to put it into practice due to the low level of registration that organizations have at the time of applying this theory and follow up, which is why when conducting this literature review and specifically in this criterion it was decided to take the classification proposed by Dahlman (1997) to understand the types of transaction costs and thus understand promptly steps to implement this theory 1. Research and information costs, 2. Negotiation and decision costs, 3. Execution and monitoring costs, this classification allows for the idealization of a protocol for creating an evaluation model of the method used to implement the Transaction Costs theory, thus decreasing management uncertainty. (Dahlman, 1997)

*Research or information costs*

They are also known as search costs since it is at this time where organizations must invest resources in seeing which organizations in their ecosystem are those that can provide support and meet the need they have, for the development of this many variables are analyzed as the quality/price ratio at this time what is known as market research is performed, and doing this requires a cost because it must allocate resources of time, personnel, money and information to achieve research in the market and find the best offer for the organization. (Cordobés-Madueño & Solde-García, 2015).

*Negotiation and decision costs*

These are the costs that must be incurred in order to reach an agreement, such as the value of the contract procedures as well as the costs of auditing the processes carried out in comparison with those agreed in the contract; it can also be called contracting cost (Brown & Potoski, 2005).

*Surveillance and education costs*

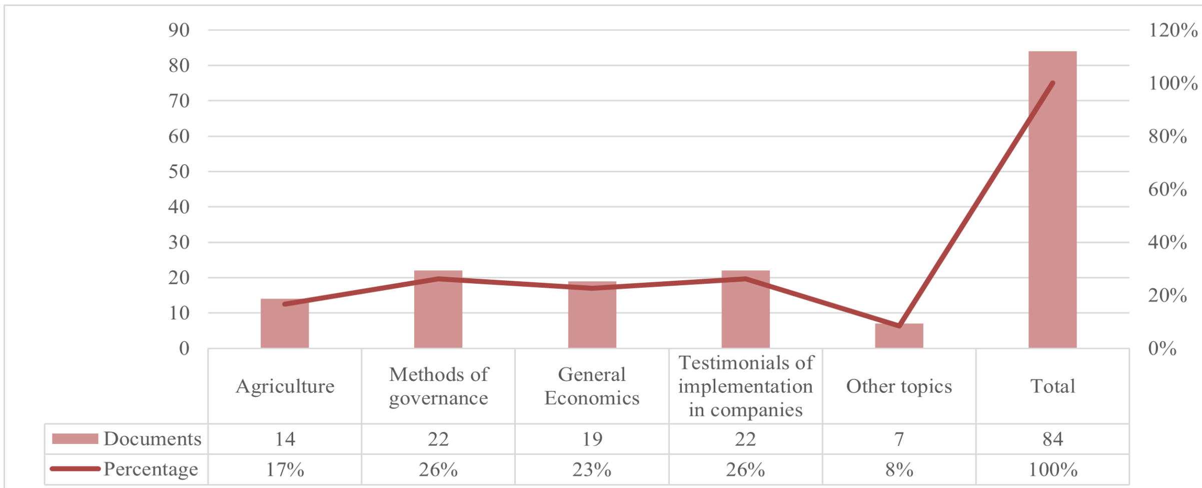
Also called coordination costs, this is the moment when the conditions agreed in the contract are fully developed. Here, the contracting company or contractor responds to its obligations, whether economic, infrastructure, personnel, or otherwise, ensures that decision-making is appropriate and prioritizes the agreed terms, involving quality control. (Fernández-Massi, 2022)

Criterion 2.

In order to know the strategies based on the transaction cost theory that have been implemented by different companies, out of the 156 articles presented in the literature review Table 1 and using the flow chart presented in Figure 4, a total of 84 articles were used in which different cases of organizations that put this theory into practice were presented, so they were filtered and subclassified as follows:

- Publications related to the area of agriculture.
- Government-related publications.
- Publications related to general economics.
- Publications of testimonials of implementation in companies.
- Publications related to other topics.

Graph 3 presents the results of this classification, showing both the number and the percentage of publications by subject area, which allows a more accurate assessment of the emphasis that has been placed on the application of the theory in different sectors.




Graph 3. Classification of organizational strategies based on the transaction costs theory
Source: Authors' elaboration

### *Publications related to the area of agriculture*

The importance of the agricultural sector, considered one of the fundamental pillars of any country's economy, is highlighted. In the literature review, 14 of the 84 publications (17%) were explicitly related to agriculture (see Graph 3). The main objective of the articles reviewed in this area was to reduce transaction costs caused by external factors, such as taxes, which allows for better allocations without second-best allocations (Smith & Tomasi, 1995). This potential efficiency in resource allocation can represent a competitive advantage for agricultural firms by reducing external frictions that hinder their operating performance.

This focus on efficiency extends to complementary processes within the agricultural environment. For example, Donoso et al. (2009) highlight how the homogeneous distribution of water resources in Chile affects agriculture and sectors such as mining, hydropower, and industry (Martínez-Fajardo, 2002). This suggests that shared natural resources, such as water, generate intersectoral effects that must be integrated to avoid economic and productive imbalances. In turn, this phenomenon is not exclusive to Chile, but is also present in other Latin American countries.

In this sense, Tarziján (2008) analyzes how countries such as Peru, Ecuador, Bolivia, and Colombia face similar challenges due to urban growth and the consequent shortage of resources. According to Tarziján (2008), international treaties and trade laws have been key to exchanging scarce resources, such as water. Finally, Arana-Coronado and Trejo-Pech (2014) propose that the generation of certainty in supply, efficiency in supply times, and improved coordination between supply and demand are fundamental strategies. These can be achieved through analyzing market timing and competitive behavior, as well as studies on intermediaries, such as chain stores and marketplaces, which directly impact agricultural product consumption levels.

### *Publications related to governance methods*

On the other hand, there are the articles whose subject matter focused on methods of government, which were 22 of the 84 publications, equivalent to 26% of the selected publications (see Graph 3) in this review criterion. It was determined that economic growth was important to remain at the margin of global competition. This contributed to its continuous development through the reorganization proposed under the legal and administrative reforms. (Gómez-Puente, 2014)

This can be related to the transaction cost theory because the governance structure delimits how the changes are negotiated and fulfilled, allowing one to infer that implementing the transaction cost theory depends on the configuration of government management. (Trejos-Mateus et al., 2022)

### *Publications related to general economics*

When talking about the theory of transaction costs, one of the topics that is most related is the sector of the economy, and this was reflected in the articles whose subject of study was the changes that were seen with the adoption of this theory, 19 of the 84 publications, or 23%, were added to this subclassification (see Graph 3). However, the behavior of the economy's movements is strongly linked to the country where the facts are happening (Castro-López, 2020).

In countries such as Colombia, which has the highest number of articles compared to other countries (see Figure 2), a significant proportion of these publications deal with issues related to the legal risks faced by organizations. In particular, the challenges arising from non-compliance with Colombian regulations or their application in regular legal processes are highlighted. A frequent example is money laundering, an illicit activity that consists of passing off income, mainly from drug trafficking, as the legal income of a company, in order to avoid being traced by the control entities. (Castillo-Fernández & Sotelo-Valencia, 2013)

Strategies were implemented to reduce this activity in the country's currency exchange centers, such as detection machines, staff training and education, increased surveillance, and greater supervision by control entities. This influences transaction costs, which helps explain whether these costs are affordable compared to the income generated by foreign exchange establishments (Cadena & Cárdenas, 2011). On the other hand, about the processes in the regular justice system, there is also mention of tutela actions, a mechanism by which economic benefits are obtained for the person who files the action, which allows analyzing the role of judges, arbitrators and public officials so that the actions they take for or against the case are not influenced. (Torres & Quintero, 2007)

### *Company implementation testimonials published.*

For the article review, 26%, which refers to 22 of the 84 publications (see Graph 3), were used, and there is an excellent variety of testimonies of companies that implement the concept of transaction costs.

The influence of the transaction cost theory was of great benefit to business people who sought to be more efficient with their internal production processes, which forced them to adopt new techniques demanded by the same theory, as in the case of health insurance companies in Colombia, where vertical integration in the relationship of links in the production chain is nonexistent, which means that both members and providers do not contribute to maximizing the system's objective function (Robertson, 1990).

The purpose of this increase is to lower costs, although it deteriorates the quality of the service provided. This raises the question of whether it is worth saving part of the resources at the expense of the quality of life of the people, or, on the contrary, to reach an economic crisis until the health-promoting entity is liquidated (León-Murillo & Rodríguez-Vargas, 2012).

### *Publications related to other topics*

To conclude, there were a total of 7 publications out of 84, which is equivalent to 8%, and these are the publications that dealt with other types of topics apart from the main subcategories shown above (see Graph 3), which gives us an overview of the scope of this theory in terms of improving the business and economic system, which can be reflected in large, medium or small companies, as well as in the political and economic management of a country.

By performing this analysis and the de-aggregation of the information obtained in the literature review, it was possible to analyze the perception of the authors who were taken as a reference as they are known as precursors or pioneers of the Transaction Costs theory, in addition to the contributions that year after year have been made by organizations in order to enrich the information regarding how companies understand and apply this theory in the development of processes from its implementation in the production and acquisition of strategies to the organizational structure proposed by top management. (Susarla et al., 2009)

## DISCUSSION

This qualitative study analyzed 158 academic publications from 18 countries to explore how healthcare organizations understand and apply Transaction Cost Theory in their organizational processes and structures. The results revealed that the application of TCT in the healthcare sector varies significantly across regions and institutional frameworks. Much of the literature focuses on governance mechanisms, especially contracts and hybrid organizational forms, as tools to reduce transaction costs in service delivery, procurement, and outsourcing. In market-oriented health systems, TCT is frequently used to evaluate purchasing or sales decisions, assess provider performance, and manage coordination between public and private actors.

The analysis also identified key recurring factors influencing healthcare transaction costs: information asymmetry, asset specificity, and uncertainty. These elements are closely related to inefficiencies in supply chains, contract rigidities, and inter-organizational collaboration issues. This confirms the relevance of these factors in understanding transaction costs in the healthcare sector, which often result in operational inefficiencies and service quality problems. (Jrbashyan & Harutyunyan, 2006)

From a structural perspective, the literature suggests that many healthcare institutions adopt hierarchical models or networks to manage transaction risks. However, the effectiveness of these strategies is highly dependent on institutional capacity and regulatory environments. This finding highlights a significant gap in the application of TCT in various healthcare systems and sectors, especially in resource-constrained settings, where TCT adoption may be more challenging. (Di Filippo, 2021)

Although TCT provides a robust framework for analyzing costs beyond direct prices, its application remains context-dependent and often underutilized in the health sector. This study underscores the need for more integrative models that align economic efficiency with public health objectives, especially in resource-constrained settings. This observation reflects a broader challenge in the health sector, where economic strategies often conflict with the primary goal of improving public health outcomes.

An important finding is the low global adoption of TCT in the health sector, as evidenced by the limited number of publications that address its implementation. Most of the studies in the literature come from Colombia and the United States, with a notable absence of research focused on TCT applied to the health sector, especially in developing countries. This gap raises the need for further research on the barriers that prevent its wider application, particularly in Latin America. (Chavarro-Velandia & Triana, 2013)

In addition, the literature review exposed that implementing TCT to improve the efficiency of processes and the profitability of the products offered by organizations can generate negative factors in certain stages of the process. For example, the lack of adequate human or material resources can result in quality problems, impacting the profitability and efficiency of the service (Spiller & Zelner, 1997). This problem is aggravated by the economic burden of internal or external audits, training sessions, and the constant repetition of activities, which leads to additional costs. (Klaas et al., 1998)

Additionally, applying TCT in the healthcare sector is related to outsourcing, allowing organizations to delegate specific responsibilities to specialized companies. This, in turn, allows the contracting organization to focus on its key activities. However, this process can generate hidden costs and risks that affect both the quality and profitability of the services provided.

After analyzing and classifying the literature on transaction costs, the study identified two main problems: a) the lack of documentation on the implementation of transaction cost theory in organizations, and b) the non-application of the theory in all sectors, particularly in the health sector (Miranda Contreras, 2013). These shortcomings suggest that TCT could be more important in improving decision-making processes and organizational performance in the health sector.

The low presence of research on TCT in health systems raises an urgent need for studies in Colombia and other regions, considering factors such as regional differences, target population, economic sectors, and organizational characteristics. By supporting these studies with tools that facilitate decision-making, it would be possible to reduce the uncertainty of senior management and create a more unified application of transaction cost theory in various sectors. This could improve organizational structures and health care quality in public and private organizations.

## CONCLUSIONS

Based on the analysis of 158 academic publications from 18 countries between 1990 and 2022, this study identified how Transaction Cost Theory is understood and applied in the health sector. The review revealed that, although TCT offers a solid theoretical framework for optimizing organizational processes, its actual implementation in the healthcare setting remains fragmented and highly dependent on the institutional and regulatory context. Its use is more frequent in market-oriented health systems, especially in countries such as Colombia and the United States, where its applicability in purchasing decisions, provider evaluation and coordination between entities is analyzed.

A key finding was the underutilization of TCT in low-resource health systems, which highlights a gap in the literature and in practice, particularly in developing countries. This gap highlights the need for more integrative models that align economic efficiency with public health objectives (Martínez-Agudelo et al., 2020). Also, factors such as information asymmetry, asset specificity, and uncertainty continue to raise transaction costs and limit efficiency in health supply and procurement chains. (Wink Junior et al., 2011)

In addition to identifying the main limitations in the documentation and application of TCT, this review also revealed that, in many cases, organizations do not have clear criteria to guide their implementation. From this arises the proposal to develop a "checklist" type evaluation model that facilitates the identification of critical factors when applying this theory, to reduce uncertainty and strengthen decision making (Fink et al., 2006). This model could be based on the three types of transaction costs identified by Castaño-Yepes (2004), which would make it possible to structure standard and comparable criteria among different organizations.

It also highlights how, throughout the period analyzed (1990-2022), TCT moved from an eminently theoretical approach to a more practical use, as evidenced in studies reporting concrete organizational experiences. However, transaction costs (such as the so-called "washer" costs) remain unrecognized in traditional financial analysis, despite their permanent impact on management (Uribe-González, 2000). These types of costs, described since the foundational works of Coase (1937) and Williamson (1998), should be systematically considered in the management processes of the health sector.

The articles reviewed, such as those by Gorbaneff et al. (2004) and Pinzón (2017), show how TCT can become a structuring axis of organizations by improving the processes derived from exchanges. However, these experiences are still scarce and little systematized. Therefore, it is recommended to move towards applied case studies that accurately document the implementation steps and evaluate the real impact of TCT in specific healthcare institutions, as Estrada (2012) suggested.

Despite the value of this review as a starting point, the research faced several limitations. The scarcity of literature explicitly applied to the health sector stands out, which can generate selection and interpretation biases. Likewise, the absence of standardized tools to evaluate the application of the theory in different settings was identified. Therefore, future research should consider mixed Methodologies, incorporate digital technologies for tracking transactions, and promote comparative studies to help identify good practices and reduce uncertainty in organizational decision-making.

In short, although TCT has excellent potential to improve efficiency in the health sector, its practical applicability requires further empirical development, especially in contexts where institutional limitations are significant. The construction of measurement and analysis instruments adapted to this sector would contribute to academic progress and real improvement of the quality of health services and organizational management.

## CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Garcia-Gomez: Conceptualization, Methodology, Validation, Formal Analysis, Research, Data Curation, Writing - Original Draft, Writing - Proofreading and Editing, Visualization, Supervision, Project Management. Camacho-Mariño: Conceptualization, Methodology, Validation, Research, Data Curation, Writing - Original Draft, Visualization. Leon-Forero: Conceptualization, Methodology, Research, Data curation, Writing - Review and editing, Supervision.

## FUNDING

This article is a product of the research project “Transaction Costs in the Health Sector: An Analysis from the Literature.”

## DECLARATION OF COMPETING INTEREST

The research presented does not involve a conflict of interest with the authors, the journal, or the entity that publishes it.

## ACKNOWLEDGMENTS

The authors would like to thank and acknowledge the Fundación Universitaria de Ciencias de la Salud – FUCS.

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