

# Analysis of Shared Value Added in the Poultry Sector: Case of the City of Yaounde

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## Abstract

The purpose of this paper is to estimate and analyze the repartition of the added value between the agents of the poultry chain in Yaoundé. To achieve this, we have used the analysis of global value chain and governance typology used by *Gereffi and al* and the New Institutional Economy of Williamson. Our studies were based on an internship at Interprofession Avicole du Cameroun (IPAVIC) where we did interview with the actors involved in that sector. The economic evaluation of the generated added value part by every actor of the poultry sector has been done by two values chains (broiler and eggs of consumption) selected. The theories used in this research helped us to study the behaviour of the agents including the coordination method that ruled their transactions. As a result, we found that the processing and production segments have the margins and drive the respective value chains. It has also been shown that some mode of coordination of transactions between actors of the sector have a significant influence on the distribution of the value added in the poultry sector.

**Keywords:** value added, chain, Global chain of value, governance typology, New Institutional Economy.

**JEL Classification:** G21, G33, G32, C13, C58.

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## I. Introduction

Chicken meat is the most important component of the poultry contribution to the meat diet, providing 4kg/inhabitant/year (Teleu and Ngatchou, 2006), ie 17% of the total 13.07 kg of consumption. annual meat per capita (ACDIC, 2005). The poultry sector plays a very important role in the Cameroonian economy and in improving the living conditions of the populations by providing income to the households through the marketing activity of the sale of chicken. At the macroeconomic level, the poultry (broiler) flock is estimated at a production of 50,000,000 head (broiler) and 1,350,000,000 eggs [IPAVIC, 2013] in the modern sector and more than 25 000 000 heads in the traditional system [MINEPIA (3), 2009]. With more than 320,000 jobs created in the sector, it covers 14% of animal protein requirements. Chicken meat therefore occupies an important place in the diet of Cameroonians. Singularly used for ceremonies (festivals, weddings, funerals), a few years ago, chicken meat has become progressively a banal commodity in the same way as that of beef. The increase in annual per capita consumption has increased from 2 kg in 1984 to 4 kg in 2005 (Teleu and Ngatchou, 2006). An annual increase in consumption is correlated with an increase in the population. For a total contribution estimated at nearly 3% of GDP (4) [PACA (5), 2013], the poultry meat sector does not represent a pillar of the Cameroonian economy. However, it remains a component of food security, although there is a deficit of 40,000 tons in 2009 (MINEPIA, 2009) and a significant source of agricultural income. The sector generates an annual net profit estimated at around 15 billion CFA Francs. From an economic point of view, the functioning of the poultry market raises the question of the distribution of added value between the downstream actors of the productive link according to the mode of marketing of poultry products in our markets which is itself very controversial. In fact, it is the analysis of the economic performance of this type of market, the determination of the surplus of consumers and producers, and the institutional mechanisms that can support how the organization methods of the sector impact the distribution of value added. Most analyzes will use the tools of the industrial economy, Gereffi et al.'S (1994, 2005) value chain analysis, microeconomics and the new institutional economy. To achieve the desired results, we have the following two main objectives: evaluate the percentage of value added between each segment of the industry; evaluate the link between the coordination modes (arrangements) of the various actors and the added values generated in the sector.

## II. Theoretical frame

This section presents the context for value-added sharing analysis, the conceptual framework and theories mobilized.

### II.1. Context

For nearly a decade, in the wake of the ban on the importation of frozen chickens in Cameroon, we are witnessing a revival of activities in the poultry sector of the country with several new actors who have integrated it. As the sector has expanded, we are seeing an upsurge of broilers a development of the sector that augurs an economic upturn. At the macroeconomic level, the poultry (broiler) flock is estimated at a production of 50 000 000 head (broiler) and 1 350 000 000 eggs (IPAVIC, 2013) in the modern sector and more than 25 000 000 heads in the traditional system (MINEPIA, 2009). With more than 320,000 jobs created in the sector, it covers 14% of animal protein requirements. Chicken meat therefore occupies an important place in the diet of Cameroonians. With a contribution of more than 3% of GDP (PACA, 2013), more than one million Cameroonians are active in the poultry sector. Despite a strong propensity exerting the informal, our objective through this article is to determine the distribution of the added value and also the modes of coordination between the actors of this sector.

### II.2. Theoretical and conceptual framework

The choice of the research question leads to favoring a theoretical framework that makes it possible to take into account both the role of governance in transactions and the factors influencing the performance of the actors involved in them. A certain number of theoretical approaches make it possible to understand the reasons underlying the modes of coordination between the protagonists of the sector and to investigate the economic performance of the sector. We will also appropriate the contributions of the industrial economy through the SBP triptych (Structure-Behavior- Performance), the contributions of the value chain analysis of Gereffi and al (1994, 2005) which combines the different methods of analysis of agro-food chains. We adopt this theoretical framework because it supports the interrelationships and dynamics between the actors through the concept of governance. It helps to explain the coordination of actors in value chains with the objective of producing quality goods and, above all, creating added value. We solicit the typology of the GCV which includes the appropriate modes of governance to describe the exchanges observed between the actors. Finally, we will mobilize the work of Oliver Williamson who is interested in the existence of different organizational arrangements chosen by the economic agents to coordinate the production and the exchange, as well as to the arbitration which takes place during the choices. operationalized through the theory of transaction costs.

## III. The determinants of value-added sharing in the poultry industry

The actors of the poultry sector in Cameroon and specifically those of the city of Yaoundé are grouped together in formal and informal associations. For the first category, we will find within the Interprofession Avicole du Cameroun, which is the body that oversees the largest producers in the country. In the second category, these actors meet by association according to the markets in which they are implanted, we can mention the Circle of the friends of the poultry of Mvog Ada, the Sellers of chicken of the market of Etoudi, what has allowed to design the cartography of the sector as follows:

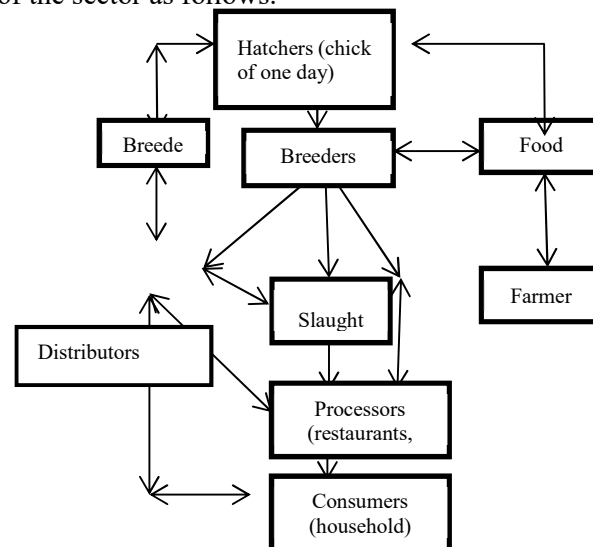


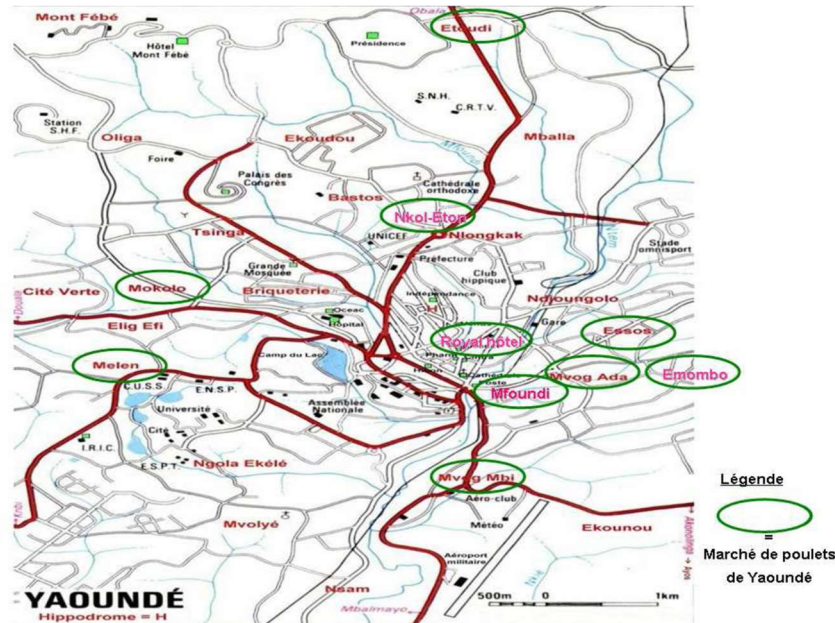
Figure 3.1 Mapping of the poultry sector in Yaoundé

Source: by author.

In this article, we have taken the indicators that will make it possible to evaluate the added value of the sector at each link and also those which will highlight the modes of coordination of the transactions of the activities between the actors of this sector.

### 3.1. Locating the study area

Yaoundé, nicknamed the city of seven hills, is the administrative and political capital of Cameroon since 1922. It is the capital of the Central Region (Cameroon with ten regions) and the Mfoundi department. With a population estimated at over 1,500,000, it is a cosmopolitan city that brings together all the cultural and ethnic sensitivities of Cameroon and foreigners of various nationalities from Africa, Latin America, Asia and the West. It is also the city that records the highest level of consumption of broiler meat and its derivatives.



Card 1. Yaoundé Chichken Market (INS, 2005)

As part of this study, we interviewed 110 actors in the sector:

- ◆ There are 73 actors for poultry, distributed as follows: 10 producers, 21 distributors, 21 fellers, 21 processors.
- ◆ There are 37 actors for eggs, distributed as follows: 11 producers, 11 distributors and 15 processors.

### 3.2. Indicators of added value and modes of coordination between actors in the poultry sector.

- ◆ The distribution of margins: the margins will be determined according to the cost structure of the poultry industry and the data we obtained from our respondents;
- ◆ The influence of the type of activity;
- ◆ Arrangements between actors in the sector.

The actors of this sector devote more time to their activities so, their availability is not obvious, it was necessary in most cases to go to the places where they carry out their activities. Moreover, many of them do not control the costs associated with the production and marketing of poultry products. Apart from this, the data collection was not at all easy because of the reluctance of some producers to use these data against them, some even reported the tax adjustments that were inflicted on some of theirs, failing.

### 3.3. Methodological Approaches

The analytical tools used in this case range from economic analysis to statistical analysis of data from surveys of industry players. This will be done firstly by the presentation of the two theoretical models, then we will specify the so-called models.

#### 3.3.1. Analysis of financial performance in the poultry sector

The analysis of the economic viability of the value chain is an important element for the actors of this sector of activity, since it makes it possible to evaluate the chain's performance in terms of economic efficiency and relates to the evaluation of the value chain. global added values produced by the chain and actions of the

different stages, production and marketing costs (or transaction costs) and operator performance (use of productive capacity, productivity and profitability).

As a result, several profitability ratios are calculated as part of this analysis:

Added Value (AV)

$$AV = TP - IC \text{ with } TP = VC + FC \text{ and } CI = W$$

Where TP: Total Production, CI: Intermediate Consumption, VC: Variable Cost, FC: Fixed Cost.

Calculation of marketing costs: handling, transport and processing costs (MC)

Calculation of the MBC = PP-MC with Use 1:

GM\* Activity Volume = Gross Margin of the Operator GM/Product (broiler and egg consumption)

Use 2:

- ◆ Margin rate calculation: MR / Producer Price or PP.
- ◆ Calculate the ratio MR / Value Created

### 3.3.2. Statistical analysis method

#### 3.3.2.1. Analysis tools

Statistical analysis of data collected in the field required the use of some statistical tools. Descriptive statistics included a summary of all the information observed. The one-way analysis of variance (Anova) was used to determine the change in margin generated by activity; and a second two-way analysis of variance performed to assess the influence of the arrangements between the actors on the generated margins.

#### 3.3.2.2. Statistical software

EXCEL 2010: Descriptive statistics, curves and Histograms of averages and frequencies.  
Graphpad prism 5: One-way variance analysis.

### 3.2.3. Analysis of variance

An analysis of variance is a statistical test carried out in order to evaluate the effect of the modalities of a factor on a response variable studied.

- ◆ The postman

We call factor any series of elements of the same nature conditioning the phenomenon studied. In our case, the activity conducted and the other dependent variables are the different elements that constitute a factor called levels or modalities. In our case (Egg Producer, Egg Dispenser, Egg Transporter, Feller, etc.) for the activity factor conducted and (type of relationship, type of payment, location, ... etc.) for the factor characterizing the other dependent variables.

- ◆ The answer

The answer here is the variable of interest studied. The one on which the effect of the modalities of the factor must be evaluated. In our case the answer is the margin generated by the respondents. The analysis of variance will therefore consist in evaluating the effect of the activity carried out and the other dependent variables on the margin generated by the respondents.

### 3.3. Realization of the anova

After collecting the field data from the respondents. Margin values are obtained for each respondent by activity conducted and for all other dependent variables (relationship type, payment method, etc.).  $Y_{ij}$  is the value of the margin obtained on the  $i$ th activity and the  $j$ th dependent variable. The objective is to know if the margins generated by the respondents are a function of the activities and the different interrelations between the actors of the sector. We then pose two hypotheses:

A first hypothesis is called  $H_0$ : Margins are correlated with activity and arrangements. A second hypothesis is called  $H_1$ : margins are not correlated with activity and arrangements. In this case only the margins of the same activity or the same dependent variable have substantially the same value. We denote  $\mu_1$  the margin

generated by activity 1 or the dependent variable 1 and  $\mu_2$  the margin generated by activity 2 or the dependent variable 2. We posit  $\mu_i = \mu + \alpha_i$ , where  $\alpha_i$  is the effect of activity  $i$  or the dependent variable  $i$ . It must be decided whether  $H_0$  or  $H_1$  are retained from the data collected. The data are analyzed using the model  $Y_{ij} = \mu + \alpha_i + \epsilon_{ij}$ . NB:  $\epsilon_{ij}$  is the residual error. It is estimated  $\mu$  by  $\bar{X} = (\sum_{ij} Y_{ij}) / N$ , we estimate  $\alpha_i$  by  $\sigma = (\sum_j Y_{ij}) / n - \bar{X}$ .  $\bar{X}$  is the average of all margins (general average) and  $\sigma$  is the difference between the average of the margins of activity  $i$  or of the dependent variable  $i$  and the general average.

To decide the hypothesis to retain ( $H_0$  the  $\alpha_i$  are all zero,  $H_1$  the  $\alpha_i$  are not all null), we perform an analysis of variance:

- ◆ The dispersion of the effects of the activities or of the dependent variables is estimated, they will be all the greater as the  $\alpha_i$  will be different;
- ◆ The dispersion due to random fluctuations, which serves as a reference base, is estimated; it will be the greater the larger the residues will be;

And we compare the two dispersions.

The dispersion of the effects of the activity is estimated by what is called the sum of the Total squares of  $t$  (STS) and the dispersion due to the random fluctuations which serves as the reference base is estimated by what is called the sum of the residual squares. (SRS).

We obtain these estimates knowing that:  $Y_{ij} = X_i + A_i + E_{ij}$  and we show that:  $T = STS + SRS$

But we can not directly compare the two sums of squares of deviations. They must be divided by their respective numbers of degrees of freedom, that is, the number of independent values that compose them:  $t-1$  for STS and  $n-1$  for SRS with  $t =$  number of treatments (activities carried out or dependent variables) and  $n =$  number of respondents. We are then interested in the probability that an  $F$  exceeds the value actually calculated. If this probability is lower than a previously fixed threshold, equal to  $\alpha$  (for example 5% or 1%), we say that the margins generated by the different activities or dependent variables are significantly different at the  $\alpha$  level. This means that we reject  $H_0$  and retain  $H_1$ . On the contrary, if this probability is greater than  $\alpha$ , we say that the margins generated are not significantly different at the  $\alpha$  level. This means that we accept  $H_0$  and reject  $H_1$ .

### 3.3.1. Description of the variables

In the table below, we highlight the variables that will make it necessary to carry out our analysis on both economic and statistical performance.

Table 3. Presentation and description of variables

Variables	Définition	Measure
Average commercial Margin	Value added after withdrawal of intermediate Consumption	continue
Variance	Average deviation to the average of the margin	continue
Relationship	Link between agents sector	Binary variable 1 if professional 0 if proximity
Financial support between actors	Production financing and/or support of a partner	Variable binaire 1 si oui 0 sinon
Location	accomodation of supply	Binary value 0 if in the city of Yaoundé 1 if no
Mode of Transport	Means of transport	0 if leasing 1 if owner of a means of transport
Contractualization	Written support that regulates the interaction between agents of the sector	0 if verbal 1 if formal
Transaction (payment) mode	Financial support by which transactions are done	0 if loan 1 si cash

Source : Data survey.

### 3.3.2. Poultry sector Margin distribution

The margins are determined under the cost structure of the poultry sector and others data of the survey.

Table 3.1. Margin distribution between poultry sector actors

Title	Actor	Chicken meat	Eggs
Fixed Cost	Producers	1463.42	44.11
	Distributors	0.978	0.18
	Fellers	0.59	59.33
	Processors	6.75	
	Total	1471.74	103.44
Variable Cost	Producers	140.65	0.165
	Distributors	60.46	0.17
	Fellers	5.16	
	Processors	235.28	
	Total	456.99	
Workforce	Producers	98.63	0.13
	Distributors	8.89	0.19
	Fellers	17.94	
	Processors	94.75	0.32
	Total	220.19	
Total Cost	Producers	1702.69	44.11
	Distributors	289.12	
	Fellers	9.4	0.48
	Processors	285.36	
	Total	2074.4	44.59
Margin/division	Producers	294.21	5.28
	Distributors	216.57	5.72
	Fellers	125.54	15.21
	Processors	1238.35	
	Total Margin	1947.35	26.21

Source: Survey data. author's estimate.

Observation: When reading the table above. we obtain a total margin of about 1947.35 FCFA / chicken and 26.21 FCFA / egg. The breakdown shows that the producer segment is doing well with 294.21 FCFA / chicken and 5.28 FCFA / egg. The distribution segment receives 216.57 FCFA / chicken and 5.72 FCFA / egg. then follows the segment of the fellers which captures 198.22 FCFA / chicken and the segment of the processors with 1238.35 FCFA / chicken and 15.21 FCFA / egg.

We can easily deduce that the link in the processor drives the two value chains of the poultry sector. To better illustrate this result. we will represent it in two diagrams according to the value chains of the sector.

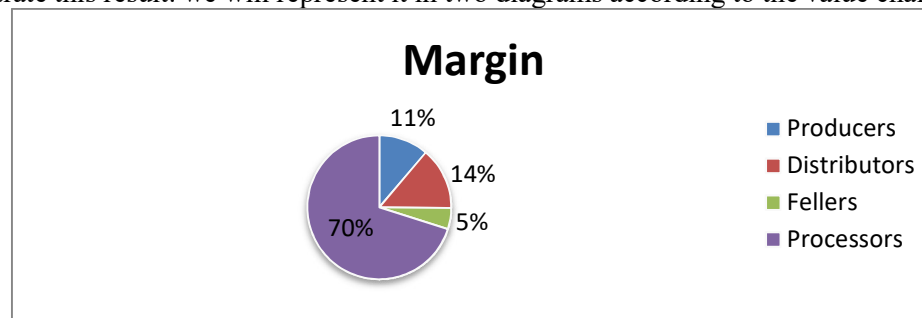


Figure 3.1: Margin distribution of each actor in the broiler value chain.

Source: Data from survey.

The diagram above shows the share of margin captured by processors equivalent to more than 70% of the total generated. followed by distributors. producers and fellers. We deduce that the broiler value chain is driven by the processors in terms of the percentage of each player's margins.

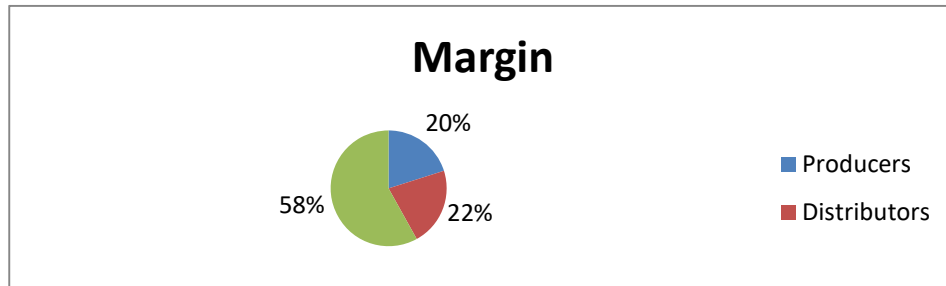


Figure 3.2: Distribution of the margin in the value chain Consumer egg

Source: Data from survey.

Similarly, by observing the egg value chain of consumption, we observe that the link of processors is awarded nearly 60% of margins, followed by distributors and producers.

Table 3.2: Calculation of Value Added (AV) generated by the commodity chain AV = Gross Value of the Product – Intermediate Consumption.

Title	Actor	Chicken Meat	Eggs
Intermediate	Producers	1702.69	0.25
	Distributors	9.96	0.13
Consumption (IC)	Fellers	27.32	
	Processors	421.99	0
	Total	2162.19	0.58
Added Value (AV)	Producers	296.62	5.28
	Distributors	368.72	5.72
Global Value Added	Fellers	198.22	-
	Processors	1852.97	15.21
	Total	2643.85	26.21
	On Added Value By Actor (GVA/Ava)%	Producers	11.21
On Added Value By Actor (GVA/Ava)%	Distributors	13.95	21.82
	Fellers	4.74	-
	Processors	70.10	58.03
	Total	100	100

Source: Data from survey, author's estimate.

From Table 3.2, we can analyze the value chain of the poultry sector in the city of Yaounde. We note that it generates added values of 2593.85 FCFA / chicken and 26.21 FCFA / egg. The share of these values added by the different actors of the chain is on average of 11.21% for the producers, 13.95% for the distributors, 4.74% for the fellers and 70.10% for the processors for this which concerns poultry. While at the consumer egg value chain, we have 20.15% for producers, 21.82% for distributors and 58.03% for processors. This leads us to say that the processors control the two value chains of the poultry sector of the city of Yaoundé.

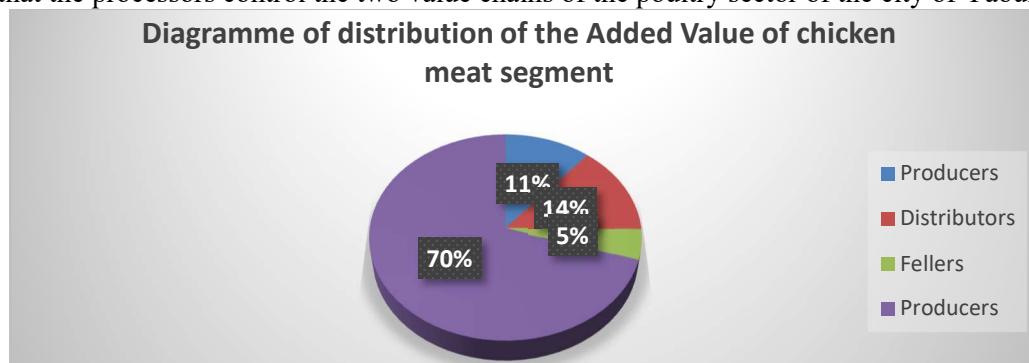


Figure 3.3: Distribution of the Added value of chicken meat segment

Source: Data survey.

This diagram easily elucidates the results that we have shown in Table 4.2. With more than 70% of margins captured by the processing link, 11% for producers, 14% for distributors and 5% for fellers, we conclude that processors drive the broiler value chain.

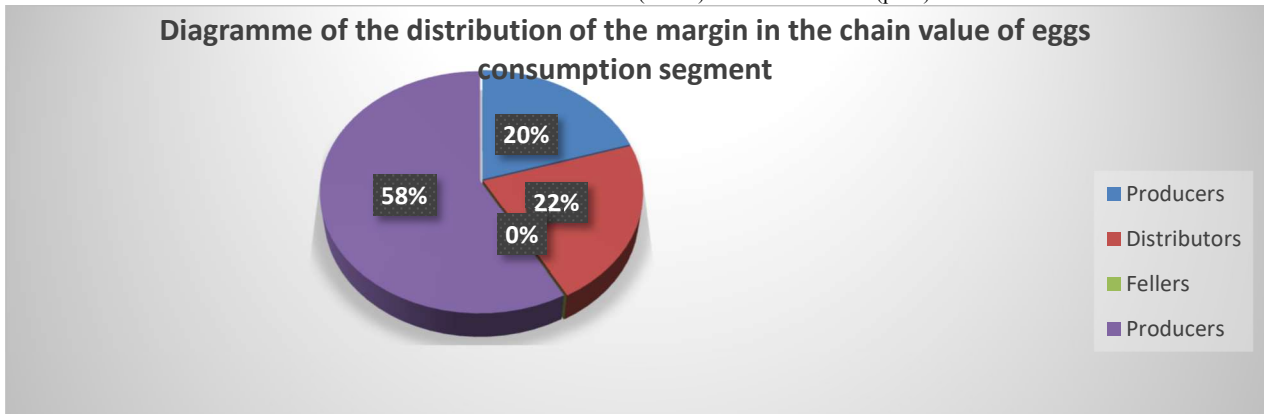


Figure 3.4. Distribution of the margin in the chain value of eggs consumption segment

Source: Data survey.

For the actors of the egg product, we have for added value distributed among the various protagonists in descending order 20.15% for the producers, followed by 21.82% for the distributors and 58.03% for the processors. For an overall value created equivalent to 2643.85 / chicken for the chicken product, we have 296.6 FCFA which goes to the producers, 260.72 FCFA for the distributors, 125.54 FCFA for the fellers and 1852.97 FCFA for the processors.

Similarly, for the egg product, the total product of the chain which is equivalent to 26.21 FCFA, the processors are found with 15.21 FCFA, or 58.03%, distributors have a gain equivalent to 5.72 FCFA that is 21.82% and producers receive close to 5.28 FCFA per egg with a percentage of 20.15%.

Table 3.5 : Margin ratio calculated on producer price

Designation	Actor	Chicken meat	eggs
Margin/segment	Producers	294.21	5.28
	Distributors	216.57	5.72
	Fellers	125.54	-
	Processors	1238.35	15.21
	Total Margin	1947.35	26.21
Ratio Margin/Production Cost	Producers	17.28%	11.84%
	Distributors	12.69%	12.82%
	Fellers	7.36%	-
	Processors	16.75%	34.11%
	Total	54.08%	58.77%

Source: Data survey, author's estimate.

Observation:

The table above shows the proportion of the margin in the cost of production of each product from the two sectors. For the producers, it corresponds respectively to 17.28% and 11.84%. for the distributors, we have 12.69% and 12.82%, that of the fellers of the broilers corresponds to 7.36% and for the link of the processor, we get 16.75% and 34.11%.

Table 3.6. Added Value Margin Ration Created

Designation	Actor	Chicken meat	eggs
Added Value (AV)	Producers	296.62	7.28
	Distributors	368.72	8.22
	Fellers	198.22	-
	Processors	1852.97	20.21
	Total	2643.85	35.81
Margin	Producers	294.21	5.28
	Distributors	216.57	5.72
	Fellers	125.54	-
	Processors	1238.35	15.21
	Total Margin	1947.35	26.21
Ratio Margin/Added Value (AV)	Producers	99.18%	72.52%
	Distributors	58.73%	69.59%
	Fellers	63.33%	-
	Processors	66.84%	72.59%
	Average	72.02%	71.56%

Source: Data survey



Observation:

In this table, we note that the margin / value added ratios are all higher than 50% with respective averages of 72.02% and 71.56% for each of the value chains in the value chain. In addition, the link in production has a ratio of 99.18%.

#### 4. Influence of the type of activity on the margin

The analysis of the influence of the type of activity on the margin in the sector will be made according to the one-way analysis of the variance (ANOVA). In other words, we are using graphpad prism software to show the impact of each type of activity on the margin generated in the industry.

Table 4.7. Analysis of the impact of the type of activity on the margin sector

Variation Source	Degree of liberty (dol)	Squares Sums	Middle Sums squares	F calculated	% of total variation	P. value
Activity	6	387300	64560	1.668	12.28	0.1006
Arrangement	11	109200	9932	10.84	43.54	< 0.0001
Residual (error)	66	392900	5954			
Total	83	889500				

Source: data survey.

$F_{cal} > F_{lu}$ , the test is statistically significant at 0.5% and two degrees of freedom. We report a probability P. value < 0.0001, we have 0.01% chance to observe the effect of the activity on the margin. This test is statistically significant. It is concluded that the type of activity has an influence on the margin in the poultry sector.

##### 4.1. Role of institutional arrangements and margin

The role of the arrangements will be demonstrated by an analysis of two-factor variances. We will test using the graphpad prism software the effect of each arrangement of the actors on the margin generated in the poultry industry.

##### 4.2.2. Link between relationship and margin of the sector

Here it is a question of showing the impact that the relational arrangement can have on the margin of the sector.

Table 4.2: Analysis of the influence of the relation variable on the margin of the sector

Factors	dol	SS	MSS	F calculated	% of total variation	P. value
Activity	6	1 393 000	180 200	73.36	34.95	< 0.0001
Type of Relation	1	389 200	232 100	94.49	12.58	< 0.0001
Interaction	6	1 081 000	389 200	158.4	45.01	< 0.0001
Residual	94	231 000	2457			
Total	107					

Source : Data survey.

When reading the table, we find that the relationship type is 12.58%, the interactions for 34.95% and the activity 44.01% of the total variance. The analysis of the variance shows that with  $aF_{cal} = 94.49$  for a threshold of 0.0001, we have a P. value < 0.0001. So, we have a 0.01% probability of not observing the effect of the relationship on the margin. This leads us to conclude that the type of relationship (proximity and professional) is statistically significant, it has an influence on the margin in the sector.

##### 4.3. Margin link to transaction mode variable (payment)

Table 4.3: Analysis of the influence of the mode of transaction on the margin

Factors	dol	SS	MSS	F calculated	% of total variation	P. value
Activity	5	72240	14450	1.093	5.14	0.3711
Payment Mode	1	312700	62540	4.732	22.25	0.0008
Interaction	5	3075	3075	0.2327	0.22	0.6309
Residual	77	1018000	13220			
Total	88					

Source: Data survey.

When reading the table above, we note that the activity corresponds to approximately 5.14% of the total variance with a  $F_{cal} = 1.093$  at  $ddl = 5$ . We obtain a P. value = 0.3711, we conclude this factor is not statistically

significant and therefore the activity has no influence on the payment method in the sector. Similarly, the payment method satisfies 0.22% of the total variance with  $aF_{cal} = 4.732$  at 1 degree of freedom and a probability  $P. value = 0.6309$ . So, we have a 63.09% chance of getting a payment method effect on the margin, which shows that the test is not statistically significant.

#### 4.4. Link of the contractualisation variable with the margin of the actors of the sector

Table 4.4: Analysis of the influence of the contracting method on the margin

Factors	dol	SS	MSS	F calculated	% of total variation	P. Value
Interaction	6	7090	1182	0.1216	0.50	0.9935
Activity	6	462000	77010	7.922	32.90	< 0.0001
Type of Contract	1	2067	2067	0.2126	0.15	0.6457
Residual	96	933200	9721			
Total	109					

Source: Data survey.

According to our ANOVA analysis, the contract type is 0.15% of the total variance with a  $F_{cal} = 0.2126$  at 1 degree of freedom. With a  $P. value = 0.6457$ , we have a 65% chance of not observing the effect of the contracts on the margin of the actors. We therefore conclude that the analysis of the variance in this case is not significant.

#### 4.5. Link between the mode of transport and the margin of the actors of the sector

Table 4.5: Analysis of the influence of the mode of transport on the margin of the sector

Factors	dol	SS	MSS	F calculated	% of total variation	P. Value
Activity	5	59810	11960	1.007	4.22	0.4185
Interaction	5	287800	57560	4.845	20.30	0.0006
Mode of transport	1	24870	24870	2.094	1.75	0.1514
Residual	88	1045000	11880			
Total	99					

Source : Data survey

The results in the previous table show that the mode of transport corresponds to 20.30% of the total variance with a  $F_{cal} = 4.845$  at 5 degrees of freedom and therefore a  $P. value = 0.0006 < 0.0001$ . The result is not statistically significant. It is concluded that the mode of transport has no effect on the margin of the sector.

#### 4.6. Link between the location variable and the margin of the sector

Table 4.6: Analysis of the influence of location on the margin of the sector.

Facteur	Dol	SS	SCM	F calculated	% de variation	P. value
Activité	2	17760	8882	4.010	15.67	0.0303
Interaction	2	28620	14310	6.462	25.25	0.0053
localisation	1	9398	9398	4.244	8.29	0.0495
Residual	26	57580	2215			
Total	31					

Source : data survey.

According to our table, the location variable is 8.29% of the total variance with a  $F_{cal} = 4.244$  at 1 degree of freedom and a  $P. value = 0.0495$ . We therefore have a 5% probability of perceiving the effect of location on the margin created by the sector. We conclude that the test is statistically significant at the 0.05 level.

#### 4.7. Link of the variable of financial support to the partner on the margin created in the sector

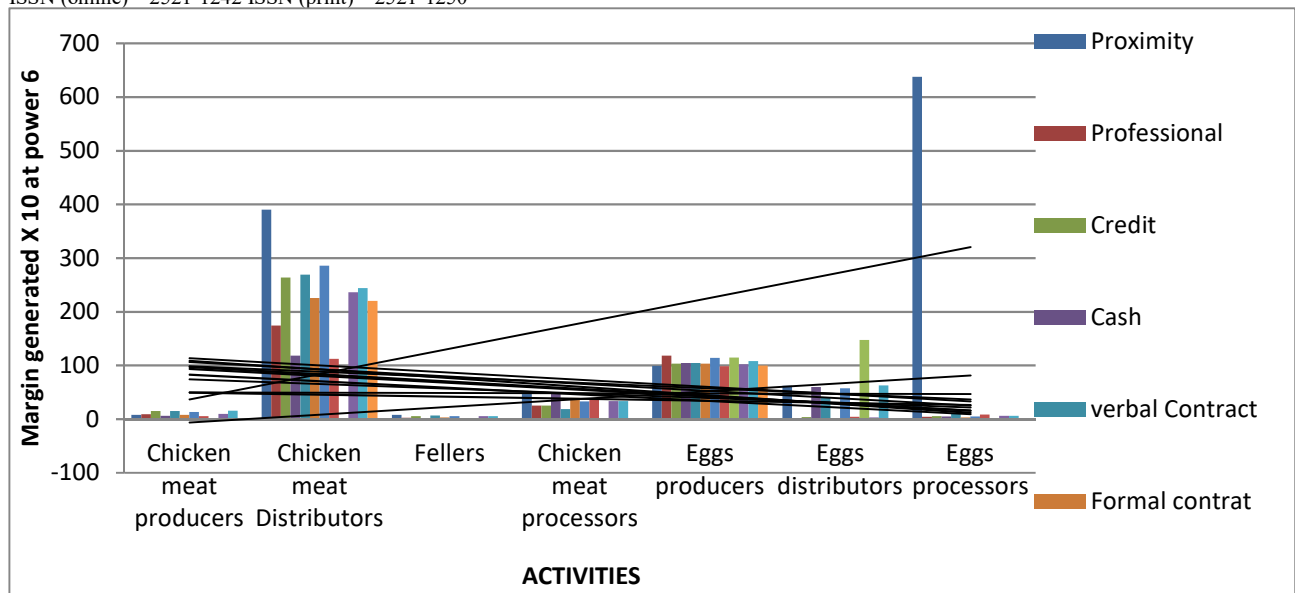
Table 4.7: Analysis of the influence of support on the margin of the sector.

Factors	dol	SS	MSS	F calculated	% de variation	P. value
Activity	3	4952	1651	0.08113	0.39	0.9699
Interaction	3	354600	118200	5.809	27.63	0.0019
Financial Support	1	8406	8406	0.4131	0.65	0.5237
Residual	45	915600	20350			
Total	52					

Source : Data survey.

The observation of this table gives us the following elements for the support variable which represents 39% of the total variance: a  $F_{cal} = 0.08$  at 1 degree of freedom with a  $P. value = 0.5237$ . We have  $F_{cal} < P. value$ , the test is not statistically significant.

#### 4.8. Evolution of the distribution of the margin in the sector



Source: author.

Figure 4.1: Trend curve illustrating the evolution of the margin in the sector from each actor

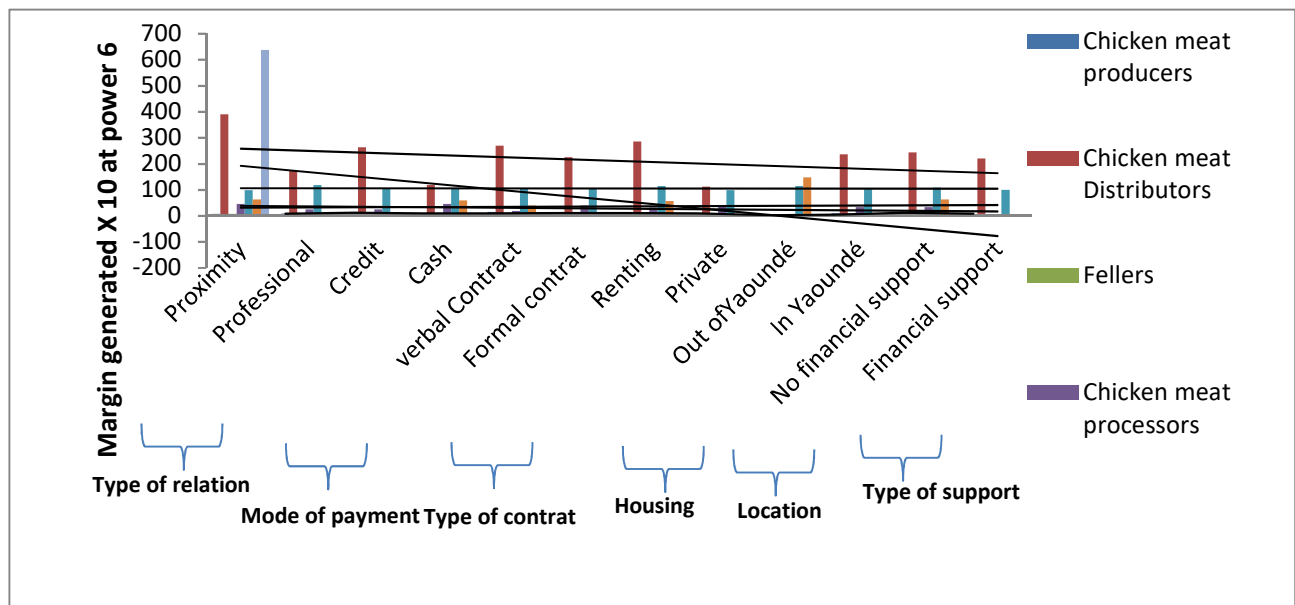


Figure 4.2: Trend curve illustrating the evolution of the margin in the sector from each arrangement

Source: author.

Observation: As illustrated by the graph representing the margin captured by each segment of the value chain and by each arrangement. we find that the trend curve increases from upstream to downstream. We therefore conclude that the distribution of the margin is influenced by the coordination mode between actors.

#### 4.8. Determination of winners and losers

In this paragraph. it is a question of identifying the actors who play their part in the different activities and institutional arrangements of the actors of the poultry sector. To do this. the use of histograms will bring out these actors from different value chains.

**4.8.1. According to the arrangements between actors.** Here. it is a question of evaluating the global margin generated by each activity of the poultry industry.

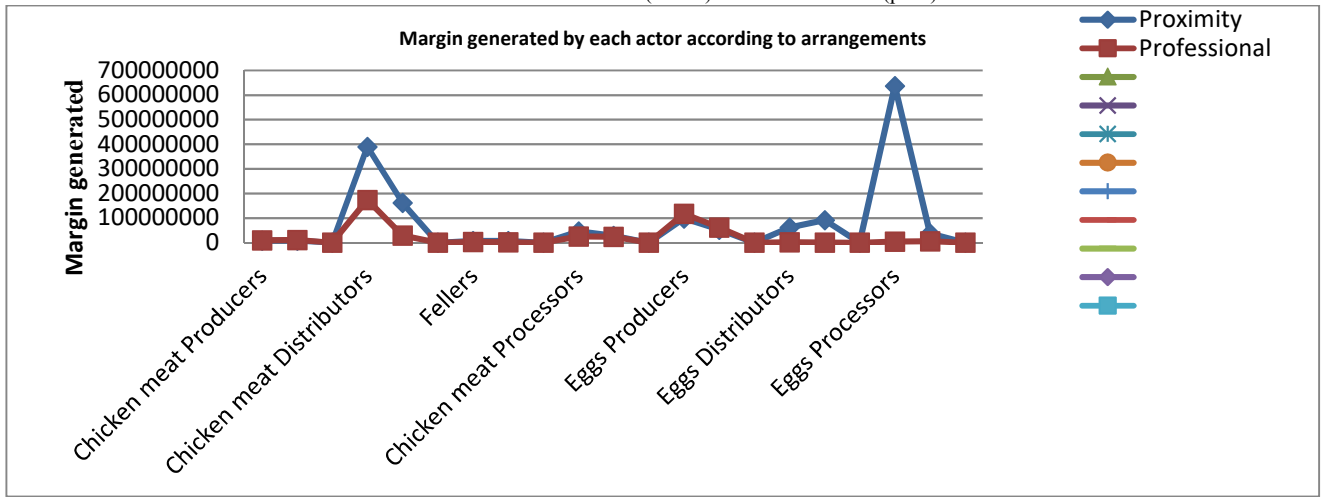


Figure 4.3: Evolution of the margin generated by each activity and according to the actors' arrangements

Source: author.

Observation: We only find that the distribution and processing (broilers) segment as well as the production segment and processing segment (eggs for consumption) have the largest contributions in the margin generated by the sector. We can say that the distributors drive the broiler value chain and the producers drive the egg value chain. In addition, we also conclude that the influence of proximity relations over the margin created in the sector is predominant: it is a relational governance that is omnipresent in the poultry sector of the city of Yaoundé.

## Conclusion

In this paper, our objective was to analyze the shared added value in the poultry sector particularly in the town of Yaounde. To attempt it, we referred to the chain value analyze which allowed us to identify and study the mains chains values inserted in the poultry sector in Cameroon in general. To answer to this problem, we mobilized the Chain Value Theory framework (gereffi, Sturgeon, Humphrey, 2005) which help to identify the power relationship which determine how the human, financial and material resources are organized and circulated in the sector by identifying exchanges coordination modes. We mobilized too the New institutional Economy and the industrial economy to put in evidence the Market structuration, constraints, stakeholder behavior and performance following economic analyzes (accounting). The specificity of site, the assets and the frequency developed by the Institutional Neo-Economy allowed to determine the types of products in vigor in the sector and presented the various asymmetries which could face each link of the chain in the transactions between partners. The concept of uncertainty developed here explains the existence of transactions based on site or organizational proximity (custom relations).

The review of the literature has made it possible to demonstrate the evolution of the sector to the value chain to highlighting beforehand the interrelations between the actors and also to identify the link that drive the sector which is none other than the link processors consisting steakhouses for the broiler value chain and bakeries for consumption eggs. However, the determination and distribution of value added in the various values chains does not show any link with the mode of coordination, on the other hand, it is sufficiently related to the relationship of power which structures the transactions. This is due to the fact that some actors are interfering in the activity of their partner, other prefer to exchange with partner they master (ethnic, friendly, family) to reduce the risks of uncertainty and in turn, increase their income.

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