

Comparative Analysis of Trading Between East Africa Community Member States and Local Markets by Tanzanian Small and Medium Agro Enterprises

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Abstract- Intra-Africa trade is one of the most upcoming approaches of economic growth within the continent of Africa through regional economic integrations established. East Africa Community is one of the newly upcoming strong regional integration with the aim of creating harmonious trade environment among its member countries and propels economic growth among them. This study was done to compare the trading costs and benefit between Tanzanian small and medium agro-enterprises (SMAEs) trading to EAC countries and those trading locally within Tanzania. The study collected a sample of 105 SMAEs trading to EAC countries and 105 SMAEs trading locally. Costs and Benefit Analysis tool and descriptive statistics were used and three regions of Tanzania namely Arusha, Kagera and Mwanza were involved with three types of agricultural crops Beans, Maize and Rice. Results indicate that trading to EAC member countries is more benefit than trading locally. Moreover there are number of obstacles such as unstable agricultural export policy, infrastructural problems such as roads, police stops and other non-tariff-barriers that hinder the smoothness of the trade. However the study recommended that more assistance is required by EAC Secretariat, East African Business Council and ministry of agriculture in Tanzania to support these growing SME so as to tap more benefits and acknowledge their contributions such as enabling proper infrastructures such as roads from the remote to the market areas as well as flow of information and access to finance so as SMAEs can obtain enough capital to expand their business.

Index Terms- Small and Medium Agro-Enterprises, East Africa Community, Cost and Benefit Analysis.

I. INTRODUCTION

Intra-African trade has huge potential to create employment, catalyze investment and foster growth in Africa. Since gaining political independence in the 1960s, African Governments have made several efforts to exploit this potential of trade for development, the most recent being the renewed political commitment by African leaders at the African Union summit in January 2012 to boosting intra-African trade and to fast tracking the establishment of a continental free-trade area. By most accounts, African countries have not made significant progress in boosting regional trade. Over the period from 2007 to 2011, the average share of intra-African exports in total merchandise

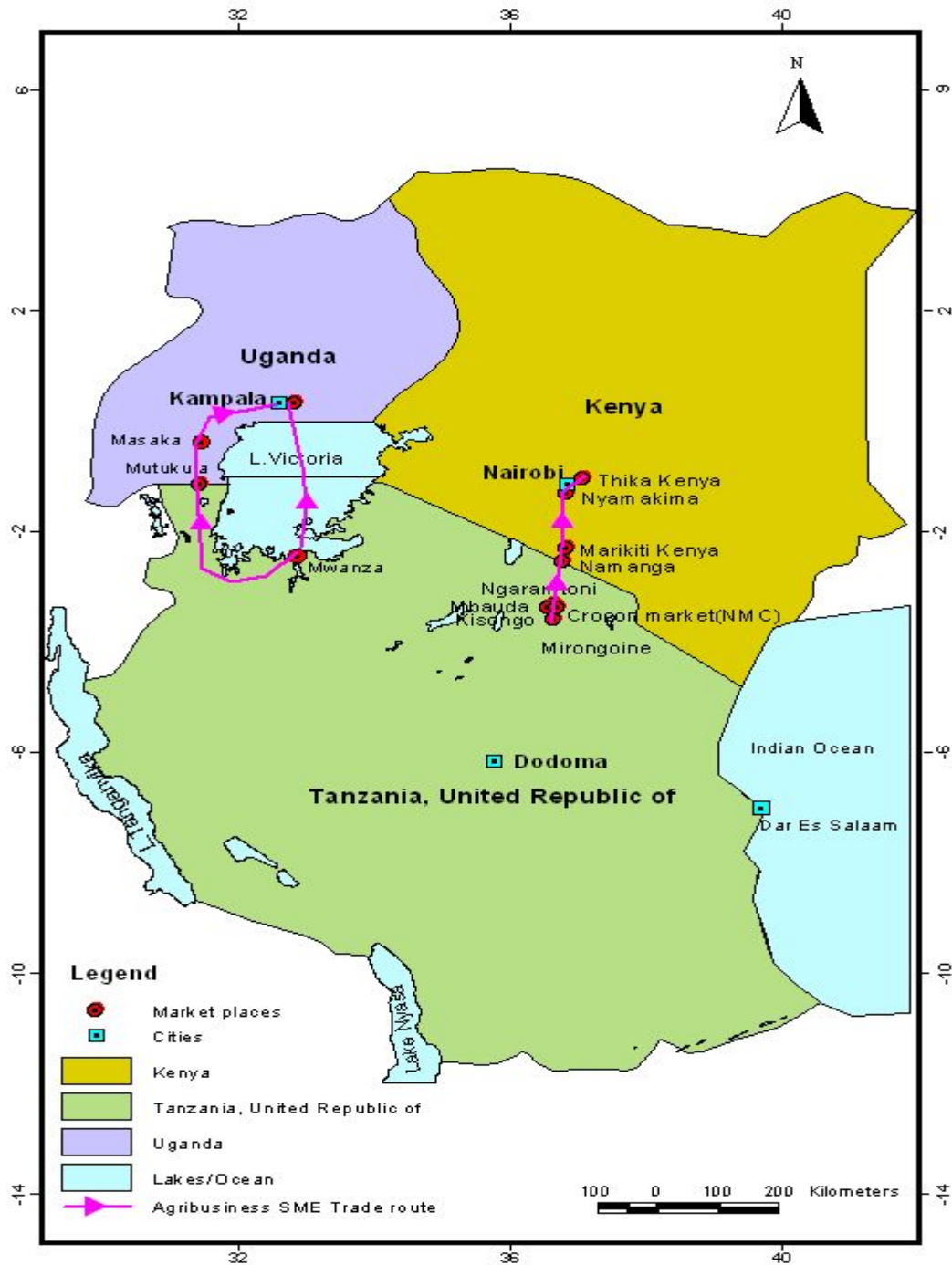
exports in Africa was 11 per cent compared with 50 per cent in developing Asia, 21 per cent in Latin America and the Caribbean and 70 per cent in Europe. Furthermore, available evidence indicates that the continent's actual level of trade is also below potential, given its level of development and factor endowments (UNCTAD, 2013).

Poor performance of intra-African trade can be explained by a number of factors, and these include the type of production (which mainly consisted of raw materials and agricultural products); poor road infrastructure, institutional and financial weakness and poor trade regulations and policies among member states of African Union. In general Africa has the lowest levels of formalized intra-regional trade in the world, estimated at only 10 %. Addressing this by building on current regional integration agendas to facilitate cross-border trade, develop regional infrastructure is important to build a sustainable agri-food sector that is responsive to regional demand (European Union, 2013). The East Africa Community (EAC), is an intergovernmental regional body comprising of five countries with a combined population of more than 130 million and average annual growth rate of 2.6% according to the facts and figures of the East Africa Community Secretariat (EAC, 2012). The main agenda of EAC is attainment of economic, social and political integration, this market provides the opportunity for the countries of Eastern African region to exchange their locally produced goods and services so as to scale up regional development and alleviate poverty.

II. METHODOLOGY

Study Area

The study area included three regions of Arusha, Mwanza and Kagera. Arusha is located in 3.3667° S, 36.6833° E in North of Tanzania, and Mwanza is located 2.5167° S, 32.9000° E. These regions account for a large number of Small and Medium Agro-Enterprises (SMAEs) engaging in East Africa Community (EAC) cross border trade. This is particularly because these regions are in close proximity with the other EAC trading partners such as Uganda and Kenya. Furthermore, these regions had the most well established business enterprises; this is according to the Tanzania Integrated Business Survey (2010). However, in tracing the trading routes Kagera was also included because there are SMAEs trade across Mutukula Border from Mwanza to Uganda.



Cost and Benefit Analysis

Cost-Benefit Analysis (CBA) is an economic appraisal tool for the comparison of costs and benefits associated with alternative approaches. CBA provides a useful basis for decision-making and assists in the systematic appraisal and management of capital and current projects (CEEU, 2014).

Cost and Benefit Analysis approach normally seeks to quantify costs and benefits from changing the current policy. The current policy may be a situation of no regulation or no interference with the market (do-nothing). The typical problem facing such an assessment is that some of the relevant cost and benefit items cannot be estimated with great precision simply because the policy change is hypothetical and there are no

empirical observations available that could reveal reactions of consumers and producers to the new policy set (Tongerren, 2009).

The study analyzed the Costs and Benefit analysis by comparing the Net Present Values (NPV) of Small and Medium Agro-Enterprises trading to EAC partner states and the Net Present Values (NPV) of Small and Medium Agro-Enterprises trading locally within the country so as to establish the difference between the two groups.

The choice of years to be included were based on the correlation between the experiences (measured in terms of years) of Small and Medium Agro-Enterprises (SMAEs) exporting to EAC countries and the current capital. The correlation as Table 4 below shows was significant at 0.001 and the sign for the

correlation was positive meaning that experience has a positive relationship with the current capital of SMAEs exporting to EAC partner states.

Table 1: Correlations analysis between Experience and Current Capital

		Current Capital	Experience in Agribusiness trade
Current Capital	Pearson Correlation	1	.313**
	Sig. (2-tailed)		.001
	N	104	102
Experience in Agribusiness trade	Pearson Correlation	.313**	1
	Sig. (2-tailed)	.001	
	N	102	103

** . Correlation is significant at the 0.01 level (2-tailed).

Thus, the average experience of SMAEs was 9.9 years (10 years) and the average current capital stood at 30 006 000/= Millions Tshs the SMAEs exporting to EAC country, and 25 845 238/=Millions Tshs for the SMAEs trading locally within the country. The same procedure was followed to determine the correlation between experience and current capital for those SMAEs traded locally within the country. The Net Present Value formula used was as follow.

$$NPV = \sum_0^T \frac{B_t - C_t}{(1+r)^t}$$

$$NPV = \frac{B_0 - C_0}{(1+r)^0} + \frac{B_1 - C_1}{(1+r)^1} + \dots + \frac{B_T - C_T}{(1+r)^T}$$

Where:
 NPV= Net Present Value
 B = Benefits at time t
 C = Costs at time t
 t = Time
 r = Discount rate

The choice of the discount rate was taken from the monthly economic review of March 2014 from the Bank of Tanzania (BOT) which was 16.00% and this was used to discount the net returns of maize, beans and rice which are both exported by Small and Medium Agro-Enterprises (SMAEs) to East Africa Community (EAC) countries and traded locally within the country. The net returns were calculated on the basis of trading activities observed per week whereby SMAEs were found to export agricultural goods on average of once per week and travel to EAC countries to sell the commodities. It normally takes an average of three days to sell all agricultural goods exported. The returns for each agricultural goods were calculated on the basis of net returns per week (per one trip), then the values were aggregated on average of 30 weeks in a year. Other weeks in a year were omitted because of seasonal variation of each agricultural goods traded, the supply and demand shifting as well as other activities carried out by SMAEs owners; this includes

for example spending time with families as majority of SMAEs owners are married. Table 5 shows marital status of SMAEs owners;

III. RESULTS

Small and medium agro-enterprises current capital

The current capital of SMAEs vary significantly across different categories of Small and Medium Agro-Enterprises (SMAEs). The results in Table 13 show that, 13 (12.4%) of the SMAEs engaged in EAC cross border trade, had the current capital of up to 5 Million Tshs, these represent Micro Enterprises. About 90 (85.7%), of the SMAEs engaged in EAC cross border trade had the current capital of above 5 Million Tshs to 200 Million Tshs; these represent Small Enterprises and 1 (1.0%) of the SMAEs had the current capital of ranging from above 200 Tshs. Millions to 800 Million Tshs; these represent Medium Enterprises, with the average Current capital of 30 000 000/= Tshs and with a minimum 400 000/=Tshs and a maximum of 320 000 000/= Tshs. as for those who trade locally within the country were 2 (1.9%) had the current capital of up to 5 Million Tshs; these represent Micro Enterprises, and 103 (98.1%) had the current capital ranging from above 5 Million Tshs to 200 Million; these represent Small Enterprises and had an overall capital of 24 197 000/= Tshs, with a minimum of 700 000/=Tshs and a maximum of 75 000 000/= Tshs. This means that most of the Tanzania's enterprises who engage in agricultural trade locally within the country and in EAC cross border trade are small enterprises. This trend is a result of having low income generation capacity among the traders. Majority depend fully on the agribusiness trade as their major occupation. These also have family responsibilities as majority are also married and sustain their family with the same returns or profit they obtain, and this leads to gradual growth of their capital as most of them depend on personal saving.

Table 2: Tanzania Small and Medium Agro-Enterprises current capital

Current Capital	Exporting to EAC		Trading Within the country	
	n	%	n	%
Up to 5 mil.	13	12.4	2	1.9
Above 5 mil. to 200 mil	90	85.7	103	98.1
Above 200mil. to 800mil	1	1	0	0
Total	104	99.0	105	100

Source: Survey data (2014)

Border Used by small and medium agro-enterprises engaged in East Africa Community Cross Border Trade

The results show that 84 (80%) of the interviewed Small and Medium Agro-Enterprises (SMAEs) used Namanga border to EAC partner states is followed by 16 (15.2%) who used Holili

and 5 (4.8%) who used Mutukula border points. Namanga is the most commonly used border because of its close proximity with Arusha town where most of the SMAEs are located. It is also not far from Nairobi Market where SMAEs located in Arusha do much of their trade.

Table 3: Borders used by Small and Medium Agro-Enterprises in Cross border trade to East Africa Community partner states

Border Points	Frequency (n)	Percent
Namanga	84	80.0
Holili	16	15.2
Mutukula	5	4.8
Total	105	100.0

Source: Survey data (2014)

Results of Costs and Benefit Analysis

Costs and Benefit analysis method was used to analyze the effect of the existing East Africa Community (EAC) Non-tariff Barriers (NTBs) on Small and Medium Agro-Enterprises (SMAEs) cross border trade in Tanzania. The results of Costs and Benefit analysis are as shown on Table 18 and Table 19.

The results show that for the SMAEs exporting agricultural goods to EAC partner states, maize was found to have the greatest NPV of 1 493 742 170.68/=Tshs followed by rice 1 120 132 841.95/= Tshs and then beans at 690 569 747.07/= Tshs. This is because maize is the main staple food in the region and maize is a major source of food in the region therefore most of the farmers grow the crop since it requires short period of time to mature compared to other food crops, also its constant demand in the EAC market encourage many farmers to grow the crop for cash and for food. Moreover NPV for maize for SMAEs exporting to EAC partner states is higher than the NPV of the crop for SMAEs who trade locally within the country and particularly in the Arusha Region as results in Table 18 and Table 19 show.

However, according to Guthiga *et al.* (2012), there is the presence of maize surplus areas in Uganda and Tanzania and deficit areas in Kenya. This study observed that maize attracts maize intra-trade activities in the region as it offers good price in the market and it is convenience in the production process by Tanzania SMAEs exporting to Kenya. Therefore most of the SMAEs trade large quantities of maize as opposed to the quantities of beans and rice exported to Kenya which in turn

gives them greater profit and eventually greater Net Present value.

Rice is the second highest traded agricultural product after maize. Although there is low level of exports of agricultural products to Uganda by Tanzania’s SMAEs, given the presence of few SMAEs exporting rice to Uganda, they (SMAEs) basically enjoy higher returns obtained, especially because they (SMAEs) buy from several places at lower prices in Mwanza and Shinyanga and sell the product at higher price in Uganda. On the other hand, the NPV for SMAEs who export rice to Uganda is 1 120 132 841.95/=Tshs higher than the NPV for SMAEs who trade locally as the results in Table 18 and Table 19 show. It means that exporting rice to Uganda is more profitable than selling the product locally and this might be due to the fact that in Mwanza there is a surplus of rice as the product is brought from various neighbouring regions which make the price to go down.

Beans is another agricultural product exported to the EAC countries; despite its NPV being the lowest among the three, beans still offers higher NPV especially for those who export the product to the EAC countries as Table 18 and Table 19 show. The reasons for this is that beans is not the main food like maize, which means there is an alternative for beans such as different types of peas including pigeon peas (*Cajanus cajan*), cowpeas (*Vigna unguiculata*) and a variety of vegetables which consumers in East Africa may use as a substitute of beans.

Generally for SMAEs trading locally within the country, beans has higher NPV followed by maize and rice and the reasons could be due to the fact that at least every farmer in

Tanzania for one reason or another grows maize for food security; beans is grown but in smaller scale than is the case with maize which make the price of beans to be higher than that of maize. Moreover, rice is highly grown in Tanzania and as a result it is in abundant supply in different regions making its price to go down and eventually leading to low NPV.

Table 4: Estimated Average Costs and Benefits per week (Trip) exported to EAC partner states (n=105)

Agricultural crops and their net present values				
	Maize	Beans	Rice	
	Monetary value (Tshs)		Monetary value (Tshs)	
Costs and Benefits	Monetary value (Tshs)			
COSTS				
Quantity purchased	304.2405063	147.5769231	252.5	
Buying price(Tshs/bag, 1bag=100Kg)	51743.67089	117019.2308	56750	
Total Costs of Buying	15773601.27	17206346.15	14450000	
Labour costs to pack and unload	325696.2025	161961.5385	202500	
Transport costs/hiring a truck	2018911.392**	1209865.385**		855000**
Information costs	40405.06329	23211.53846	25000	
Accommodation and Meals	75000	75000	70000	
Travelling Costs	38000	38000	32000	
Total Costs	18271613.92	18831551.42	15634500	
BENEFITS/RETURNS				
Quantity sold (per bags, Ibag =100Kg)	304.2405063	147.5769231	252.5	
Selling price (Tshs)	94072.51899	159519.2308	84000	
Total Revenue	28780452.15	23784038.46	23925000	
Net Returns/Benefits	10,508,838.23	4,969,596.75	8,322,500	
Net Present Value (NPV)*	1 493 742170.68*	690 569747.07*	1 120 132 841.99*	

*NPV are for ten years time horizon using discount rate of 16% and their calculations for each crop are found in appendixes

Table 5: Estimated Average Costs and Benefits per week (Trip) traded locally within the country (n=105)

Agricultural crops and their net present values			
	Maize	Beans	Rice
Costs and Benefits	Monetary value (Tshs)	Monetary value (Tshs)	Monetary value (Tshs)
COSTS			
Quantity purchased	390.8809524	118.0769231	53
Buying price (Tshs / bags, 1bag=100Kg)	47849.40476	108940.5128	92000
Total Costs of Buying	18787145.83	13028051.28	5200000
Labour costs to pack and unload	390445.2381	118076.9231	186400
Transport costs/hiring a truck	1197261.905**	356564.1026**	125700
Information costs	16333.33333	10820.51282	8000
Accommodation and Meals	16333.33333	11461.53846	10000
Travelling Costs	16714.28571	11307.69231	10000
Municipal Council			121000
Total Costs	20424233.93	13536282.05	5661100
BENEFITS/RETURNS			
Quantity sold (per bags, Ibag =100Kg)	390.8809524	118.0769231	53
Selling price (Tshs)	57000	143107.6923	111200
Total Revenue	22,347,750	17,119,384.62	6,344,000
Net Returns/Benefits	254,003,722*	494,638,493.1*	74,118,331.35*
Net Present Value (NPV)*	254,003,722*	494,638,493.1*	74,118,331.35*

*NPV are for ten years time horizon using discount rate of 16% and their calculations for each crop are found in appendixes

Obstacles for Agribusiness cross border trade in East Africa Community

The study revealed that in different season based on Tanzania government food supply evaluation, the government may restrict export and affect the whole trade. However poor infrastructures such as roads from the farmers to the market pose a big problem for the smoothness of trade. According to the reported cases to TCCIA (2014) database on Non-Tariff Barriers Monitoring Mechanism transport, clearing and forwarding accounts for 24.24% of the reported NTBs. These information from TCCIA concur with the findings from this study focused on Arusha and Mwanza border points using Mutukula Border in Kagera Region whereby Small and Medium Agro-Enterprises (SMAEs) owners hire trucks to transport their agricultural goods to the EAC market particularly Kenya and Uganda and where the roads are good. The major problem in transporting the goods by road is the presence of police roadblocks. At police roadblocks, police officers stop commercial vehicles at various inter-country road blocks and at border crossings even where there is no sufficient proof that the goods being transported are of suspicious nature.

Engel *et al.*,(2013) concluded that governments in sub-Saharan Africa intervene heavily, particularly in times of rising food prices. This was particularly pronounced during the recent food crisis through non-tariff measures. Trade and agricultural policy are also becoming regionalised but there is significant difference in terms of the speed of integration and harmonization across the continent, as well as the extent to which non-state actors are incorporated into these processes. Better infrastructure and trade related services can facilitate the spatial integration of product and factor markets in both the agricultural and non-agricultural sectors.

IV. CONCLUSION AND RECOMMENDATIONS

The analysis shows that there is potential profit from trade of agricultural commodities to EAC countries by Tanzania SMAEs which is yet to be tapped. In all the comparative analyses done in this study using Cost and Benefit Analysis to compare the Net Present value of the three agricultural commodities namely maize, beans and rice traded to EAC countries and similar commodities traded locally within the country, have shown that in all three agricultural commodities, the Net Present Values for EAC Cross Border Trade were bigger than the Net Present Values of the commodities traded locally within the country. There are number of obstacles such as unstable agricultural export policy, infrastructural problems such as roads, police stops and other non-tariff-barriers that hinder the smoothness of the trade. However in supporting Agribusiness cross border trade there should be an effort with the government and other stakeholders such as EAC Secretariat, East African Business Council and ministry of Agriculture in Tanzania to lubricate the flow of information on access to finance so as SMAEs can obtain enough capital as the results show that

majority are small enterprises based on their level of capital, on the other side from the results the NPV of Maize exported to EAC countries is highest among the three crops, this suggests that there is possibility of more income if there will be proper marketing information on demand and Price of Maize.

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REFERENCES

- [1] African Union Commission (2007). African Integration Review. African Union, Addis Ababa, Ethiopia. 5pp.
- [2] Central Expenditure Evaluation Unit (2014). Guide to economic appraisal: Carrying out a cost benefit analysis. The Public Spending Code. [http://publicspendingcode.per.gov.ie/wp-content/uploads/2012/08/D03-Guide-to-economic-appraisal-CBA-16-July.pdf] site visited on 14/06/2014.
- [3] East Africa Community (2012). Status of Elimination of Non-Tariff Barriers in the East Africa Community. East Africa Community Secretariat, Arusha, Tanzania. 50pp.
- [4] Engel, J., Jouanjean, M., and Awal, A.(2013). The history, impact and political economy of barriers to food trade in sub-Saharan Africa: an analytical review. Barriers to food trade in sub-Saharan Africa. ODI Report.54pp.
- [5] European Union (2013). How investment in the African Agri-food sector can help support: Seminar co-organised with DG Development and Cooperation Europe Aid development Agribusiness and Development: April 10, 2013. Charlemagne, Brussels. 16pp
- [6] Guthiga, P., Wambugu, S., Ogada, M., Massawe, S., Karugia, J., Katjuongua, H. and Oehmke, J. F. (2012). East Africa Maize Trade Impacts. A Synthesis of Findings Policy Brief. United States Agency for International Development, East Africa. 4pp.
- [7] Integrated Business Survey (2010). Tanzania Mainland Distributive Trade Analytical. National Bureau of Statistics. Ministry of Finance, Dar es Salaam, Tanzania. 189pp.
- [8] Tanzania Chamber of Commerce Industry and Agriculture (2013). Best Small Business Project The NTBS SMS and Online Reporting and Monitoring Mechanism. Application for Best Small Business Project World Chambers Competition, Dar es Salaam, Tanzania. 10pp.
- [9] Tongeren, F., Beghin, J. and Marette, S. (2009). A Cost-Benefit Framework for the Assessment of Non-Tariff Measures in Agro-Food Trade. Working Papers No. 21. Food Agriculture and Fisheries, Paris. 71pp.

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