Analysis of marketing channels, costs and margins in West Africa: The case of Benin and Togo

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Abstract

Many of the West African government rice initiatives focus almost exclusively on production to the exclusion of complementary initiatives in processing and marketing, which are so important to determining domestic rice prices. Marketing being a great bridge between farmers and consumers, shift for policies to a more market-based approach to food security in which competitive markets ensure the supply of domestic rice at the most competitive consumer price is necessary. So this study is undertaken to make a comparative analysis of rice marketing channel in Benin as well as in Togo to identify bottlenecks in marketing domestic rice with regard to the imported rice in order to provide market-based information to policy makers. To achieve this goal, it used tools including descriptive statistic, Multiple Correspondence Analysis (MCA) and indicators of market Structure-Conduct-performance such as marketing costs and margins, price spread and Gini coefficient. Market data used covered 177 and 194 respondents in Benin and in Togo respectively. The results showed that there exist three types of channels: channel of locally produced rice, channel of imported rice and that of both local and imported rice in Benin and in Togo as well. It revealed that domestic rice marketing margins is higher than that of imported rice, but at the same time scarcer than imported rice which is more patronized in every segment of the rice market in each country mostly in urban areas. Also, tending to zero than to unity, Gini coefficients indicate concentration in rice market. The concentration is more pronounced as we move from wholesalers to retailers showing imperfect information in rice market. So support of financial institutions to rice sellers as well as the improvement of market information is of immense important.

Keywords: Gini coefficient, SCP, market margins, marketing channel, middlmen.

1. Introduction:

Like many other sub-regions of African continent, West African rice market is highly dependent on import as well as its countries have great potential to ensure sufficient rice production to cover its demand. The experience of 2009 brought into obviousness this dependency. The continent imported one-third of what was available on the world market, costing an estimated US$ 5 billion, (AfricaRice, 2011). Already, in 2008, the rice crisis that seriously hit the continent and deepened food insecurity brought governments and donors to react. Many agricultural policy measures focused on promoting of domestic rice production strategies. In this respect, the ñEmergency Rice Initiative for Africaò (ERIA) and many other projects are set under AfricaRice, a CGIAR programme having rice mandate in Africa, (USAID, 2009:7). In the line of GRiSPôs theme four as stated in its proposal which deals with technologies and business models to improve rice postharvest practices, processing, and marketing, AfricaRice postulates that enhancing local rice production, processing and marketing will also mean that Africaôs cities will have access to affordable food. Also rice production will create employment along the value chain and in related sectors, (GRiSP, 2010:113; AfricaRice, 2011:1). However, many West African government rice initiatives focus almost exclusively on production to the exclusion of complementary initiatives in processing and marketing, which are so important to determining domestic rice prices. A study conducted on rice value chain over five West African countries revealed that margins appear to be sufficiently high to maintain price competitiveness even after taking into account the costs of necessary quality improvements, (USAID, op cit.:32). Still, one issue is to see whether a marketing channel generates margins another one is to get insight on how margins are shared among stakeholders within the channel. That finding raises many questions. Are really margins high enough to make domestic rice competitive? What are the different marketing channels that function on the rice market? How are the marketing margins shared among different stakeholders within a channel and according to each type of channel?

Many studies have been done on marketing channel analysis and some have addressed margins analysis but studies alike taking into account identification of different types of channel and how margins are shared within them are seldom conducted. Particularly in rice domain, such studies have received very little attention although they provide a comprehensive understanding on bottlenecks within a marketing channel and how to correct them for the achievement of food security and social welfare goal.

This study aims at making a comparative analysis of rice marketing channel in Benin and in Togo as well to identity bottlenecks in marketing domestic rice with regard to the imported.

Specifically, it will

- ✓ Analyze marketing cost along the whole channel for each country and compare them,
- ✓ Identify different type of channel that exist in rice market channel in each country,
- ✓ Compute marketing margins for each type of channel in each country,
- ✓ Analyze market concentration at every segment of each marketing channel through Gini coefficient to see where sale revenues are accrued.

Theoretically, the analysis of marketing costs and margins would reveal how efficient pricing in domestic markets is, and gives an indication of the importance of transaction costs facing traders, farmers and intermediaries (middlemen) and help in identifying and solving bottleneck thus assist in reducing marketing costs, (SIFSIA, 2011:18). So many researches were conducted on issue of marketing costs and margins analysis. Kusum et al., (2004) in a study on an empirical analysis of the determinants of retail Margin on national brands and store brands, using a model of multilinear regression, found that store-brand share effect influences positively the marketing margins. Bashir et al. (2013:201) have carried out marketing margin and transaction cost analysis in pearl millet market supply and their findings revealed that despite the highest marketing margin incurred by the wholesalers, they also incur the highest profit margin and that transportation cost was the highest transaction cost. Also, Ram et al. (2010) conducted cost and margins analysis study on mushroom production on different categories of marketing channel. Using Simple tabular, benefit-cost, break-even level, price spread and marketing efficiency analysis, he found out that there exist four mushroom marketing channels and that producer share in consumer rupee is highest in the shortest channel than the other ones. They also pointed out that the longest channel is the least efficient due to the existence of more middlemen. In the same line, Dia et al**.** (2013:177) using Gini coefficient found out that the structure of honey market in Nigeria is inefficient. As far as rice commodity is concerned, USAID (2009:32) has conducted a study across five West African countries viz. Ghana, Liberia, Mali, Nigeria and Senegal, and found out that rice marketing margins appear to be sufficiently high to maintain price competitiveness even after taking into account the costs of necessary quality improvements.

Having an over view on those studies, there is no wonder to say that cost margins analysis in rice commodity has received very little attention. This study intends to achieve this goal comparing marketing cost and margins and market concentration in Benin and in Togo.

The remaining part of the paper is organized as follows. Section 2 describes analytical tools used. Section 3 presents socio-economic characteristics and the explanatory analysis. Section 4 discusses the performance analysis using market Structure-Conduct-Performance (SCP) outputs. Concluding remarks are presented in section 5.

2. Data and materials

2.1. Data

The data used are survey cross-sectional market data collected on rice traders from major rice selling markets in Benin and Togo. Including 177 and 194 rice traders in Benin and in Togo respectively, the survey was conducted jointly by Africa Rice Center and the *Institut National des Recherches Agricoles du Benin (INRAB)* and the Institut Togolais de Recherche Agronomique (ITRA) in collaboration with the National Agricultural Statistics Systems (NASS). It adopted a two-stage stratified sampling method to ensure a fair representation of all rice selling regions in Benin and in Togo.

2.2. Analytical technique

The tools used in analyzing the data of this paper include descriptive statistic, Multiple Correspondence Analysis (MCA) and market Structure-Conduct-performance indicators such as marketing margins and costs, price spread and Gini coefficient. Descriptive statistic is used to describe socio-economic characteristics of rice traders. MCA helped to get an overview on factors which are more relevant to identify different types of marketing channel and the formation of marketing segment. Marketing margins and costs are used to analyze the performance of the market while Gini coefficient is estimated for each segment of the market to analyze their concentration.

2.2.1. Multiple correspondence analyses.

The multiple correspondence analysis (MCA) is defined as a potentially useful exploratory data analysis technique that allows identification of stable patterns in the data (Kaciak and Louviere, 1990). This technique was used to conduct preliminary analyses to better understand the identification of types of marketing channel and the formation of marketing segments through the similarity of characteristics of rice marketers in terms of criteria listed in table1. Normally, it consists of representing individuals or points (here rice marketers) in a multidimensional space in such a way as to get an overview of the positions of individuals. However, it is difficult to observe points in a space with more than three dimensions. That is why MCA was used to reduce multidimensional space in a 3 orthogonal axes also termed as factors which maximize the information content (inertia). These axes define a 2×2 factorial planes and are associated with eigenvalues. The eigenvalues are defined as the difference between the total number of modalities (*K*) of the variables and the total number of variables (*Q*) themselves divided by the total number of variables, [*(Kï Q)/Q*].

Moreover, each modality of variables that characterizes rice traders is represented by a point. On the factor plane in MCA, the similarity between column-points means that those points (projected point) that are images of individuals represent individuals that have similar or the same characteristics. Some criteria such as contribution of a modality to the total inertia borne by an axis (absolute contribution), good position of a modality on an axis (relative contribution) and appropriate modalities to use for the similarity interpretation of individuals on a giving graphical display (test-value) are necessary. For instance, the higher the test-value of a modality on an axis, the more interesting is this modality to be used for the interpretation of that axis. Variables used in the MCA analysis for both Benin and Togo are described in the table1.

Table 1 Description of variables used for MCA

Type of variables	Variable	Definition of variable
Active variables	Sex	sex of the trader
	MA	Main activity of the trader
	EL	Educational Level of the trader
	RSE	Rice Selling Experience (years)
	SFC	Subsidiary of Foreign Companies

	TC	Trader's Category
	TRS	Type of Rice Sold
	TCR	Trade and Companies Register
Illustrative variables	OS	Origin of the Sourcing
	IC	Initial Capital

2.2.2 Market Structure-Conduct-Performanceôs indicators.

2.2.2.1 Gini coefficient.

Gini coefficient was developed by the Italian statistician and sociologist Corrado Gini.
It is a measure of inequality of a distribution, and is defined as a ratio with values between 0 and 1. It has been used to access inequality among peoples can be well understood with the figure1.

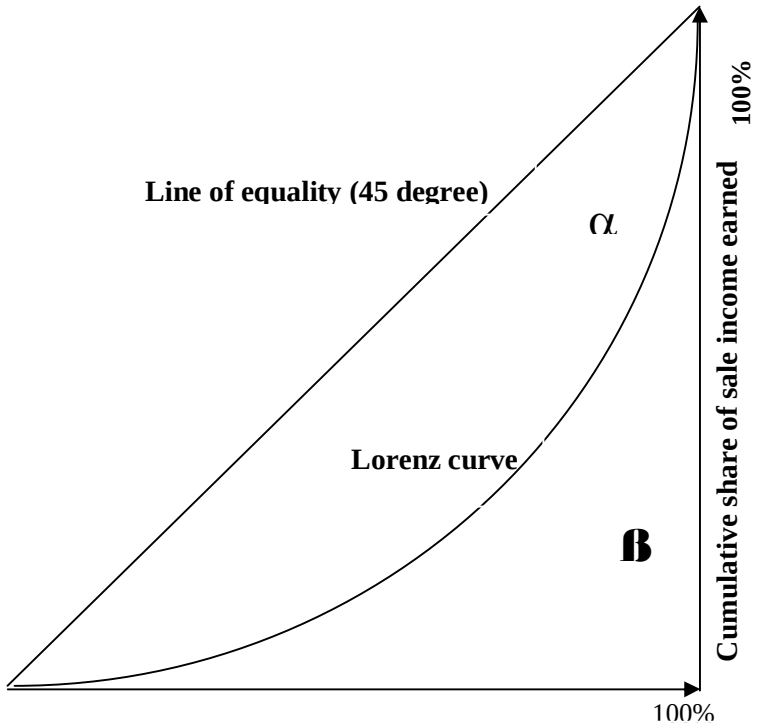

Figure1: figure showing Lorenz curve and Gini coefficient analysis.

As it can be seen, the Gini coefficient is defined as a ratio of the areas on the Lorenz curve diagram. If the area between the line of perfect equality and Lorenz curve is α, and the area under the Lorenz curve is ß, then the Gini coefficient is $\frac{\alpha}{\alpha+\beta}$. Since $\alpha+\beta=0.5$, the Gini coefficient, G = 2α = 1-2β. If the Lorenz curve is represented by the function Y = f(X), the value of β can be found with integration and:

$$G = 1 - 2\int_0^1 f(x)dx \qquad (1)$$

However, in case the Lorenz curve is not known and only value at certain intervals are given, Gini coefficient can be approximated through interpolating missing values of the Lorenz curve by using a trapezoid way. It can then be computed as followed:

$$G = 1 - \sum_{k=1}^{n} (x_k - x_{k-1})(y_k + y_{k-1}) \qquad (2)$$

Where (x_k, y_k) are the known points of the Lorenz curve, with the x_k indexed in increasing order $(x_{k-1} < x_k)$ and x_k is the cumulated proportion of the population variable, for $k = 0,....., n,$ with $x_0 = 0, \mathrm{x_n} = 1$; y_k is the cumulated proportion of the income variable, for $k = 0,....., n,$ with $y_0 = 0, \mathrm{y_n} = 1$

To put it simple, let be $x_k - x_{k-1} = X$ and $y_k + y_{k-1} = Y$ then the equation (2) becomes:

$$G = 1 - \sum_{k=1}^{n} X_k Y_k \qquad (3)$$

The formula (3) is used to generate Gini coefficient to see how concentrated are rice markets in each segment of marketing channel. Like said above, it ranges from 0 to 1. When its value is close to 0, it indicates that the market is not concentrated and information is perfect, that means that selling income is fairly distributed and when its value is close to 1, it means the market is concentrated and that the selling income is unequally distributed. The extreme value of 0 means perfectly equal distribution, when 1 means perfectly unequal distribution.

2.2.2.2 Price spread, net margins and efficiency rate

Price spread

Price spread is the difference between producerôs price and retailer price called also farm-retail price spread or marketing margins (SIFSIA, 2011). But in this study, due to the nature of data that do not allow us to get information about all or almost all marketing actors from producer to retailer in a given channel, we computed price spread for actors of each segment of the marketing channel namely wholesalers, semi-wholesaler and retailer. It is computed as followed:

$$\text{Price } Spread = SP - PP$$

Where SP is selling price and PP is purchasing price. It indicates how high are different costs incurred by a given segmentôs actors including net margin accruing to them.

Net margin:

It is the amount that accrues to a rice seller as profit. It is computed as followed:

$$NM = SP - PP - total \text{ costs} = prices \text{ spread} - \text{total costs}$$

Where MN is net margins,

Total cost is all costs incurred by the rice seller from the stage of purchasing rice commodity up to the stage of its selling. Clearly, it includes cost such as: transport cost, milling fee,

storage fee, physical losses, place renting fee, family labor cost, hired labor cost, electricity and telephone cost, packaging cost, fuel for vehicle, vehicle maintenance, loading and unloading, taxes of all kind, and others related costs.

3. Socio-economic characteristics and Multiple Correspondence Analysis.

3.1 Socio-demographic and economic characteristics

The table2 presents socio-demographic and economic characteristics for rice traders according to the different types of channel namely sellers of locally produced rice, sellers of imported rice and that of locally produced and imported rice. It shows that over 177 surveyed respondents in Benin, 13.22% are sellers of only local rice (LR), 60.34% are sellers of only imported rice (IR) and 26.44% are sellers of both local and imported rice (L&IR) while over 194 surveyed respondents in Togo 25% are sellers of only local rice (LR), 45.65% are sellers of only imported rice (IR) and 29.35% are sellers of both local and imported rice (L&IR). It means that imported rice is the most patronized in both the two countries. In Benin, 18.97% of rice sellers are male against 81.03% that represent female while in Togo 40.76% of rice sellers are male against 59.24 who are female. This show that rice commerce, especially imported rice, is almost gender balanced activity in Togo. It is worth noting that domestic rice commerce is more performed by female whether in Benin or in Togo, the gap being more pronounced in Benin than in Togo. Whether in Togo or in Benin, the major part of rice traders are of age ranging from 30 to 50 years old. As far as experience in rice commerce as well as in general commerce is concerned, the major part of traders gets experience ranging from 0 to 10 years. In Togo the range of experience from 0 to 5 years has the higher percentage (39.67% for rice commerce and 36.46% for general commerce) while range of experience from 5 to 10 years has the higher percentage in Benin (30.95% for rice commerce and 25.88% for general commerce). It means that in Togo traders are shifting towards rice commerce mostly domestic rice commerce while in Benin rice traders are mostly still selling imported rice. For educational level, the major part of rice traders in Benin did not at all attend school (51.45%) followed by those who have primary level (30.06%) while in Togo 32.07% of them have primary level, 29.35% of them have secondary school level and 23.91% of them did not at all attend school. Whether in Togo or in Benin rice selling activity is not well organized in regular enterprise. In fact, only 17.06 % and 32.93% are traders who have registered their business in trade and commerce register (TCR) in Benin and in Togo respectively while the remaining part of traders in each country carries out their activity in non registered enterprise. It is worth to note that those who succeed in registering in (TCR) are traders of imported rice channel. Any of those who sell domestic rice did not register. In the same respect, only 2.94% and 1.2% of rice selling enterprises are subsidiaries of foreign companies (SFC) in Benin and in Togo respectively and carry out their activity in imported rice channel. As far as category of rice traders is concerned, the largest part of surveyed rice traders are retailers whether in Togo or in Benin (57.47% in Benin and 56.52% in Togo). It is important to note that the sale in whole is mostly practiced in imported rice channel. Detail description of the distribution according to each marketing channel can be observed in the table2.

Table2: Socio-demographic and economic characteristics according to different channels

Types of channel	**LR**		**I R**		**L & IR**		**Total (row%)**	
Carateristics	Ben	Tog	Ben	Tog	Ben	Tog	Ben	Tog
Distribution in Channel (row%)								
Benin	13.22		60.34		26.44		100	
Togo		25.00		45.65		29.35		100
Gender (column%)								
Male	0	4.35	30.48	54.76	2.17	50	**18.97**	**40.76**
Female	100	95.65	69.52	45.24	97.83	50	**81.03**	**59.24**
Age (column%)								
[19; 30[	13.04	10.87	4.81	16.87	6.52	15.09	**6.36**	**14.84**
[30;40[	30.43	34.78	36.54	32.53	26.09	39.62	**32.95**	**35.16**
[40;50[	43.48	39.13	39.42	37.35	43.48	28.3	**41.04**	**35.16**
>50	13.04	15.22	19.23	13.25	23.91	16.98	**19.65**	**14.84**
Rice trade experience (column%)								
[0;5[	17.39	32.61	21.57	45.24	20.93	37.04	**20.83**	**39.67**
[5;10[	30.43	28.26	29.41	17.86	34.88	29.63	**30.95**	**23.91**
[10;15[	39.13	17.39	22.55	20.24	20.93	12.96	**24.4**	**17.39**
[15;20[	4.35	13.04	9.8	5.95	6.98	5.56	**8.33**	**7.61**
[20;25[	4.35	2.17	13.73	9.52	11.63	12.96	**11.9**	**8.7**
>25	4.35	6.52	2.94	1.19	4.65	1.85	**3.57**	**2.72**
general trade experience (column%)								
[0;5[	23.81	27.27	12.38	44.05	13.64	32.08	**14.12**	**36.46**
[5;10[	23.81	34.09	25.71	15.48	27.27	28.3	**25.88**	**23.76**
[10;15[	28.57	18.18	21.9	20.24	20.45	11.32	**22.35**	**17.13**
[15;20[	14.29	11.36	15.24	5.95	18.18	11.32	**15.88**	**8.84**
[20;25[	4.76	2.27	15.24	10.71	13.64	15.09	**13.53**	**9.94**
>25	4.76	6.82	9.52	3.57	6.82	1.89	**8.24**	**3.87**
Educational level (column%)								
primary school	13.04	28.26	33.65	33.33	30.43	33.33	**30.06**	**32.07**
Secondary School	13.04	8.7	17.31	34.52	6.52	38.89	**13.87**	**29.35**
Tertiary	0	0	0.96	10.71	0	9.26	**0.58**	**7.61**
None	73.91	56.52	43.27	15.48	58.7	9.26	**51.45**	**23.91**
Coranic		4.35		1.19		3.7		**2.72**
Literate	0	0	4.81	0	4.35	1.85	**4.05**	**0.54**
Registration in TCR (column%)								
No	100	100	74.51	61.54	93.48	50.98	**82.94**	**67.07**
Yes	0	0	25.49	38.46	6.52	49.02	**17.06**	**32.93**
Main activity (column%)								
general Trade	4.35	8.89	65.71	83.13	26.09	83.02	**47.13**	**64.64**
Agri-products trade	73.91	77.78	34.29	10.84	73.91	13.21	**50**	**28.18**
Agriculture	17.39	8.89	0	2.41	0	0	**2.3**	**3.31**
Salary service		0		3.61		1.89		**2.21**
House shore		4.44		0		1.89		**1.66**
Other	4.35		0		0		**0.57**	
Subsidiary of FC (column%)								
no	100	100	95.1	97.44	100	100	**97.06**	**98.8**
Yes	0	0	4.9	2.56	0	0	**2.94**	**1.2**
Trader's category (column%)								
Retailer	78.26	78.26	47.62	47.62	69.57	51.85	**57.47**	**56.52**
SWS	21.74	21.74	29.52	35.71	23.91	42.59	**27.01**	**34.24**
WS	0	0	22.86	16.67	6.52	5.56	**15.52**	**9.24**

LR: locally produced rice, IR: imported rice, L&IR: locally produced and imported rice

3.2. Map of characteristics of rice traders in Benin and in Togo.

3.2.1 Map of Benin.

The figure 1 represents the map of rice tradersô characteristics in Benin. It shows that the first factor axis explains 17.61% of the total variance, while the second factor axis explains 10.19% of the total variance. The two factor axes explain a total of 27.8%. In the factor plane, the first axis is determined by the variable named main activity whose modalities are two (commerce of agricultural product *CAP* and general commerce *GC*). Those two modalities are kept after ventilating modalities of low seize compared to the cleaning threshold used (5%). In positive value is the modality GC (contribution=14.2, test-value=10.6, distance=1.11) while in negative value is the modality CAP (contribution=12.8, test-value=-9.9, distance=0.9). The second axis is determined by the variable traderôs category which has three modalities (wholesaler, semi-wholesaler and retailer). In positive value is the modalities semi-wholesaler (contribution=7.5, test-value=5.1, distance=2.69) and retailer (contribution=0.0, test-value=0.6, distance=0.75) while in the negative value is the modality wholesaler (contribution=15.4, test-value=-6.1, distance=5.32).

So, the map reveals two subgroups. On one hand is the subgroup of only imported rice sellers led by the modality general commerce and on the other hand, is the subgroup of only locally produced rice and both locally produced and imported rice sellers. The first subgroup gathers rice sellers who have registered their business in trade and companies register. They got their initial capital by loan or sel-financing and source from wholesalers. They have among them enterprises which are subsidiaries of foreign companies and they have attended secondary school as educational level. Their experience in commerce ranges from 10 to 25 years. While the second subgroup gathers rice sellers who sell locally produced rice and both locally produced and imported rice and do not registered their business in trade and companies register. Any of them are not subsidiaries of foreign companies. They have no level as education except some of them who are literate. They source rice from growers, collector parboilers and primary paddy collectors. The larger proportion of them is female. The experience in rice commerce ranges from 0 to 10 for some of them and is over 25 years for other. It means that among those who sell locally produced rice, there are many new traders. This situation can be justified by the fact that domestic rice production has been increased in recent time.

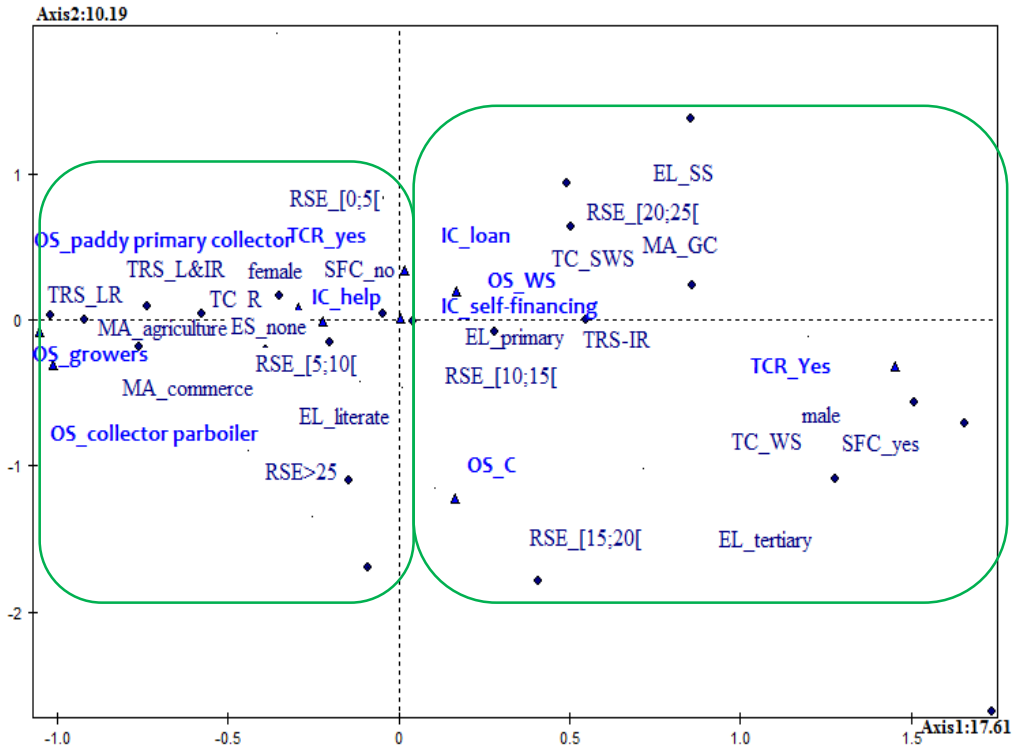

Figure2: Characteristic map of rice traders in Benin

3.2.1 Map of Togo.

The figure 2 represents the map of rice tradersô characteristics in Togo. It shows that the first factor axis explains 15.74% of the total variance, while the second factor axis explains 9.44% of the total variance. The two factor axes explain a total of 25.18%. In the factor plane, the first axis is determined by the variable named *type of rice sold* whose modalities are three (local rice, imported rice and local and imported rice). In positive value is the modality local rice (contribution=23.5, test-value=11.8, distance=3.22) while in the negative value is the modalities imported rice (contribution=5.3, test-value=-6.5, distance=1.31) and local and imported rice (contribution=2.6, test-value=-4, distance=2.59). The second axis is determined by the variable *traderôs category* which has three modalities (wholesaler, semi-wholesaler and retailer). In positive value is the modalities wholesaler (contribution=17.1, test-value=7.2, distance=9.21) and retailer (contribution=3.1, test-value=4.4, distance=0.76) while in the negative value is the modality semi-wholesaler (contribution=20.4, test-value=-9.2, distance=1.98).

This map of Togo reveals two subgroups. On one side is the subgroup that gathers traders who sell local rice led by modality local (LR) and on another side is the subgroup that gathers traders from which some sell imported rice and other sell both local and imported rice. This subgroup is led by the modality imported rice (IR). In the first subgroup are traders who have agriculture, commerce of agricultural products or house shore as main activity. They source rice they sell from growers, collector parboilers, primary paddy collectors and from collectors. They do not register their business in trade and companies register and any of them are not

subsidiary of foreign companies. They got their initial capital by loan, and by self-financing. The larger part of them is female. They did not attend school at all and some of them are literate. In the second subgroup, there are traders who have general commerce, and salary employment as main activity. They source rice they sell from wholesalers, and the majority of them are male. Some of them have attended school up to secondary school, or tertiary and other have a coranic level. They got their initial capital by help some of them perform in a regular business. As a mater in fact, some of them have registered their business in trade and companies register. Also some of them are subsidiaries of foreign companies.

It is worth to note that, contrary to what is observed on the map of Benin, the rice sellersô experience in commerce as displayed on the map of Togo is equally distributed. The imported rice sellers have experience as much as have those selling local rice. It is noticed that retailers are associated with local rice or local and imported rice while wholesalers are associated with the imported rice whether on the map of Benin or of Togo. This can be explained by the fact that selling in whole is often performed in imported rice channel than that of local rice channel. The local rice is then sold in semi-whole or in retail. This confirms what was observed in the socio-demographic and economic table, the percentage of wholesalers in local rice channel in Benin and Togo is zero and in both countries, the largest proportion is observed with retailers (78.26% for both Benin and Togo).

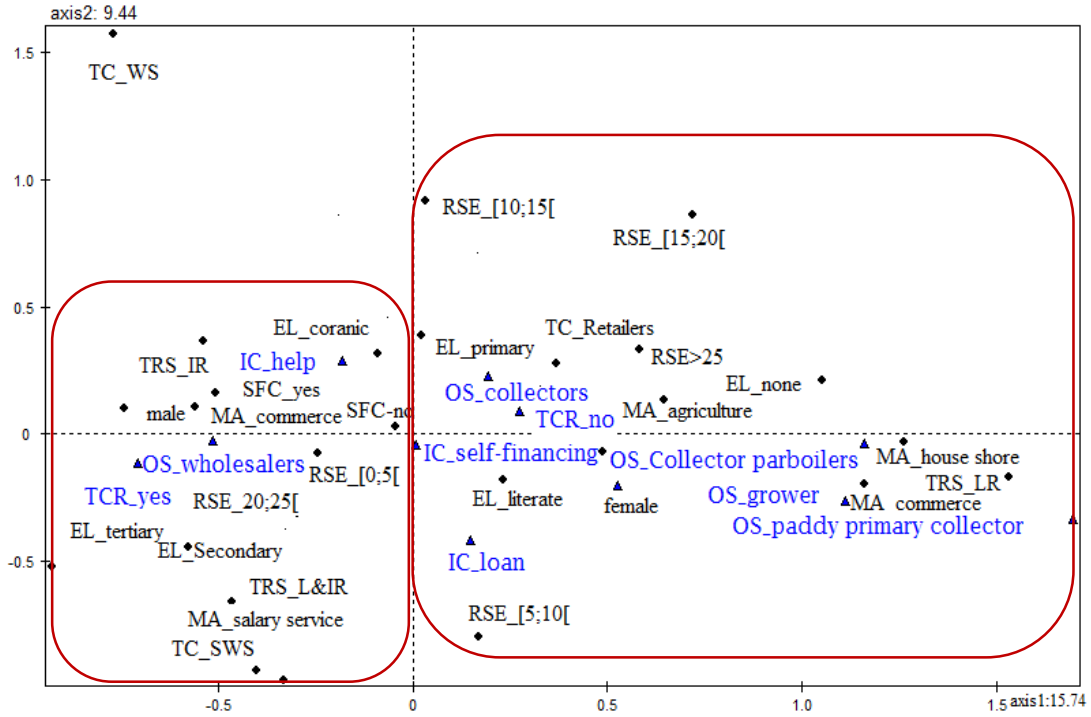

Figure3: Characteristic map of rice traders in Togo

4. Gini coefficient, Marketing costs and margins.

4.1. Gini coefficients.

The table 3 presents Gini coefficient computed for each marketing segment in every channel in Benin and in Togo. It revealed that sale revenues among surveyed traders are unequally distributed. It differs from channel and from each marketing segment as well as from countries. Taken as whole, the table indicates that Gini coefficients tend to unity than zero and that market concentration becomes higher as we move from wholesalers to retailers. But a closer look at within-channel differentiation shows that in imported rice channel, the highest concentration is observed with semi-wholesalers while in the local rice channel the higher concentration is observed with retailers in Benin and in Togo as well. The same remark is observed in the local and imported rice channel. In Togo, the concentration in retailersô segment is higher in local rice channel than that of imported rice. While in Benin, the opposite situation is observed. As observed on the MCA map above, this situation may be justified by the presence of financial discrimination such as: non access to loan, irregularity in help and differences in initial wealth since traders got their initial capital by loan, self-financing and by help. For instance, those who sell in retail local rice in Benin do not have access to loan while their homologues in Togo have.

Tableau3: Gini coefficients of each market segment according to each channel

Channels	LR		IR		L&IR		**Total**	
Countries	Ben	Tog	Ben	Tog	Ben	Tog	**Ben**	**Tog**
WS	-	-	0.605	0.584	0.667	0.667	**0.636**	**0.626**
SWS	0.590	0.500	0.822	0.865	0.694	0.707	**0.702**	**0.691**
R	0.671	0.841	0.793	0.714	0.766	0.746	**0.743**	**0.767**

WS: wholesaler; SWS: semi-wholesaler; R: retailer

4.1. Marketing costs and margins.

The tables 4 and 5 describe marketing costs and margins for surveyed traders in Benin and in Togo for one kilogram of rice sold. Its shows each marketing item cost and price spread as well as marketing margins for each type of channel in Benin and in Togo. It revealed that marketing total costs are higher in local rice channel and in both local and imported rice than in imported rice channel. The highness is due to the milling fee and transport costs. It also revealed that price spread in local rice channel is larger than that in imported rice channel. That situation makes the local rice more profitable than the imported one in Benin and in Togo as well except retailers of imported rice channel. This result confirms the finding of USAID (op cit.) that reported that rice marketing margins appear to be sufficiently high to maintain price competitiveness even after taking into account the costs[1] of necessary quality improvements.

[1] It is worth noting that there are some costs that lacked in this case study because of the data. Costs such as taxes of all kind, opportunity cost of family labour, etc are not taken into account.

Table4: marketing costs and margins in Benin

Items	LR			IR			L & IR				
	SWS	R		WS	SWS	R	WS	SWS		R	
	P	P	No P				No P	P	No P	P	No P
Milling fee	19.2	19.2						19.2		19.2	
Transport	7.34	4.69	11.90	17.08	6.81	9.48	8.13	9.09	6.31	10.94	9.03
Handling and storage	0.00	0.00	0.00	0.00	1.06	0.04	0.00	0.00	0.00	0.00	0.00
Market Information	0.60	0.00	1.49	2.16	1.68	0.67	14.96	23.45	0.88	6.52	1.38
Total Costs	**27.14**	**23.89**	**13.39**	**19.23**	**9.55**	**10.19**	**23.09**	**51.74**	**7.19**	**36.65**	**10.41**
Price spread	**115.51**	**82.32**	**63.63**	**39.18**	**49.76**	**96.35**	**50.89**	**90.12**	**43.97**	**99.23**	**75.31**
Net margins	**88.37**	**58.43**	**50.25**	**19.94**	**40.20**	**86.16**	**27.80**	**38.38**	**36.78**	**62.58**	**64.90**

Table5: marketing costs and margins in Togo

Items	LR				IR			L & IR			
	SWS		R		WS	SWS	R	WS	SWS	R	
	P	No P	P	No P				P	No P	P	No P
milling fee	25.00		25.00							25.00	
transport	11.07	8.81	8.65	11.54	10.63	11.38	6.58	13.06	10.45	5.89	6.22
Storage	2.48	1.33	1.46	10.67	1.68	0.58	0.30	1.67	1.66	0.63	0.16
Handling & Storage	0.00	1.33	0.19	0.28	0.34	0.41	1.44	0.00	0.24	1.09	1.02
Packaging	0.36	1.50	1.39		1.32	3.07	0.10	0.00	0.39	1.46	0.42
Caretaking	2.04					0.00	0.00		0.00	0.00	0.00
Market information								0.42			
Total Costs	**40.95**	**12.98**	**36.68**	**22.49**	**13.98**	**15.43**	**8.42**	**15.14**	**12.74**	**34.07**	**7.81**
Price spread	**112.21**	**85.55**	**103.75**	**62.55**	**47.45**	**48.56**	**82.82**	**62.13**	**41.17**	**68.30**	**67.21**
Net margins	**71.26**	**72.58**	**67.07**	**40.06**	**33.47**	**33.13**	**74.40**	**46.99**	**28.43**	**34.23**	**59.40**

5. **Conclusions**.

Marketing being a great bridge between farmers and consumers, shift for policies to a more market-based approach to food security in which competitive markets ensure the supply of domestic rice at the most competitive consumer price is necessary. This study is undertaken to make a comparative analysis of rice marketing channel in Benin and in Togo as well to identify bottlenecks in marketing domestic rice with regard to the imported one in order to provide market-based information to policy makers. This aim was achieved by using tools including descriptive statistic, Multiple Correspondence Analysis (MCA) and market Structure-Conduct-performance indicators such as marketing costs and margins, price spread and Gini coefficient.

The results from both MCA and descriptive statistics showed that in Benin and in Togo as well, there exist three types of channels, channel of locally produced rice, channel of imported rice and that of both local and imported rice. More specifically, the map of MCA displayed two subgroups of rice traders in the both countries. In Benin, the first group is constituted by those who sell imported rice. They got their initial capital by loan or self-financing and source from wholesalers. Some of them register their business in trade and companies register and are subsidiaries of foreign companies. The larger proportion of them is male. While the second subgroup, gathers rice sellers who sell locally produced rice and both locally produced and imported rice and do not registered their business in trade and companies register. Any of them are not subsidiaries of foreign companies. They source rice from growers, collector parboilers and primary paddy collectors. The larger proportion of them is female.

In Togo, the first subgroup gathers traders who sell locally produced rice and the second one gathers traders of imported rice. In opposite to the second subgroup, the first subgroup is constituted of traders who got their initial capital by loan or self-financing, the larger proportion of them are female. Their businesses are not registered in trade and companies register, and they are not also subsidiaries of foreign companies.

Gini coefficients revealed that sale revenues are unequally distributed and differ from channel and from each marketing segment as well as from countries. Taken as whole, coefficients tend to unity than zero indicating concentration in rice market. Especially, they revealed that concentration becomes higher as we move from wholesalers to retailers in every marketing segment and in the both countries. As for costs and margins, the analysis showed that marketing total costs are higher in local rice channel and both local and imported rice than in imported rice channel and that price spread in local rice channel is larger than that in imported rice channel. This makes the local rice more profitable than the imported one in Benin and in Togo as well except retailers of imported rice channel.

In view of those findings, we suggested the creation of a financially incentive environment to provide loan to domestic rice traders. Also improving market information is of immense importance. Finally, since the marketing margins of domestic rice is higher than that of imported and the imported rice is the most patronized, there is the need to improve the quality

of domestic rice and design good packaging material to make it attractive and competitive compared to the imported rice.

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