A THEORETICAL MODEL OF THE SUPPLY STRATEGIES OF CHAIN STORES IN CAMEROON

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ABSTRACT

The aim of this study is to develop a theoretical model that explains the supply strategies of chain stores in Cameroon taking the size of the market area as the dependent variable. To attain this goal, we first used interview guides in the first exploratory stage; we then used questionnaires to collect data on 87 chain stores and apply a linear logistic regression to build our first model. We finally tested the model using Pearson’s Chi Square to obtain a final theoretical model. Four principal recommendations are made and suggest that strategies like the sale product with distributor brands, the existence of warehouses for dispatching products, the existence of a unit for the centralisation of orders and the passing of orders by internet are important in explaining the supply strategies of chain stores in Cameroon.

Keywords: Consumer Analysis, Supply Strategy, Chain Stores.
JEL Classifications: D11, D12, D91, L81, Q11, Q21.

1. INTRODUCTION

Chain stores have existed in Cameroon for many decades. Some of the existing stores are: Monoprix, Niki, Score, Mahima, Tiger, Espace Landmark, Leader Price, etc. One of the generic reasons for the sustenance of the chain stores is the rapidly increasing and evolving consumers’ behaviour. Consumers are increasingly in demand of the goods that are being sold by the chain stores. They frequently seek a price/quality ratio in their favour and require more services to be incorporated into the product (Bowersox, Closs and Stank, 2000). On the other hand, with the effect of fashion and modernization of life, consumers progressively leave traditional stores at the benefit of chain stores.

The evolution of mass distribution that followed the advent of mass consumption and multiplication of brands brought about the development and multiplication of free service stores like hypermarkets, supermarkets and superettes of various sizes in many countries. This trend is also observed in Cameroon but not in the same proportions.
This evolution of major chain stores in Cameroon may bring a naïve observer to conclude that researchers in management give much importance to these entities while in reality, it’s not the case. We observe that in Cameroon, scientific studies concerning chain stores are very scarce. This situation is not comfortable because it’s important for the entire community (scientists, investors and the government) to know how these structures function in order to promote their expansion and ensure their continuity.

The aim of this study is to conceive a theoretical explanatory model of the supply strategies of chain stores in Cameroon, taking the size of the sale area as the dependent variable. To do this, we first present a literature review; secondly, we expose the research problem and question; thirdly, we present the methodology used; fourthly, we present and comment on the main results; lastly, we draw conclusions, identify the limitations and propose avenues for future research.

1.1 Research Problem And Research Question

An analysis of the different studies presented shows that a small number are interested in the sources of supplies of chain stores specifically. On the other hand, many of these studies shows that supply has very important place in all companies and not only in commercial ones. We then understand that for commercial enterprises like chain stores, this importance is increasing.

The study of Alon and Perrigot (2003) dwells on the supply of chain stores, however, the study did not present any viable model for concrete analysis. Hence, it makes it difficult to determine which variables constitute efficient strategies. For example, it would be interesting to know these variables and their relationship with supply strategies in view of influencing them if necessary. Also, it is necessary to know how superettes, supermarkets and hypermarkets acquire and supply stocks and if these supply strategies are a function of the sale area of the shop. The research question is: What is the most important model in the explanation of the supply strategies of chain stores in Cameroon?

2. LITERATURE REVIEW

Before giving a summary of scientific studies on the supply strategies of enterprises, it will be judicious to first define the main concepts of the study and secondly explore studies on producer-distributor relationships because the nature of these relationships affects supply strategies.

2.1 Definition of Concepts

Three main concepts will be defined here: chain stores, the size of the sale area and supply strategies. We can define a chain store as a retail store where selling is done in self-service and the area is 120 m² or more (Dubois and Jolibert, 1992; Helfer and Orsoni, 1995; Kotler et al. 2006). These authors distinguish three main forms of chain stores with precise characteristics: superettes (with sale area between 120 and 400 m²); supermarkets (with sale area between 400 and 2500 m²) and hypermarkets where the sale area is more than 2500 m². We can note that the definition of chain stores includes three forms of the size of the sale area indicated above. Lastly, supply strategy refers to the different decisions taken by chain stores in view of acquiring goods which will be sold.
2.2 Producer-Distributor Relationships

It will be difficult to talk about the supply strategy of a chain store without mentioning the nature of the relationship between it and its suppliers because the supply strategies depend on the nature of these relationships. For example, if these relationships are very conflicting, chain stores could change their source of supply.

Many studies have examined the nature of these relationships and showed that in the past (before 1990), these relationships were mainly conflicting. After 1990, producers and distributors tried to reduce these conflicts by laying emphasis on elements like trade marketing, category management, logistics, distributor brands and Efficient Consumer Response that can be used to improve these relationships.

2.3 Synthesis Of Research On Supply Strategies

The globalisation of markets and exchange and the automatisation of means of production and communication induce an adjustment of enterprises that face the strategic imperative of a dynamic management of flows of materials or products and information. In this context, purchases, supplies and logistics contribute to the fundamental equilibrium of enterprises, their performance and therefore to their development and orientation (Sheth, 1981; Fairhurst and Fiorito, 1990; Filser and Paché, 2006).

For many enterprises where purchases represent a main part of turnover, the improvement of financial results passes through purchases of products and associated services (Mathieu, 1999; Cebi and Bayraklar, 2003; Quellette and Nollet, 2007). This is why the purchase function which, in the past, was an administrative function is fast becoming a function of its own. In the same line of ideas, chain stores are self-service stores and one of the keys to their success is the quality of products sold and efficient stock management. Since in this kind of store, products are supposed to be selling themselves; a rundown in stocks has many negative consequences. On this issue, marketing specialists hold that a rundown in stocks can destabilise a brand or an entire enterprise. This rundown can involve a loss of loyal customers who would change their usual store in view of obtaining the brand out of stock in this store. The degradation of the image of a store which is regularly out of stock can also be emphasised here (Rulence, 2003).

Concerning the selling out of stocks, many studies have been done to quantify its impact on consumer behavior (Abbad, 2007). Because of poor logistics, distribution companies run the risk of losing customers and therefore market shares (Colin and Paché, 1988). The selling out of certain products has as consequence a change of store by the customer. In this case, preference for the brand is higher than preference for the store. On the other hand, stock rundowns involve a discontinuity in assortment management which has extremely negative effects in terms of image. To support many frequent stock rundowns in the logistic chain is to take the risk of losing sales and alter an excellent and popular image of the enterprise (Filser and Paché, 2006). Also, the costs related to the management of supplies is not negligible; it could be very high and make up an important part of the enterprise budget. According to Levasseur (2003), since the years 1990, many phenomena have contributed to the development of the supply function; like the globalisation of activities, internationalisation and the multiplication of supply sources, collaboration between suppliers and customers and the expansion of logistic networks.

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According to Heizer and Render (2001), the percentage of supply costs in the turnover for all industries is 52%. For the automobile sector, this percentage is 67%, 60% for the food sector, 61% for the wood sector and 55% for the paper industry. The study by Alon and Perrigot (2003) shows how a bad supply strategy led to the failure of the Marks and Spencer brand in their international expansion. According to these authors:

“… for many years, Marks and Spencer insisted on buying their clothes from national companies. This policy was appreciated by the national population, but not by customers. This dependence on British suppliers limited the number of products sold by Marks and Spencer, thus innovation. The result of this was a degradation of the company’s competitive position relative to other retailers who imported clothes and marked up their prices […]” (Alon and Perrigot, 2003:48).

3. METHODOLOGY

Given the research question, the epistemological paradigm that is most adapted is the constructive one. In these conditions, we adopt the inductive approach “which seeks to construct new knowledge by studying empirical situations” (Gavard-Perret et al. 2008:30). We therefore combine qualitative and quantitative approaches in order to best understand the research object. According to Gavard-Perret et al., (2008:34):

“Unlike a received idea, constructive epistemological paradigms allow the legitimatisation of knowledge elaborated by the interpretation and treatment of information collected by any research method, model-building technique, data collection and analysis method, and by the use of already established knowledge, in respect of transparency conditions, ethics and rigor in empirical and epistemic work”.

Using the qualitative approach, we first collect data by applying semi-directed interviews. This data enabled us to better understand the supply strategies of chain stores in Cameroon. We used a semi-directive interview guide on the supply managers of 18 chain stores. After this first step, through the use of different verbatim obtained from the interview guides, we extracted variables which appeared several times in each theme. These main themes concerned: supply sources, transport and handling of goods, persons who make purchases of goods, means used to make orders and transactions with suppliers.

After extraction of these variables, in the quantitative approach, we administered a questionnaire in face to face at the offices of respondents who are in charge of purchases in chain stores. The questionnaires are based on these variables, it would therefore be a matter of measuring their relevance for analysis. An exploitation of the questionnaires gives us results which enable us to construct a first model. The test of this first model and its modification permits us to obtain a final model.

As concerns the sample size, we have two samples. The first is used in the qualitative approach which is considered an exploratory phase and made up of 18 supply managers in chain stores. The second sample is used in the quantitative approach considered as the main phase. It is made up of 87 supply managers in chain stores. These 87 chain stores are divided into two groups: 54 superettes and 33 supermarkets. Chain stores included in this sample are chosen by convenience sampling.
To construct the theoretical model, we use a linear logistic regression. It is tested with the use of Pearson Chi Square statistic. The analysis is done with the use of SPSS version 12.0.

Table 1 Different themes and variables Analyses

<table>
<thead>
<tr>
<th>Theme variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Different sources of supply</td>
<td></td>
</tr>
<tr>
<td>SAPROVNA</td>
<td>National supply source</td>
</tr>
<tr>
<td>SAPROINT</td>
<td>International supply source</td>
</tr>
<tr>
<td>FOURHVIL</td>
<td>Supplier situated out of town of localisation of store</td>
</tr>
<tr>
<td>PRODFABD</td>
<td>Sale of products made by distributor</td>
</tr>
<tr>
<td>PRODPMDD</td>
<td>Sale of products with distributor brand</td>
</tr>
<tr>
<td>2. Transport and handling of goods</td>
<td></td>
</tr>
<tr>
<td>VIMPMARI</td>
<td>Maritime importation</td>
</tr>
<tr>
<td>VIMPAERI</td>
<td>Aerial importation</td>
</tr>
<tr>
<td>VIMPTERR</td>
<td>Land importation</td>
</tr>
<tr>
<td>EXISENTR</td>
<td>Existence of warehouses for dispatching products</td>
</tr>
<tr>
<td>3. Persons who make purchases of goods</td>
<td></td>
</tr>
<tr>
<td>EQUIPACH</td>
<td>Existence of purchase team</td>
</tr>
<tr>
<td>ACHAENSB</td>
<td>Association with other distributors to make purchases</td>
</tr>
<tr>
<td>EXISSTRU</td>
<td>Existence of structure for purchases centralisation</td>
</tr>
<tr>
<td>4. Means used to make an order</td>
<td></td>
</tr>
<tr>
<td>MPACOTEL</td>
<td>Making an order by phone</td>
</tr>
<tr>
<td>MPACOBD</td>
<td>Making an order by order form</td>
</tr>
<tr>
<td>MPACOINT</td>
<td>Making an order by internet</td>
</tr>
<tr>
<td>EDIFSEUR</td>
<td>Connection of computers with those of suppliers</td>
</tr>
<tr>
<td>5. Transactions with suppliers</td>
<td></td>
</tr>
<tr>
<td>PLUFSEUR</td>
<td>Existence of many suppliers for the same kind of product</td>
</tr>
<tr>
<td>PDUNFSEU</td>
<td>Existence of types of products with only one supplier</td>
</tr>
<tr>
<td>SIGNCAPR</td>
<td>Signature of supply contracts with suppliers</td>
</tr>
<tr>
<td>NEGOREGU</td>
<td>Negotiation with suppliers each time an order is to be made</td>
</tr>
</tbody>
</table>

4. RESULTS

For a better comprehension of results, we first present a summary of the model, then the behavior of variables in the model equation. An explanation of the model and its diagrammatic representation conclude this section.

4.1 Summary Of The Research Model

The summary of the linear logistic regression is presented in Table 2 below:

<table>
<thead>
<tr>
<th>Step</th>
<th>-2log-likelihood</th>
<th>Cox &amp; Snell R-square</th>
<th>Nagelkerke R-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59,821</td>
<td>.473</td>
<td>.643</td>
</tr>
<tr>
<td>19</td>
<td>71,967</td>
<td>.394</td>
<td>.536</td>
</tr>
</tbody>
</table>

From this table, we see that the Cox and Snell R-square of the final model is 0.394 and shows that only 39.4% of changes in sales area is explained by the significant variables. The Nagelkerke R-square which is an adjusted version of the Cox and Snell R-square is
closer to reality, has a value of 0.536 which means that the explanatory variables contribute to explain 53.6% of variations in sales area.

4.2 Behavior Of Variables In The Model Equation

The coefficients of the linear logistic regression are presented in the table 3 below.

<table>
<thead>
<tr>
<th>Step</th>
<th>Coefficient</th>
<th>S.E.</th>
<th>Wald</th>
<th>dof</th>
<th>Signif.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>FOURHVIL</td>
<td>-2.007</td>
<td>0.758</td>
<td>7.008</td>
<td>1</td>
<td>.008*</td>
</tr>
<tr>
<td></td>
<td>PRODPMDD</td>
<td>-2.018</td>
<td>0.768</td>
<td>6.899</td>
<td>1</td>
<td>.009*</td>
</tr>
<tr>
<td></td>
<td>EXISENTR</td>
<td>-1.564</td>
<td>0.729</td>
<td>4.599</td>
<td>1</td>
<td>.032**</td>
</tr>
<tr>
<td></td>
<td>EQUIPACH</td>
<td>1.799</td>
<td>0.813</td>
<td>4.899</td>
<td>1</td>
<td>.027**</td>
</tr>
<tr>
<td></td>
<td>ACHAENSB</td>
<td>1.677</td>
<td>0.936</td>
<td>3.208</td>
<td>1</td>
<td>.073***</td>
</tr>
<tr>
<td></td>
<td>EXISSTRU</td>
<td>-2.229</td>
<td>0.817</td>
<td>7.448</td>
<td>1</td>
<td>.006*</td>
</tr>
<tr>
<td></td>
<td>MPACOINT</td>
<td>-1.411</td>
<td>0.714</td>
<td>3.905</td>
<td>1</td>
<td>.048**</td>
</tr>
<tr>
<td></td>
<td>NEGOREGU</td>
<td>-2.442</td>
<td>0.847</td>
<td>8.314</td>
<td>1</td>
<td>.004*</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.607</td>
<td>1.239</td>
<td>8.476</td>
<td>1</td>
<td>.004*</td>
</tr>
</tbody>
</table>

* ; ** ; *** : Significant at respective levels of 1 ; 5 and 10%

The equation can therefore be written as:

\[
Y (\text{store sale area size}) = 3.607 - 2.007 (\text{FOURHVIL}) - 2.018 (\text{PRODPMDD}) - 1.567 (\text{EXISENTR}) + 1.799 (\text{EQUIPACH}) + 1.677 (\text{ACHAENSB}) - 2.229 (\text{EXISSTRU}) - 1.411 (\text{MPACOINT}) - 2.442 (\text{NEGOREGU})
\]

4.3 Explanation Of Theoretical Model

In this model, Y, which is dependent variable, represents the size of the sale area. It has two modalities: supermarket and superette. We have only two modalities because hypermarkets don’t exist in Cameroon. Therefore, the size of the sale area of the store is explained by a combination of different variables which make up the supply strategies of chain stores in Cameroon. In the model, the constant is equal to 3,607. This constant is added to combination of other variables.

For purchases from suppliers situated out of the town of localization of the store (FOURHVIL), the coefficient is -2,007; this takes into consideration the fact that chain stores can make their purchases from suppliers based in or out of the town of localisation. The relationship between this variable and the size of the sale area is negative in this case from the sign of the coefficient.

Another variable in the model is the sale of products which have the distributor brand (PRODPMDD). This variable has a coefficient of -2,018 and takes into consideration the fact that chain stores can either sell products with their own brand or not. The relationship between this variable and the size of the sale area is negative from the sign of the coefficient.

A third variable in the model concerns the existence of a warehouse for the dispatching of products (EXISENTR). This variable has a coefficient of -1.564 and takes into consideration the fact that a chain store may have a warehouse to dispatch goods to different stores in the network or not. The relationship between this variable and the size of the sale area is negative from the sign of the coefficient.
The existence of a purchase team (EQUIPACH) is another variable in the model. This variable reflects the presence or absence of a team in charge of purchases of goods in the chain store. For this variable, the coefficient has a value of +1.799 and shows that its relationship with the size of the sale area is positive. Association with other distributors to make purchases (ACHAENSB) is another variable in the model. This variable expresses the fact that chain stores may make their orders together with other distributors. The coefficient of +1.677 attached to this variable shows that this variable has a positive effect on the size of the sale area. The existence of a unit of purchase centralisation (EXISSTRU) is the sixth variable of the model. This variable describes a situation where chain stores, in their organization, may have a formal structure in charge of centralisation of purchases before dispatching to the different sales points or not. The coefficient of this variable is -2.229 and shows that the contribution of this variable to the size of the sales area is negative.

The seventh variable of this model refers to the making of orders through the internet (MPACOINT). A chain store may allow its orders to be passed through the internet or not. This variable has a coefficient of -1.411; this value shows that relationship with size of the sale area is negative. The last variable of this model is regular negotiation with suppliers when chain stores want to place an order (NEGOREGU). The coefficient of this variable is -2.442. This variable considers situation where chain stores may make negotiations with suppliers each time they want to make and order or not. The relationship between this variable and the size of the sale area is negative. Finally, a look at the model results enables us to better understand how variables of supply strategies are structured and the nature of the relationship between these variables and the size of the sale area. A diagrammatic representation of this model is presented in figure 1 below.

Figure 1: Diagrammatic Representation Of The Model

![Diagram of Model]

After the building of this first model, our objective is to test it by other statistical methods in order to better it. To attain this goal, we relate the different variables taken individually with the size of the sale area of the store. Given the nature of all the variables, Pearson’s Chi-square is appropriate for this test. We also use the contingency coefficient. The results obtained after these tests are summarized in table 4 below.
Table 4: Results of test of theoretical model by Chi Square and contingency coefficient

<table>
<thead>
<tr>
<th></th>
<th>Pearson chi square test</th>
<th>Contingency coefficient</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Test value</td>
<td>Significance</td>
<td>Coefficient value</td>
</tr>
<tr>
<td>FOURHVIL</td>
<td>1.327</td>
<td>0.249</td>
<td>0.123</td>
</tr>
<tr>
<td>PRODPMDD</td>
<td>6.988</td>
<td>0.008*</td>
<td>0.273</td>
</tr>
<tr>
<td>EXISENTR</td>
<td>7.067</td>
<td>0.008*</td>
<td>0.274</td>
</tr>
<tr>
<td>EQUIPACH</td>
<td>0.893</td>
<td>0.761</td>
<td>0.033</td>
</tr>
<tr>
<td>ACHAENSB</td>
<td>0.163</td>
<td>0.687</td>
<td>0.043</td>
</tr>
<tr>
<td>EXISSTRU</td>
<td>6.653</td>
<td>0.010*</td>
<td>0.267</td>
</tr>
<tr>
<td>MPACOINT</td>
<td>3.453</td>
<td>0.063**</td>
<td>0.195</td>
</tr>
<tr>
<td>NEGOREGU</td>
<td>0.879</td>
<td>0.349</td>
<td>0.100</td>
</tr>
</tbody>
</table>

* Significant at the level of 1% ** : Significant at the level of 10%

From this table, we see that only four relationships are significant in this model. These significant relationships concern four variables: PRODPMDD (probability = 0.008); EXISENTR (probability = 0.008); EXISSTRU (probability = 0.010) and MPACOINT (probability = 0.063) which are significant at levels of 1 and 10%. After this test, we can therefore retain four main conclusions:

- **CONCLUSION 1**: There exists a significant relationship between the size of the sale area and the selling of products with distributor’s brands by chain stores in Cameroon.
- **CONCLUSION 2**: There exists a significant relationship between the size of the sale area and the existence of warehouses for the dispatching of products in chain stores in Cameroon.
- **CONCLUSION 3**: There exists a significant relationship between size of the sale area and the existence of a unit of centralisation of purchases in chain stores in Cameroon.
- **CONCLUSION 4**: There exists a significant relationship between the size of the sale area and the making of orders through the internet by chain stores in Cameroon.

Finally, the diagrammatic model which we retain is presented in figure 2 below.

**Figure 2: Final Theoretical Model**

![Diagram of Final Theoretical Model]

*Key:* ———— : non significant relation
----------: significant relation
6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The aim of this paper was to conceive a theoretical model which can be used to explain the supply strategies of chain stores in Cameroon. At the end of the study, we can say that we made our modest contribution to the understanding of the supply strategies of these chain stores. Results obtained show that by considering the size of the sale area of dependent variable, four main explanatory variables permit to explain these supply strategies: the sale of products with distributor’s brands, the existence of warehouses for dispatching products, the existence of a unit for centralisation of orders and lastly, the ordering of goods by internet.

6.2 Recommendations

These results are of interest to actual or potential suppliers of chain stores in Cameroon because if these suppliers want to do business with the chain stores, it will be important to take into consideration the variables mentioned here. For example, if we consider a variable like “the existence of a unit for centralisation of orders”, it will be very interesting for a potential supplier, to know how this unit functions, in view of contacting persons who constitute this unit and make negotiations. If we consider another variable like “the sale of products with distributor’s brands”, it will be interesting for suppliers, to know which importance chain stores give to their brand. Suppliers can have many possibilities to increase their activities. It would be possible for them to manufacture products with distributor brands for chain stores. This situation enables suppliers to make their investments more profitable.

7. LIMITATIONS OF THE STUDY

The first limitation of this study is relative to the sampling procedure. It would be more interesting to use a random sampling procedure but in our context, it was impossible because a list of enterprises concerned by the study does not exist. Other limitations concern the kind of enterprises considered for this study because we considered only chain stores where self-service is practiced. It would be very interesting to take into consideration other kinds of enterprises.

8. SUGGESTIONS FOR FUTURE RESEARCH

In future studies, it is important to identify other variables which can complete those we identified in this study. Also, similar studies could be conducted in different environments in view of comparing their findings with those of this study and bringing out the contextual effects. Furthermore, it would be necessary to take into consideration other kinds of enterprises like commercial and industrial enterprises, to better understand their supply strategies.
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