

Uses of the stocks of seasoning commonly called “cubes” in Benin

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Abstract

Within the framework of the formulation of a liquid stock of seasoning containing autolysat of fish fermented in Benin, a socio-economic and cultural survey is conducted. This investigation had grounds in two big cosmopolitan cities to know Cotonou and Abomey-Calavi situated to the south of Benin where the merchandising of the sapidity products is very strong. The objective of this work is on the one hand, to count the different ranges of dressing soup commonly named cube in the South-Benin and on the other hand, to know their possible use in order to value some parameters subsequently of it. The investigation showed that very little survey are achieved on these products of sapidity in the South-Benin. As has it used: - to know the different ranges of cube sold to the South-Benin, - to know the dishes in which they are usually used, - to know the price of comes back of this ingredient while searching for the preference of the consumers. The results of the investigation achieved show that about thirty three (33) ranges of cubes are sold and are consumed in South-Benin. The range maggi is the most common. The cost of the products is the same in all markets and in all two cities with some exception. These products contain all of the glutamic compounds. The product of basis the more met that enters in the manufacture of these cubes is the flesh of chicken, then of shrimp, horse and crab. It is necessary to note that no range to basis of fish fermented or fish has simply been met during the investigations.

Keywords: investigation, socio-economic, use, “Cube”, South-Benin.

1. Introduction

In urban environment, the producing population of cooked dishes searches condiments, suction pipes of taste and products of sapidity easy to use; from where multiplicity of the stocks of “cubic” seasoning commonly called in the Benin who plays effectively, according to the users, all roles assigned with the condiments and the suction pipes of taste. Their use is especially related on the taste of the consumer and the nature of the ingredients (condiments and spices and others) which enter their formulation.

Indeed, a condiment is a substance intended to season, i.e. to raise the taste of food or culinary preparations, in particular the sauces. It is generally a plant substance origin [1], but it can be also animal origin (stock of meat) or mineral (salt) [2]. The condiments thus gather the salt intended for human consumption, mustard, spices and their aromatic extracts, the grasses aromatizing and their aromatic extracts. In the case as of plant origin substances, it can be: that is to say part of the plant with natural state, fresh or dried, like sheet, stem,

bark, seed, bubble; that is to say a preparation such as powder, paste, mixture, juice.

In addition, according to Codex [3], the stocks and soups are clear liquid preparations, obtained either by cooking in water of suitable substances rich in proteins or their extracts and/or hydrolyzed, with or without addition of seasoning and/or aromatizing substances, edible greases, all other foodstuff or spice, sodium chloride (salt) and their extracts natural or distillates, aiming at improving sapidity of the product, as well as authorized additives, or by reconstitution of an equivalent mixture of ingredients dehydrated in accordance with the instructions.

Moreover, the suction pipes of taste still called agents of sapidity, are substances which reinforce and reveal the taste of the food substances [4]. They consist of organic substances which, without having a pronounced clean flavour, have nevertheless the property to reinforce the taste and/or l'odor d'une foodstuff. Often, they mislead the consumer on product quality. Indeed, the glutamate, discovered by Kikunae Ikeda in Tokyo [5], enters the formulation of almost all the suction pipes of taste. It

confers the taste umami still called delicious taste [6] on the preparations which contain it.

In addition, the not cooked food as well as the culinary preparations contains various types of combinations of composed in the beginning of the taste umami [7]. Moreover, when the food is supplemented into made up umami, the interactions with the components of food are possible. This, L-glutamate contributes largely to the gustatory characteristics of the food which contains some ([8] named by Boutry; 2010). In West Africa, and particularly Benin, the stocks of seasoning commonly called "cubes" are added to the culinary preparations and much of food to raise their taste and especially to confer the delicious taste to them [9]. These "cubes" are sold a little everywhere on the displays of the saleswomen of our markets. To know the basic elements which usually use the manufacturing of the "cubes" and which confer the delicious taste to them on the one hand, and on the other hand, the statistical deficit of the ranges which does not emphasize the importation of "cube" containing fermented fish or of very short fish, we conducted a socio-economic and cultural study on these products of sapidity in the towns of Cotonou and Abomey-Calavi. To arrive there, the following objectives were set:

- to index the various ranges of "cubes" which are sold and consumed to Benin;
- to know the selling prices and of purchase of these products;
- to count the various meals which they enter;
- to know the reasons which justify the use and the presence of these products a little everywhere in Benin;

1. Materials and method

1.1. Materials

The equipment used for this work is only made up of cards of investigation. These cards of investigation used contain questions to appreciate the parameters such as the various ranges of stock of "cubic" seasoning sold and consumed in the Benign south, the place of source of these stocks of seasoning, various the components of these products as well as the meals in which these stocks of seasoning are usually used.

1.2. Method

1.2.1. Methodology of data-gathering

A survey was conducted in two cosmopolitan cities in the south of Benin to knowing Cotonou and Abomey-Calavi. These two cities were selected taking into account the strong population which they shelter. A first survey preliminary to the investigation was made and to consist in identifying the various agents of sapidity that are used in the preparations culinary and the economic reasons and social of their use.

In each city, the restaurants, the bars, the marquis and the school canteens were used to us as support for the collection of information.

In addition, the investigation itself was conducted to the level of ten (10) gone in the two cities including three (3) in Abomey-Calavi and seven (7) in Cotonou. In each market, ten (10) saleswomen of products of seasoning were questioned.

The survey was conducted using a questionnaire guides integrating mainly the relative information into the range of bouillon of seasoning sold, consumed, the cost of these products, the meals in which they are used.

1.2.2. Data processing method collected

The data collected at the time of the investigation have been seized and setting in shape thanks to the software Word. The software Excel has been used to do the calculations. The software Minitab version 16 has been used for the statistical descriptive making take out again the averages and the percentages of the respondents in relation to the strength investigated. The retained significance level is of 5%.

2. Results and discussion

It arises from the data analysis of this investigation that several ranges of cubes are sold in our different markets. To the number of these last we can mention: Maggi chicken, Maggi shrimp, Maggi star, Jamila chicken, Royal chicken, Horse, Glutamate, Cookzen, Mimido, Cica chicken, Maxi taste crab, Maxi taste shrimp, Boncubes chicken, Boncubes shrimp, Julizen, Knorr chicken, Gino, Onga, Yaosoup chicken, Prince chicken, Maggi cubes aroma, Princia shrimp, Jumbo jumbo, Jumbo chicken, Jumbo shrimp, Ducro, Mamie's, Aroma maggi, Delmon cubes, Licco chicken, Fasty chicken, Delcub chicken, Bestotes.

The following fig.1 shows the distribution of the different actors of the path of merchandising of the dressing soups commonly named" cube" in South-Benin.

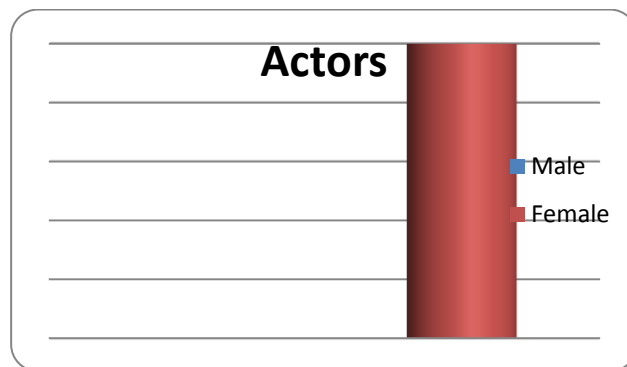


Fig. 1: Diagram of distribution of the actors of the path of merchandising of the cubes in the South-Benin.

The merchandising of the dressing soups commonly named" cubes" in Benin are exclusively an activity

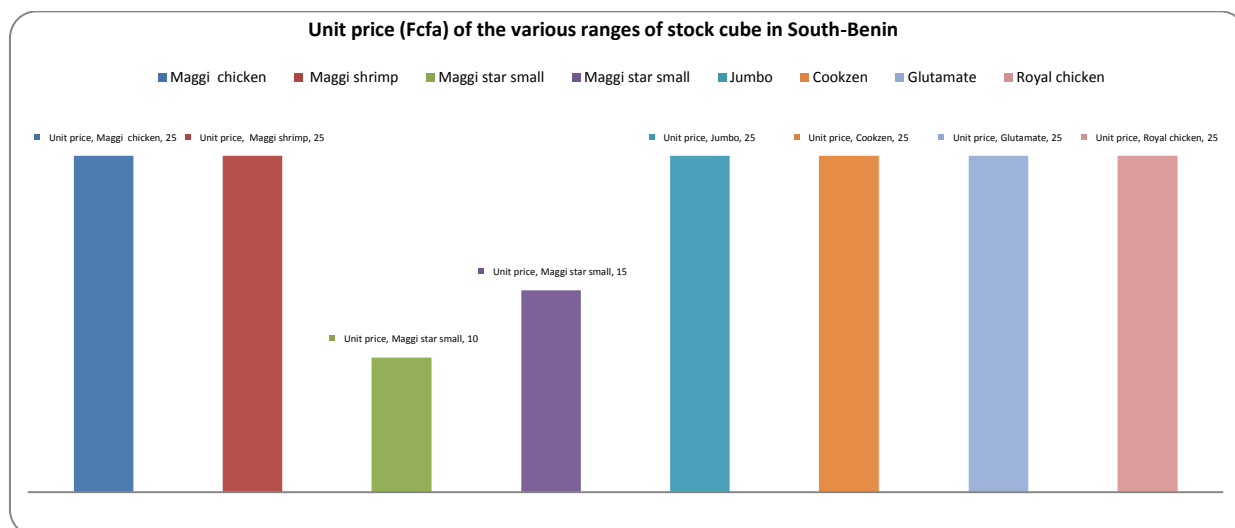


Fig. 2: Diagram of distribution of the unit price of some range of dressing soups commonly named "cubes" in the South-Benin.

feminine (to see fig. 1) because all actors of this path are the women who exercise their activities within the different markets investigated.

The investigation towards purchasers in the markets, and of the saleswomen of food within the markets, shows that maggi chicken and cookzen are the most sold and bought ranges. For the majority of the saleswomen, markets of Cotonou, they are the natives of Niger who have a particular preference for the range cookzen. And several reasons justify their choices: inter alia reasons, this last is very soft, and in modest amount it very quickly raises the taste of the preparations on the one hand, and on the other hand, this range left lately and thus would profit from the advantages from new technologies from manufacturing from the "cubes". Also, it is not easy to distinguish its flavour and its flavour in the middle of the preparations; this fact however is not appreciated by some not inquired.

In addition, certain consumers have a preference for the range maggi chicken and maggi star because of the seniority of this range. That is justified by their use which was transmitted from generation to generation (of mother as a girl). Moreover, flavour, the taste and the odor of these products are perceived very quickly in the preparations which are not exaggeratedly soft at the end of cookings contrary to the other ranges.

Analysis of the components entering the formulation of the commonly called stocks of "cubic" seasoning, shows that the basic ingredient used in the majority of the ranges is the chicken flesh; then the prawns, and seldom the crabmeat and of horse come. Also, the suction pipes of taste glutamate and salt are always present there. This choice of the manufacturers could be justified by the fact that L-glutamate which confers the delicious taste on food is naturally present and abundant in many food including the vegetables (tomato, potato, carrot, cabbages, green tea...), the seafoods (fishes, algae,

prawns, crabs, oysters...), the meat (ox, pig, chicken) and the cheese ([10]; [11]; [12]; [13] named by Boutry 2010). The face 2 shows the unit price of the different ranges of dressing soup commonly named cube in the South-Benin.

In all the markets (Cotonou and Calavi), the selling price of the various ranges is the same one on the level of all the surveyed saleswomen (fig. 2). But we observed a small difference on the "small" level of the range maggi star which is sometimes yielded to the consumer with 10fcfa the unit, sometimes to 25fcfa two shelves; sometimes a shelf is yielded to 15fcfa. In addition, on a package, i.e between a batch of sixty (60) shelves of "cube", the benefit carried out varies between 300fcfa and 500fcfa and each saleswoman detailing manage to run out to five (5) packages per day in period of festival or vacancies. Indeed, a saleswoman, nice and pleasant, quite accessible having important customers, manages to run out to five (5) packages per day, otherwise the flow turns around two and three packages, is a hundred and twenty (120) to a hundred and four twenty (180) shelves of "cubes" per day and carries out on average a benefit which is between (six hundred franc) (600Fcfa) to thousand five hundred franc (1500Fcfa) per day. The reasons which justify this choice of trade are multiple and multiform for the ones, the presence of the cubes on the displays attracts the customers, for the others, the presence of the "cubes" allows the sale of the other products and for others still even if per day the other products are not bought these "cubes" always make object of sale especially at unquestionable time of day between 10:00 and 12:00 the morning and 16:00 and 19:00 the evening.

These products are bought in detail, or wholesale in the markets of Missebo or Gbogbanou or Tokpa for all the ranges safe for the ranges maggi chicken, maggi star, maggi prawn, cica and jumbo where agents salesmen engaged by the company come to distribute their

products to the saleswomen of the markets. Under these conditions, a formal prohibition is made to the saleswomen compared to the sale of the other ranges described as against ways; otherwise the products are seized in the saleswoman who carries out only debt. The primary reason which justifies the consumption of the “cubes” is the research of the delicious taste. That can be explained by the fact why the men are familiarized with the taste of L-glutamate and the umami at the beginning of their life and this with concentrations found in many food [14]. Indeed, Japanese soup “konbu dashi” compared with mother's milk shows that this one has a similar content of L-glutamate [15]. The “cube” for some reveals the taste of the culinary preparation quickly. That goes without saying because in 2012 a study was conducted by Tossou on the use of sauces of seasoning to Benin and that reveals that the restaurants and bar which use prawns or the small fishes and the spices to season their meals still associate and always the cubes counts held of the taste umami (soft) searched and appreciated by their customers on the one hand and as account held of the realization of profit as they aim on the other hand [9]. The faces 3, 4 and 5 following show the distribution of the consumers and sellers respectively according to their age.

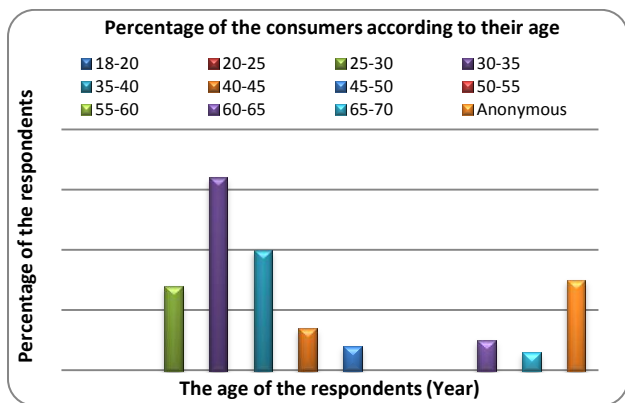


Fig. 3: Diagram of distribution of the consumers of dressing soup commonly named cube in the South-Benin according to age.

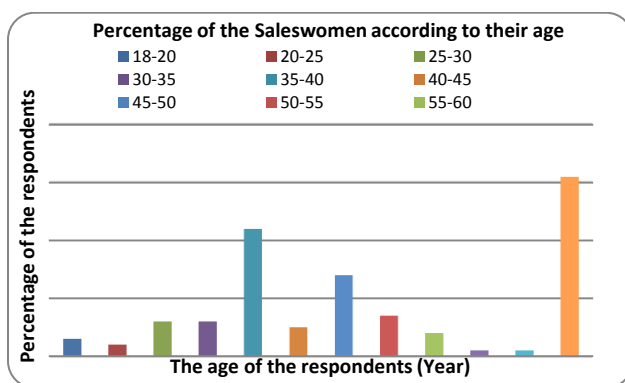


Fig. 4: Diagram of distribution of the saleswomen of dressing soup commonly named cube in the South-Benin within the markets according to age.

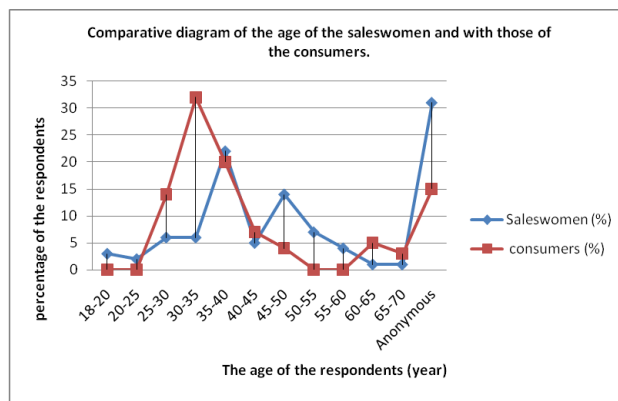


Fig. 5: Comparative curves of the age of the saleswomen and the consumers of dressing soup commonly named cube in the South-Benin.

The age of surveyed varies between 25 years and 60 years for the saleswomen of the various markets (see fig.4); between 18 years and 60 years for the various consumers (see fig.3); between 12 years and 50 years for the purchasers of food and the dishes cooked for those and those which know with precision their birth date and which answered the questions at the time of the investigations. The comparative analysis of the age of the saleswomen and the consumers of dressing soup commonly named cube in the South-Benin (to see fig.5) watch that is at least 20ans to be actor of the path of merchandising of these sapidity products. It justifies itself by the fact that this trade transmits itself of mother in girl because of the number restricts place within the markets. Indeed, in the age bracket 40 years - 60 years, are certain people with whom it consumption of the “cubes” is prohibited and that following the firm prohibition prescribed by their doctors following repeated crises of certain chronic diseases such as the chronic hypertension, diabetes, tiredness and headaches to quote only these. This report is similar to the phenomenon of the syndromes of the Chinese restaurants ([16]; [17]). But searches it delicious taste the growth sometimes not to comply with this regulation because the use became a reflex and they use it in an unconscious way at times given during the kitchen. In this portion of age (45 years at 60 years), a good amount of between them were cooker of the “white” and they affirm in a unanimous way which they never met its “cubes” at the time of their service near Europeans. Indeed, the l-glutamate that it is free or dependent is present in the “cubes” but the consumption of L-glutamate is very low in Europe [18].

The investigation towards saleswomen of the elementary schools, the establishments, the private public colleges and the surroundings of the health center and certain public places (sports ground, dismay them public voices, churches) shows that the “cubes” usually use the preparations of the meals such as crackling, sandwich, white rice, rice with the fat, creole rice, red batter, all kinds of sauces (tomato sauce, sauce vegetable,

squeaky fiddle, okra, walnut of crab apple, of palm, bean). A new practice coming especially from the women saleswomen of Tokpa is that which consists in using the cubes to accompany any kind of meal because they estimate that cooking decreases a little the effect of the "cubes" and also that raises the flavour of the meal and causes the appetite more. They associate them when it is the meals like "monyò", sauce vegetable, rice, bread, dish of salad, avocado and others. That is justified by the fact that the saleswomen of these meals do not put any sufficiently to satisfy their taste (sapidité).

The flavour maggi is especially used in the cafeterias and in the salesmen of smoked and braised meat commonly called "chichaga" in Benin. They use it to reveal the color, flavour and flavour (odor) of the aforesaid products. What satisfies the appetite well with the consumers who ask some sometimes with pepper.

The conducted investigation, into the source of the "cubes" known under the term of stock of seasoning and of suction pipe of taste in Benin, reveals that her last come primarily from the countries such as Switzerland [19], France, Italy, Togo [20], Ivory Coast, Lebanon, Nigeria [21], Senegal, South Africa, Spain [22], Belgium, Netherlands [23], China ([24]; [25]), and are grouped under the name of preparations presented in the forms of shelves, breads or cubes [26]. The imported quantities increase unceasingly increasing year by year. The saleswomen of foods associate "lanhouin" as secret agent with the "cubes" to improve the flavor of their food taking into account the scent this last what attracts even more the customers. This practice enters gradually the population which is not "mined" but which sells to eat on the public spot or private.

Conclusion

This study enabled us to know the various ranges of stocks of seasoning sold to south-Benin. Among all the listed ranges, the ranges maggi and cookzen are sold, consumed and preferred. These stocks of seasoning are used in all the culinary preparations nowadays in south-Benin. The majority of the investigations is in search of soft flavour and is conscious of the risks which the abusive use of these products can cause for health. Nevertheless, it precedes the satisfaction of the gustatory pleasures compared to the long-term consequences for their health. It is then urgent to show in other studies, the physiological and metabolic effects in term of benefit/risks of consumption of the "cubes".

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References

- [1]. M.P. ARVY et F. GALLOUIN, (2003), *Epices, aromates et condiments*; Berlin, ISBN 2701130638.
- [2]. F. COUPLAN, DELACHAUX et NIESTLE, (1999), *Guide des condiments et épices du monde*; Lausanne ; 139p.
- [3]. CODEX, (2001), *Norme sur les bouillons et/ou consommés*; Codex Stan 117-1981, Rév. 2-2001; 7p.
- [4]. LAROUSSE, (2013), *Dictionnaire*, imprimé en France, 2066p.
- [5]. B. LINDEMANN and Y. OGIWARA, (2002), The discovery of umami, *Chem Senses* 27(9): 843-4.
- [6]. K. IKEDA, (2002), New seasonings, *Chem Senses* 27(9): 847-849.
- [7]. C. BOUTRY, (2010), *Influence d'une supplémentation en monosodiumglutamate sur la physiologie gastro-intestinale et le métabolisme chez le rat et l'homme*. Thèse de doctorat, l'Institut des Sciences et Industries du Vivant et de l'Environnement (AgroParisTech); UMR914INRA-AgroParisTech Physiologie de la Nutrition et du Comportement Alimentaire, 16 rue Claude Bernard, 75231 Paris, 125p.
- [8]. K. KURIHARA, (2009), Glutamate: from discovery as a food flavor to role as a basic taste (umami), *Am J Clin Nutr* 90(3):719S-722S.
- [9]. T. C. L. TOSSOU, (2012), *Formulation d'une sauce d'assaisonnement à base d'autolysat de poisson fermenté au Bénin*. Thèse pour l'obtention du diplôme de master en Microbiologie et Technologie Alimentaire, FAST, Université d'Abomey – Calavi (UAC), Bénin. 60p.
- [10]. J. C. DILLON, (1991), L'acide glutamique, *Cahier de nutrition et de diététique* 26(2) :157-162.
- [11]. F. BELLISLE, (1999), Glutamate and umami taste: sensory, metabolic, nutritional and behavioural considerations, a review of the literature published in the last 10 years, *Neurosci Biobehav Rev* 23(3):423-38.
- [12]. K. KURIHARA and M. KASHIWAYANAGI, (2000), Physiological studies on umami taste, *J Nutr* 130 (4S Suppl): 931S-4S.
- [13]. G. EISENBRAND, (2006), The potential involvement of glutamate ingestion in chronic neurodegenerative diseases. Opinion of the Senate Commission on Food Safety (SKLM) of the German Research Foundation (DFG)-(shortened version), *Mol Nutr Food Res* 50 (12): 1239-43.
- [14]. C. BOUTRY and C. BOS, (2008), Les besoins en acides aminés, *Nutr Clin Met* 22: 151-60.
- [15]. H. N. MALLICK, (2007), Understanding safety of glutamate in food and brain, *Indian J Physiol Pharmacol* 51(3): 216-34.
- [16]. H.H. SCHAUMBURG and R. BYCK, (1969), Monosodium L-glutamate: its pharmacology and role in the Chinese restaurant syndrome, *Science* 163(869):826-8.
- [17]. A. N. WILLIAMS and K. M. WOESSNER, (2009), Monosodium glutamate allergy: menace or myth? *Clin Exp Allergy* 39(5):640-6.
- [18]. R. S. GEHA and A. BEISER, (2000), Review of alleged reaction to monosodium glutamate and outcome of a multicenter double-blind placebo- controlled study, *J Nutr* 130 (4S Suppl): 1058S-62S.
- [19]. INSAE (Institut National de la Statistique et de l'Analyse Economique), (2005), *Annuaire des Statistique du Commerce Extérieur Spécial (SCES)*, Ministère de l'Economie, de la Prospective, du Développement et de l'Evaluation de l'Action Publique (MEPDEAP); Direction des statistiques et Etudes Economiques (DSEE); Statistique du Commerce Extérieur Spécial (SCES), 09.05.01.INS1, pp23.

[20].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2003), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère Chargé du Plan, de la Prospective et du Développement (MCPD); Direction des statistiques et Etudes Economiques (DSEE); Service des Echanges Extérieurs (SEE); Statistique du Commerce Extérieur Spécial (SCES), pp28.

[21].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2008), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère de la Prospective, du Développement, de l'Evaluation des Politiques Publiques et de la Coordination de l'Action Gouvernementale (MPDEPPCAG); Direction des statistiques et Etudes Economiques (DSEE); Statistique du Commerce Extérieur Spécial (SCES), pp47.

[22].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2004), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère Chargé de la Planification et du Développement (MCPD); Direction des statistiques et Etudes Economiques (DSEE); Service des Echanges Extérieurs (SEE), Statistique du Commerce Extérieur Spécial (SCES), pp35.

[23].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2006), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère de l'Economie, de la Prospective, du Développement et de l'Evaluation de l'Action Publique (MEPDEAP); Direction des statistiques et Etudes Economiques (DSEE); Statistique du Commerce Extérieur Spécial (SCES), 09.05.01.INS1, pp36.

[24].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2009), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère de la Prospective, du Développement, de l'Evaluation des Politiques Publiques et de la Coordination de l'Action Gouvernementale (MPDEPPCAG); Direction des statistiques et Etudes Economiques (DSEE); Statistique du Commerce Extérieur Spécial (SCES), pp35.

[25].INSAE (Institut National de la Statistique et de l'Analyse Economique), (2010), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère de la Prospective, du Développement, de l'Evaluation des Politiques Publiques et de la Coordination de l'Action Gouvernementale (MPDEPPCAG); Direction des statistiques et Etudes Economiques (DSEE); Statistique du Commerce Extérieur Spécial (SCES), pp22.

[26]. INSAE (Institut National de la Statistique et de l'Analyse Economique), (2002), Annuaire des Statistique du Commerce Extérieur Spécial (SCES), Ministère Chargé du Plan, de la Prospective et du Développement (MCPD); Direction des statistiques et Etudes Economiques (DSEE); Service des Echanges Extérieurs (SEE); Statistique du Commerce Extérieur Spécial (SCES), pp23.