

Analysis of the Competitive Profile of the Cocoa Production Chain in the Department of Arauca*

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Abstract

This article presents the results of the research entitled *Análisis de perfil competitivo de los principales sectores definidos en el Plan Regional de Competitividad para el departamento de Arauca*, and also records the special characteristics of the cocoa production chain. This article is intended to determine if the cocoa sector has the necessary characteristics to become an enclave economic activity, and an agglomeration from which it is possible to boost the economic and social development of the territory. For this purpose, a qualitative methodology of multimodal approach has been used, implemented through semi-structured interviews with representative actors of the production chain. With the gathering and subsequent analysis of the information, it was determined that there are objective conditions that support the prioritization of the cocoa sector in the Regional Competitiveness Plan, but that there are also factors that prevent the competitiveness of the sector from approaching ideal levels. In this sense, it is important to note that there is a need to develop coordinated processes within the active social actors in the territory, with the main purpose of articulating

Keywords

Competitiveness, cocoa, productive chain, productivity, competition, technology

JEL Classification

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some comparative advantages represented in excellent agroecological conditions, with business dynamics aimed at a complexization of productive activity aimed to the generation of value.

Análisis del perfil competitivo de la cadena productiva del cacao en el departamento de Arauca

Resumen

Este artículo presenta los resultados de la investigación titulada *Análisis de perfil competitivo de los principales sectores definidos en el Plan Regional de Competitividad para el Departamento de Arauca* y registra las particularidades de la cadena productiva del cacao. Busca determinar si el sector cacaotero cuenta con las características necesarias para convertirse en una actividad económica de enclave y aglomeración a raíz de la cual sea posible apuntalar el desarrollo económico y social del territorio. Para este propósito, se ha utilizado una metodología cualitativa de enfoque multimodal, implementada a través de entrevistas semiestructuradas a actores representativos de la cadena productiva. Con la recolección y el posterior análisis de la información, se determinó que existen condiciones objetivas que avalan la priorización del sector cacaotero en el *Plan Regional de Competitividad*, así como factores que impiden que las capacidades competitivas del sector se acerquen a los niveles óptimos. En este sentido, se recalca la necesidad de desarrollar procesos coordinados entre los actores sociales activos en el territorio, con el objetivo fundamental de articular unas ventajas comparativas representadas en excelentes condiciones agroecológicas, con dinámicas empresariales encaminadas a una complejización de la actividad productiva que apunte a la generación de valor.

Palabras clave

Competitividad, cacao, cadena productiva, productividad, competencia, tecnología

Análise do perfil competitivo da cadeia produtiva do cacau no Estado de Arauca

Resumo

Este artigo apresenta os resultados da pesquisa titulada *Análise do perfil competitivo dos principais setores definidos no Plano Regional de Competitividade para o estado de Arauca* e registra as particularidades da cadeia produtiva do cacau. Busca determinar se o setor de

cacau conta com as características necessárias para transformar-se em uma atividade econômica de enclave e aglomeração a raiz da qual seja possível apoiar o desenvolvimento econômico e social do território. Para este propósito, se utilizou uma metodologia qualitativa de enfoque multimodal, implementada através de entrevistas semiestruturadas a atores representativos da cadeia de produção. Com a coleta e a posterior análise da informação se determinou que existem condições objetivas que avalizam a priorização do setor do cacau no Plano Regional de Competitividade, mas que existem fatores que impedem que as capacidades competitivas do setor se aproximem aos níveis ótimos. Neste sentido, se recalca a necessidade de desenvolver processos coordenados entre os atores sociais ativos no território, com o objetivo fundamental de articular umas vantagens comparativas representadas em excelentes condições agroecológicas, com dinâmicas empresariais encaminhadas a uma complexidade da atividade produtiva visando a geração de valor.

Palavras chave

Competitividade,
cacau, cadeia produtiva,
produtividade,
competência, tecnologia

Introduction

According to Albuquerque (2003, p. 11), when defining the *bets* that a given territory must prioritize in order to consolidate its growth and economic development dynamics, it is necessary to interrelate the actions of public and private agents who have an impact on the territorial dynamics, by strengthening the consensus forums openly advocating for a shared vision of local development. Regional commissions and their competitiveness plans can be considered as a significant effort made at the national, regional and local levels, aimed at ensuring compliance with the aforementioned condition. Almost at the same time, and as a logical consequence of this process, dynamics of social emancipation thought and felt from the territory through these scenarios have been stimulated (Echeverry, Medina & Silva, 2013).

It is true that, because they are prospective exercises essentially intended as guidelines for the strategic actions of the different social actors in the medium and long term, regional competitiveness plans are not documents known for an extensive theoretical, conceptual and methodological treatment of the categories concerning regional development. However, it is possible to discern an approach that enhances organization in networks and associations as a mechanism for the effective exploitation of the advantages resulting from the natural endowment of the territories (Becerra & Álvarez, 2011; Martínez, 2004).

In the rhetoric of competitiveness plans, integration has been understood as the most effective mechanism to reduce the learning curve and, thus, accelerate the acquisition of knowledge that promotes an innovative dynamic in the territory. Such integration is conceived from a point of view close to that of Helmsing (2002), that is, based on a social organization consolidated under schemes for analyzing demand and coordinating supply, through direct cooperation between productive units and strong government support systems (2002, p. 34).

In the department of Arauca, this type of dynamics can be found in cocoa cultivation, which is why this sector, according to the Regional Competitiveness Plan, has been identified as a unique opportunity to promote the economic and social development of the territory and, therefore, as one of the productive bets with the greatest potential (Secretaría de Planeación Departamental de Arauca, 2011).

The research process presented in this paper has focused on identifying the reasons why, despite the existence of favorable natural conditions (mostly a wide agro-ecological supply and a climate more than conducive to cultivation), in case of an excellent classification and with a recognized variety and the quality of the cocoa produced, this economic activity has failed to position itself as a predominant productive sector within the economic structure of the department of Arauca. Based on the perceptions gathered throughout the investigation, the main reason is that it has not been possible to adequately integrate the comparative advantages with the outstanding social and business dynamics that promote the generation of value. As a result, the investigation has sought to determine the characteristics that make the cultivation of cocoa an important economic activity that has not yet managed to become established under the dynamics of a productive chain. Our interest as an investigation group is to generate practical and conceptual inputs that contribute so that this productive *bet* transcends to enclave and agglomeration dynamics, that is, towards the basic unit of territorial competitiveness and regional development, the latter one being understood as the cluster in specialized literature (Porter, 2013, 1999, 1991; Buendía Rice, 2013; Becerra & Álvarez, 2011; Yifu Lin, 2010).

Significant Background

The cocoa sector is one of the most important sectors in Colombia: a large number of families depend on this activity for daily sustenance; thousands of farmers have found in cocoa the opportunity to guarantee their livelihood and live in

dignity. In the specific case of the department of Arauca, the cocoa activity has shown that it is possible to reduce dependence on oil revenues and that the agro-industrial activity is a valid alternative to boost the territory's development and progress (Secretaría de Planeación Departamental de Arauca, 2011). In this sense, the favorable agroecological conditions and the distinctive characteristics in terms of grain variety have caused the department to rank second in the country's list of cocoa producers, surpassed only by the department of Santander, where, according to data supplied by the Ministry of Agriculture, production amounted to a total of 18,963 tons in 2009 (Secretaría de Planeación Departamental de Arauca, 2011). These characteristics or comparative advantages are particularly due to the large arable area available, as well as climatic conditions. These natural factors, together with some cultural and social aspects, have given strength to cultivation, an aspect that discloses real opportunities to promote a sustainable and lasting economic development and growth.

According to active agents of the chain, the production officially recorded in the department of Arauca is 5400 tons, but the actual figure may exceed 13,000 tons of cocoa per year, a production that comes mostly from the towns of Arauquita, Tame and Saravena (Unidad Administrativa para la Consolidación Territorial, 2012); the difference is that a great part of cocoa is registered as originating from Santander.

The National Federation of Cocoa Producers is the institution in charge of providing technical assistance. Based in Arauquita, it is one of the main clients of the two cooperatives operating in the department of Arauca (Coopcacao, from Saravena, and Coomprocar, from Arauquita), which are responsible for harvesting and selling the cocoa grown throughout the department. Acting around a solid institutionality, the cocoa union has managed to integrate all the actors of the value chain present in the territory, and it is characterized by a great unity and an active and purposeful participation in the different activities or projects aiming at strengthening the activity, higher levels of productivity of the crop and the increase of the competitive possibilities at a local and regional level.

One of the first phases of the research project was to conduct an analysis of Porter's five forces (2013), which determine the general structure, the way in which people compete in it, and the profit margins obtained in an industry (p. 21). Based on this analysis, we were able to conduct the following in-depth analysis of the cocoa sector in the department of Arauca:

1. *Industry rivalry*. Cocoa producers claim not to know about the existence of competition and, although they admit to the possibility, they are still unaware of any consequences that it may entail in the future. This is essentially explained by a business model that allows them to sell everything they produce with little effort, thus diffusing the effects of possible increases in supply.
2. *Threat of new entrants*. As in the previous aspect, the marketing plan that guarantees the purchase and sale of the entire production leads to the possibility of new market participants not being perceived as a threat. This allows us to infer a lack of knowledge of the national and international conditions that characterize this kind of crops, which in turn accounts for an out-of-date production apparatus that develops very few processes with the purpose of improving its competitive condition.
3. *Threat of substitutes*. The perception of the production chain agents is that no product could replace cocoa. Due to its organoleptic characteristics, the department's cocoa is unique; not even coffee or any other beverages can replace its taste, smell or texture. Some of the people consulted for this research recognize the possibility that the changes in the cultural and social dynamics that are already starting to take shape might require in-depth transformations in the production plans.
4. *Bargaining power of suppliers*. The existing relationship with suppliers is very good (most people describe it as very effective), precisely because of the easy access to the department. However, the demand's power to change the price of basic, life-sustaining goods is very low or non-existent, and this affects the possibilities of adaptation in case of unfavorable circumstances for crop prices.
5. *Bargaining power of customers*. The relationship between cooperatives and cocoa producers is described as excellent. They are the ones that buy cocoa and sell it to major trademarks, such as Casa Luker and Nacional de Chocolates. However, the cooperatives in charge of negotiating with these large companies complain about the existence of an oligopsony, which has ended up significantly reducing their negotiation power and affecting their margins of profitability.

Materials and Methods

The investigation was qualitative in nature and was specifically developed through an integrated multimodal approach (Hernández, Fernández & Baptista, 2007).

Therefore, the analysis lists the information obtained from both primary sources and secondary sources, the former one by means of in-depth interviews with 18 specialized actors from the value chain. Strategic actors of the sector were identified and selected through a screening or referencing process. Thus, the necessary inputs to feed the competitive profile matrix were built, based on the parameters defined in the study by Mosquera, Argumedo and Morales (2010), developed for the ornamental sector in Atlixco, Mexico. The results in the methodological proposal adopted are read using a rating scale where the standard score or average competitiveness is 2.5. Therefore, a lower value indicates an unfavorable situation, while a higher number means a superiority of the sector. A descriptive work was thus consolidated, listing both the favorable and unfavorable conditions that explain the competitive dynamics of the productive sector in the department of Arauca.

Analysis of the competitive situation according to the productive process conditions

The analysis of the productive process of the cocoa chain in the department of Arauca was made based on perceptions that the different actors of the chain have on the strengths and weaknesses of the sector, as well as its ability to make the most of each of them or to improve them. As such, it was possible to determine that the cocoa sector is of vital importance to the economic structure and, therefore, to the economic and social development of the department. In the words of one of the interviewees: “I essentially subsist on cocoa production; we have approximately 7000 cocoa trees [...], that is where most of my sustenance comes from” (Flores, personal communication, March 20, 2015).

This is such a common occurrence that, according to the sources consulted, the department has become the second largest producer in the country, which means that, after Santander, it is close to cultivating 10,000 hectares or more of cocoa (Pérez, personal communication, March 20, de 2015).

Aware of the importance of this data, the State has encouraged, with the help of the National Federation of Cocoa Producers, the development of this crop in the department through processes of support to cocoa farmers (mainly technical assistance and facilitating access to the many investigations carried out to combat the different diseases of the crop). Cocoa producers, for their part, have

begun to explore association plans that will allow them to make the most of the outstanding characteristics of the crop, aiming to generate mechanisms to enter the international market that translate into better monetary gains. These factors largely explain the assessment of the competitive situation of the chain in terms of production, as seen in Table 1.

Table 1. Key competitive elements in the productive aspect

Competitive Position					
Key Competences		Analysis of Strategic Actors		Ideal Competitiveness	
Variable	Percentage	Estimate	Total	Estimate	Total
Management of production processes	14	1.2	0.2	4	0.6
Agro-ecological supply conditions	24	4.0	1.0	4	1.0
Support from public and private entities	24	4.0	1.0	4	1.0
Quality of the product	24	3.9	0.9	4	1.0
Dynamics of association and cooperation in the production chain	14	1.4	0.2	4	0.6
Total	100		3.2		4

Source: Own elaboration.

Table 1, which corresponds to the analysis of the productive process, shows that the assessment yields total average of 3.2. According to the different agents of the value chain consulted, this means that the cocoa sector is at a higher competitive level. Although some variables are well below what has been known as “standard competitive situation” in the methodology, the assessments tend to emphasize the good conditions of the sector in this aspect. One of the most cited strengths by those consulted are related to the four honorable mentions that cocoa produced in the department has received at different international fairs, such as the Paris Chocolate Festival: “due to its agro-ecological conditions of soil, climate and genetics, this is a high-quality cocoa, [...] a cocoa with a fine taste and aroma” (Olarte, personal communication, March 20, 2015).

Although these mentions have led to the global recognition of the cocoa of Arauca thanks to its characteristics, which opens a number of great commercial opportunities, it is necessary to better consolidate the production processes focused on high-quality varieties.

In this regard, the cocoa producers' reluctance to an effective association that promotes the use of the different technology packages offered by the National Federation of Cocoa Producers has played a major role. This is evident from most of the testimonies, among which we would like to draw particular attention to one that encompasses the perception of the agents consulted: "Many cocoa producers do not commit to the benefits provided [...] a lot of people acquire the benefits simply not to waste them, or they expect the Federation to do the work for them and, as a result, they neglect the crops" (Alarcón, personal communication, March 20, 2015). This dynamic leads to a low-quality production, an aspect that generates a negative impact on the positioning of the cocoa of Arauca.

"Most farmers are unaware of the dynamics of competition that the sector must face at a regional, national and international level, reason why they barely consider the eventual consequences that such dynamics may bring to them".

Analysis of the competitive situation according to the conditions of the competition

As seen in Table 2, in the competitive aspect, the total estimate of the strategic actors (cocoa producers) is 1.6, a number that, according to the methodology used, indicates a competitive situation well below the average or standard. This situation may be attributed to the fact that most farmers are unaware of the dynamics of competition that the sector must face at a regional, national and international level, reason why they barely consider the eventual consequences that such dynamics may bring to them. The words of one of the agents consulted illustrate this: "at a regional [*sic*] level, the truth is not that there is competition as such, you sell what you produce [...] the ideal is to produce [...] I wish cocoa was our strength, because that product is not affected by free trade" (Sánchez, personal communication, March 20, 2015).

Table 2. Key competitive elements in the competition aspect

Competitive Position					
Key competences		Analysis of strategic actors		Ideal competitiveness	
Variable	Percentage	Estimate	Total	Estimate	Total
Immersion processes in foreign trade	25	2.0	0.5	4	1.0
Ability to meet the requirements of the international market	25	2.3	0.6	4	1.0
Power of bargaining with intermediaries and final buyers	25	1.3	0.3	4	1.0
Traceability of the product	25	1.0	0.3	4	1.0
Total	100		1.6		4

Source: Own elaboration.

Although it is true that there are large cultivated areas in the department, the Arauca variety, which has been granted several awards for its flavor and aroma at the Paris Chocolate Festival and, despite its high demand in foreign markets, its production levels are the lowest in the department. This paradox is due to the fact that producing this variety requires an adequate final management of the profit process, and this aspect has yet to be standardized. Accordingly, large quantities of exported cocoa have been returned on certain occasions, as it did not have the characteristics required to meet customer requirements, and this situation affects the overall competitive opportunities of the production chain. Those consulted agree that, in order to compete in the global cocoa market, more and more farmers need to save areas in their plots or farms for this crop, seeing as demand far exceeds the existing supply. They also agree that these crops should focus on high-quality varieties.

It is clear that the monopsony situation to which cocoa producers in Arauca are subjected gives rise to a marked nonconformity with the asymmetries in the power to bargain with buyers: Nacional de Chocolates and Casa Luker. Production chain agents suggest that the answer to this critical situation is unionization and cooperation in all areas. According to one of our interviewees, “we are working hard to locate foreign markets because domestic industry has unfortunately turned us

into conformists” (Olarde, personal communication, March 20, 2015). The people consulted believe that, if this high dependence on the purchasing companies continues and producers agree to pay whatever they want for the product, the sector’s development will be very limited. The concern is due to the lack of incentives for producers to grow quality cocoa:

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Luker and Nacional de Chocolates [...] have not given the greatest incentive to cocoa producers; regarding final payment of the product [...], cocoa producers are not encouraged because these two companies are interested in excellent-quality cocoa but they pay the same price for it. (Barrientos, personal communication, March 20, 2015)

The lack of an adequate production record is also worrying and negative for the competitiveness of the chain. This is an aspect where, according to the production chain agents, “the national, municipal and departmental governments need to help [...] the idea is to have a report, that every truck and cocoa trip is recorded [...] that we are really able to know how much we are producing” (Flores, personal communication, March 20, 2015).

The importance of this situation should not be underestimated, since many producers reported that the existing records do not correspond to the production reality of the department. There is a considerable number of intermediaries who, without any sort of control, manage to acquire significant quantities of cocoa from Arauca in order to move it to department of Santander and report it as originating from that place. The cocoa sector is calling for greater control, which is linked to the strengthening of cooperatives in the region, in such a way that the processes of storage, distribution and, if necessary, transformation are under their control with a design similar to the one established by the National Federation of Coffee Growers, but with more freedom for individual efforts aimed at venturing into foreign trade.

Analysis of the competitive situation according to the technological conditions

As for the results obtained in the analysis of the technological conditions that characterize the cocoa sector in the department of Arauca, this factor is at a

standard competitive level with a value of 2.6 (Table 3). In this case, quite different assessments are observed for the different variables; there are some that approach what is considered “the ideal value”: the application of new technologies and technological research and orientation. These two factors, according to the information collected, are directly related to the tools that the National Federation of Cocoa Producers provides to producers in the region, to whom, among other things, they teach new models of planting, pruning and grafting, essential tools to maximize yields of plantations and to avoid major losses in production. In this sense, the perception is that the sector has entered into a dynamic of continuous improvement, reflected in the design of agreements, strategies and policies “to position our cocoa in the world”; the intensification of trainings in phytosanitary management; modernization of crops, and adaptation of seed models and benefit processes (Flores, personal communication, March 20, 2015).

Table 3. Key competitive elements in the technological aspect

Competitive Position					
Key Competences		Analysis of Strategic Actors		Ideal Competitiveness	
Variable	Percentage	Estimate	Total	Estimate	Total
Application of new technologies	30	3.0	0.9	4	1.2
Technological research and orientation	30	3.7	1.1	4	1.2
Specialized laboratories	20	1.4	0.3	4	0.8
Attitude towards change	20	1.6	0.3	4	0.8
Totals	100		2.6		4

Source: Own elaboration.

Table 3 also shows that there are variables that must be seen as important possibilities for improvement in the medium and short term: the lack of specialized laboratories and the resistance to change that some producers in the region still show. The first variable reflects the need to create added value through the transformation of the cocoa fruit. Although it is important to note that there some

units in the department are already dedicated to the production of chocolate in different presentations (essentially sweets), the transformation must be outsourced through companies located in the city of Bogotá, a situation that undermines the competitive possibilities of this type of entrepreneurial ventures. The second variable is related to the obstinacy of a large number of cocoa growers, an aspect that hinders the improvement of the production.

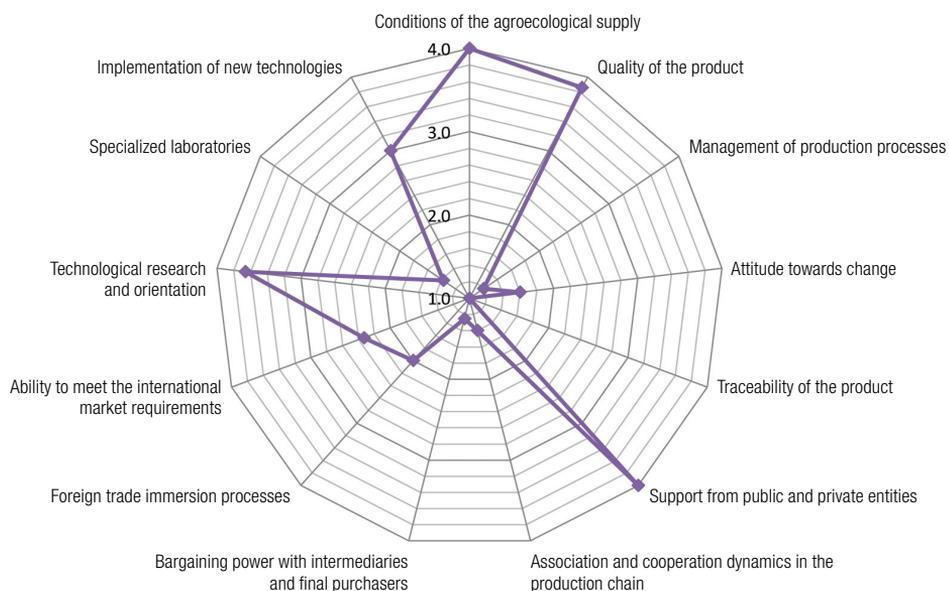
The diagnosis related to these two variables revolves around the limitations to provide technical support, not so much due to their quality, but because of the limited number of specialized technicians in the region, a situation that leads to “knowledge not reaching all cocoa farmers, who may be reluctant to adopt these processes [...] they are very traditional and have not yet accepted the technological process that has so far been used” (Barrientos, personal communication, March 20, 2015).

Global analysis of the competitive situation of the cocoa sector in the department of Arauca

An overall analysis of the competitive situation of the cocoa sector in the department has made it possible to determine that, in essence, the variables evaluated at a competitive level above the standard refer to natural conditions, product quality, support from different institutions, the application of new technologies, research, and technological orientation. With these variables, the agro ecological conditions of the territory, the rooting and the importance of this activity in the productive system are exalted, as well as the importance of the federative plan and the support from the government that the cocoa sector in the department has enjoyed.

Likewise, it can be seen that the variables related to competition are very far from an ideal level of competitiveness (Figure 1). In this sense, it is important to continue promoting and strengthening the processes of immersion in foreign trade that are starting to appear in the department. Producers should begin to realize that while competition at the local level is not very strong, in the national and international context, quality and differentiation are highly recognized and rewarded.

Figure 1. Competitive profile analysis of the cocoa production chain in the department of Arauca



Source: Own elaboration.

"Producers should begin to realize that while competition at the local level is not very strong, in the national and international context, quality and differentiation are highly recognized and rewarded".

The results obtained in the development of the research have made it possible to determine that the cocoa sector, due to its dynamics and necessary objective conditions, must be considered as one of the productive bets of the territory. Although it is true that there are multiple weaknesses in the aspects studied, they can be counteracted if actions are taken to articulate the efforts of value chain agents.

Conclusions

The actors in the value chain agree that the department of Arauca has favorable natural conditions

that allow it to produce large quantities of very good quality cocoa, which is highly desired both nationally and internationally.

The support received by the State and the National Federation of Cocoa Producers is important, but it must be guaranteed that it reaches each of the farmers of this type of crop, so that they are all trained and able to act appropriately against the different diseases that are generated in the cultivation of cocoa, in order to mitigate the damages in each one of the cocoa farms.

The new technological tools have made it possible to generate a product of greater quality, but a great part of cocoa farmers refuse to use them, and this has become a problem for the sector. The same happens with the presence of intermediaries, because it prevents the generation of a specific report on the amount of cocoa being produced in the department.

The cocoa in the department has been awarded several times at the Chocolate Hall of Paris, for its fine taste and aroma, but this type of cocoa, known as the Arauca model, is very scarce and difficult to achieve, since it needs great efforts in the benefit process.

The cocoa guild is characterized by their unity and participation in the different events, whose objective is to provide cocoa growers with efficient tools for the management of their crop.

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