

**Supply trends and distribution systems of out of home foods from irish potato (*Solanum tuberosum*) in major cities in Yaounde, Cameroon**

**Tendances de l'offre et systèmes de distribution des aliments hors ménage à base de pomme de terre (*Solanum tuberosum*) dans les grandes villes de Yaoundé, Cameroun**

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## ABSTRACT

In the first decade of this century, sub-Saharan Africa made significant strides in reducing famine, having seen a decline in the prevalence and number of undernourished people. However, this prevalence appears to increase between 2015 and 2016, from 20.8 to 22.7%, while the number of undernourished people has increased from 200 to 224 million. Trend reversed with increasing number and prevalence of undernourishment; (FAO, 2017). The urban population reached the highest value in 2017 (55.49%) (World Bank, 2017). Thus, the increase in the population in the large cities of Africa is modifying consumption strategies and the mechanisms of access to foodstuffs to meet demand (AFD, 2016). As a result, non-household consumption in urban areas like Yaoundé has become a common practice for all social classes. An in-depth study based on the taste and the different types of potato dishes revealed the favorite and most consumed dishes by people outside their households. This aimed to improve knowledge on non-household food consumption, as an essential starting point for solving urban food insecurity problems, from potato dishes consumed in urban spaces. It shows that improving local food processing and sales could greatly promote the fight against urban malnutrition and food insecurity in Cameroon.

**Keywords:** Cameroon; out of home consumption; food sales; Solanumtuberosum; food processing

## RESUME

Au cours de la première décennie de ce siècle, l'Afrique subsaharienne a fait des progrès significatifs pour réduire la famine, ayant connu une baisse de la prévalence et du nombre de personnes sous-alimentées. Cependant, cette prévalence semble augmenter entre 2015 et 2016, passant de 20,8 à 22,7%, tandis que le nombre de personnes sous-alimentées est passé de 200 à 224 millions. Tendance inversée avec l'augmentation du nombre et de la prévalence de la sous-alimentation ; (FAO, 2017). La population urbaine atteint en 2017 la valeur la plus élevée (55,49%) (Banque mondiale, 2017). Ainsi, l'augmentation de la population dans les grandes villes d'Afrique modifie les stratégies de consommation et les mécanismes d'accès aux denrées alimentaires pour satisfaire la demande (AFD, 2016). Par conséquent, la consommation hors ménage dans les zones urbaines comme Yaoundé est devenu une pratique courante pour toutes les classes sociales. Une étude approfondie basée sur le goût et les différents types de plats à base de pommes de terre a révélé les plats préférés et les plus consommés par les personnes hors de leurs ménages. Ceci visait à améliorer les connaissances sur la consommation alimentaire hors ménage, en tant que point de départ essentiel pour résoudre les problèmes d'insécurité alimentaire urbaine, des plats aux pommes de terre consommés dans les espaces urbains. Il montre que l'amélioration de la transformation et des ventes alimentaires locales pourrait grandement favoriser la lutte contre la malnutrition urbaine et l'insécurité alimentaire au Cameroun.

**Mots clés:** Cameroun; Consommation hors ménage; Vente d'aliments; Solanumtuberosum. Méthodes de transformation.

## **INTRODUCTION**

Malnutrition and undernutrition is still a major problem in many African countries. Sub-Saharan Africa is noted for high population growth rate, important hunger levels and yet substantial post-harvest losses and low transformation of agricultural products (AFD, 2016). Hence, reducing post-harvest losses and improving food processing can be a strategic way to boost up development and enhance food intake and reduce hunger. In fact, hunger or food insecurity can be directly related to eating habits, food supply and distribution systems. Eating one's meals on streets has become a common habit in the context of urbanization in Africa. The growing demand for meals and food items cooked and sold in streets is partly associated to the phenomenon of migration that brings about the increase of people living alone, generally under difficult conditions with low incomes (FAO, 1997). Thus the role of street food in the functioning of the urban economy reflects survival and a way of life in African cities (FAO, 1997). Urbanization brings about changes in feeding habits, the westernization of diets, inactiveness and change of lifestyle in general (Becquey et al., 2010). Towns are the driving force behind the economic growth, but the urban area is shared by a varieties of activities 's users, from informal sector towards formal sector (CEA, 2017).

Thus, food sufficiency (autonomy) necessitates a contextualization of this challenge. Indeed, the problem is closely related to the environment, social, cultural, food landscape and dietary patterns of each country. City dwellers of developing countries will more than double between 2000 and 2015 (Becquey et al., 2010, FAO et al., 2017). The environment and the accessibility to food stuffs play an important role in the choice of a person's food. . This uncontrolled urbanization is accompanied by changes in eating habits like demand for more processed foods and out of home food consumption. (Becquey et al., 2010, Akoa et al., 2017). Access to cooked food out of the home is still unreliable or inexistent on the one hand, or less popularized on the other hand. City dwellers of developing countries will more than double between 2000 and 2015 (Becquey et al., 2010, FAO et al., 2017).

Since its arrival in Cameroon, Irish potato got easily adopted in the eating habits of both rural and urban populations the West, Adamaoua, Extreme-North, West and North-West regions have favourable ecological zones for the cultivation of Irish potatoes, followed by the. The world's production stands at 385 million tons in 2014 (FAO, 2014), that makes it the fifth most planted crop after sugar cane, maize, rice and wheat.

Irish potatoes consumption out of the home is more and more widespread including its commercialization, which has become popular for decades in Cameroon. Is it gradually becoming a stable dish in restaurants in urban areas like Yaounde, thanks to the presence of various food sales points that facilitate rapid consumption such as restaurant, “tourne-dos”, etc? Eating out of home It’s advantageous as households spend less time cooking their meals? -and yet how about an access to ready-to-eat food and food that they may not be able to cook themselves? A plat of cooked food represents the final stage of food transformation, which helps to gain considerable time for some people, whereas it is a way of consuming meal that are difficult to cook at home.

First, the aim of this study was to highlight the main food items obtained from Irish potatoes available in markets and commercial centres;

Second, the most consumed meals by consumers out of home; Third, analyze the potentials of these products; Fourth, identify the qualities/characteristics that consumers desire out of home from Irish potatoes transformed products in order to discover the potentialities of vulgarizing the commercialization of the new Irish potato dishes.

## ***1. Methodology***

### ***1.1.Presentation of the study area***

Yaounde is the centre regional headquarter and the political capital of Cameroon. According to the last census results of the population and housing done in 2015, its population is estimated at about 2.765.568 inhabitants with an annual average growth rate which stands at 5.7% (INS, 2012). It has a surface area of 297km<sup>2</sup> (INS, 2012) giving a population density of 6336.3 inhab./km<sup>2</sup>. Yaounde is located more in urban area and Mfoundi is its divisional headquarter inhabited by a cosmopolitan population made up of the country’s major ethnic groups (Sudano-Sahelian, Fang-Beti, Grassfields and Sawas) including foreigners (Akoa-Etoa et al, 2017). Its climate is tropical and humid, the level of industrialisation is mean. The town is divided into seven sub-divisions which are: Yaounde I, Yaounde II, Yaounde III, Yaounde IV, Yaounde V, Yaounde VI and YaoundeVII (figure 1).

### ***1.2.Choice of study areas and data collection***

The study was done in the centre region mainly in 02 sub-divisions: Yaounde I and II. They were chosen after several preliminary visits on the field. Worth noting is the fact that the survey was carried out in 3 stages: first of all an explorative survey done in the districts found

in the Mfoundi division. The objective was to make an inventory of commercial locations and the types of dishes ready for consumption made from Irish potatoes, to meet heads of enterprises (restaurant owners), those in charge of “tourne-dos” etc. That was followed by a second survey carried out in the office for the training of investigators then followed by field work with a questionnaire aimed at testing the level of understanding of investigators on the questions proposed, and then readjusting those that seemed to have much impact on the people investigated upon, testing the accessibility to customers who always seemed not comfortable because they were either on break or on transit and did not have much time for the surveyors/investigators, finding the best strategies for the main enquiry with appropriate and applicable questionnaires to obtain reliable information and especially to involve several social classes.

To gather the necessary information for this study, we first of all collected secondary data (that is existing data through literature review, internet research, scientific publications) followed by primary data (that is, direct data collected by us for this study). Quantitative primary data essentially focused on describing types of restaurants, Irish potato by-products cooked and sold, the general prices that involved the buying of a plate of food proposed by the restaurants to consumers. To do this, the use of the sampling method through quotas/limited quantity or opinion polls through alternative choice was most appropriate because of the absence of an official register/repertory of Irish potatoes consumers in restaurants in the city’s capital, Yaounde.

We chosed to carry out the enquiry mainly in highly concentrated areas where the consumption of Irish potato was so important (road junctions, major markets, commercial areas).Therefore, Akoa et al., (2017) show that it is easy to come across sales points of dishes ready for consumption. This assertion was proven thanks to the exploratory primary enquiry carried out previously by 7 highly qualified surveyors/investigators in the 7 divisions of Mfoundi. As the survey was being carried out, some divisions were dropped off because of the non-commercialisation of Irish potato by-products in a consistent manner. Sampling by an adopted alternative choice is a method that depends on the hypothesis of the correlation of the different features of the population (Graiss, 2003), it explains the selected sample in a way that presents a statistical distribution of certain features, selected at will, identical to that of the population in which it was collected. It is very likely for it to be very close to the population concerning the other features.

Concerning the survey, a selection of districts and restaurants in which it was likely to meet Irish potato consumers was done with open questionnaires to enable those investigated upon to better express themselves. In addition, to unveil hidden information which could not be accessed/discovered through variables proposed in advance by the surveyors, followed by semi-open questions for this study, 125 people in Yaounde I and 90 in Yaounde 2 were investigated upon.

**Table 1: Quarters per district in Mfoundi**

Districts	Quarters	Selected zones
Yaounde I	Bastos, Emanas, EtoaMeki, Etoudi, Olembe, Mballa II, Nlongkak, EligEdzoa, Nkol-Eton, Commerical Centre	Bastos, Emanas, EtoaMeki, Etoudi, Olembe, Mballa II, Nlongkak, EligEdzoa, Nkol Eton, Commercial Centre
Yaounde II	Tsinga, Nkomkana, Messa, Madagascar, Briqueterie, Carriere, Cite Verte, Mokolo, Mbankolo.	Tsinga, Nkomkana, Messa, Madagascar, Briqueterie, Carriere, Cite Verte, Mokolo, Mbankolo
Yaounde III	NgoaEkelle, Ahala, Nsimeyong, Obili, Nsam, Obobogo, Efoulan, Dakar, Olezoa, Mvolye, AfanoYoa	
Yaounde IV	Mimboman, Ndamvout, Nkoldongo, Awae, Nkomo, Ekounou, Ekie, Mvan, Kongengui, Odza, Messamendongo, Biteng, Ekoumdoum, Auguissa, Foundassi, Mvog-Ada.	
Yaounde V	Ngoussou, Mfandena, Nkol-Ebogo, Essos, Nkol-Ebong, Mvog-Ebanda, Nkoumayat	
Yaounde VI	Melen, Biyem-AssiMvog-Betsi, Elig-Effa, Etoug-Ebe, Simbock, Nkolbikok, Mendong.	
Yaounde VII	Minkoameyos, Nkol-Afame, Oyom-Abang, Etetak, Nkolbisson.	

Source: From the 3<sup>rd</sup> General Population and Housing census (GPHC), Yaoundé 7 council, Cameroon

### *1.3.Data analysis*

Data collected underwent a descriptive analysis with emphasis on participants, recurrence, average, space/ gap-types, very small and very big. Softwares used were SPSS 16.0 for the treatment of quantitative data, descriptive statistics, sphinx ME11 and EXCEL 2013 for the treatment of qualitative data and content analysis.

## *2. Customer's Socio-demographic statuses*

In this study based on Irish potato consumption out of home, many types of restaurants were identified. They were as follows: African (46%), street sellers/ "Tourne-dos" (28.80%), followed by Western-oriented ones (10.70%), very few hotels (2.30%) and some supermarkets (2.80%). Other statistics already show that among the 215 people questioned, this study demonstrates the predominance of males (64%) over females (36%). Besides that, 61.6% unmarried/singles, 33.2% married and monogamous, 1.9% polygamists, a few divorces (0.5%) and also (1.5%) widowers. In general, the customers are mostly singles (61.6%) and married monogamists (33%), some widowers (3%) and married polygamists (2%).

Worth noting is the fact that customers of this product in the course of this study are people from different horizons of Irish potatoes cultivation, and also of non-producing zones who share common eating habits thanks to this cultural exchange, and average prices affordable to the consumers in restaurants.

The customers were essentially made up of family heads (51.9%) and other members (48.1%). The population consisted of the major ethnic groups of Cameroon of both sexes such as the Fang-Beti (45%; 46%), followed by the grassfield (42%; 40%), the Sudano-Sahelians (7%; 5%) and finally the Sawas (6%; 9%). The customers were mainly youths/young people. Concerning the customers' ages, most ranged between [28-33] (30.40%), followed by youths of [22-27] (23.40%) and then people whose ages varied between [34]39] (14.80%) et [40-45] (14.00%) and another age group of 52 and above (4.30%).

The average age of the customers was 33 years, which shows that they were relatively young. The majority of the customers were intellectuals: 41% (of the academic), 28% (secondary second cycle) and 22% (secondary first cycle) whose average family size was 6 people. We equally had a great number of customers whose household size was less than 5 people (54%), followed by customers with a home whose number of people was 5-8 people (36%), then

homes from 9-11 persons (6%) and finally persons whose household was more than 11 persons (4%).

**Table 2: Socio-demographic analysis of Irish Potato consumers out of homes.**

Division of types of restaurants			
Description of supply zones by customers	Option	Number	%
	African restaurant	99	46%
	Western Restaurant	23	10,70%
	Hotel Restaurant	5	2,30%
	Street seller Tournedos	62	28.80%
	Super market Bakery	6	2.80%
	Snack-bar	18	8.40%
	Other (specify)	2	0.90%
Distribution of Irish potato customers by gender			
Sex		Number	%
	Male	138	64.2%
	Female	77	%
	Total	215	100.0%
Division of customers pre-matrimonial status			
(Marital status)		Number	%
	Single	130	61.6%
	Married (monogamous)	70	33.2%
	Married polygamous	4	1.9%
	Divorce	1	0.5%
	Widow/widowers	6	2.8%
	No answer	4	1.9%
	Total	215	100.0%
Division of customers per-position in household			
Position in the household		Number	%
	Family head	110	51.9%



	Non family head	102	48.1%
	No answer	3	1.4%
	Total	215	100.0%
Division of customers pen ethnic group		Male	Female
customers origins/sex	Fang-Beti	45%	46%
	Grass fields	42%	40%
	Sawa	6%	9%
	Soudano-Sahelien	7%	5%
	Total	100%	100%
Division of customer per age group		Number	%
Age group (years)	≤21 ages	16	7.50%
	[22-27]	50	23.40%
	[28-33]	65	30.40%
	[34-39]	32	14.80%
	[40-45]	30	14.00%
	[46-51]	13	6.20%
Total	52 years and above	9	4.30%
Distribution of customers by socio-professional group		Number	%
Level of education	No level	3	1.40%
	Nursery	1	0.50%
	Primary	18	8.00%
	Secondary	46	21.60%
	High School	59	27.70%
	University	88	40.80%
	Total	215	100.00%
Distribution of customers per family size		Number	%
Size of household	Less than 5 persons	116	54%
	5-8 Persons	78	36%
	9-11 Persons	13	6%

	More than 11 persons	8	4%
	Total	215	100%

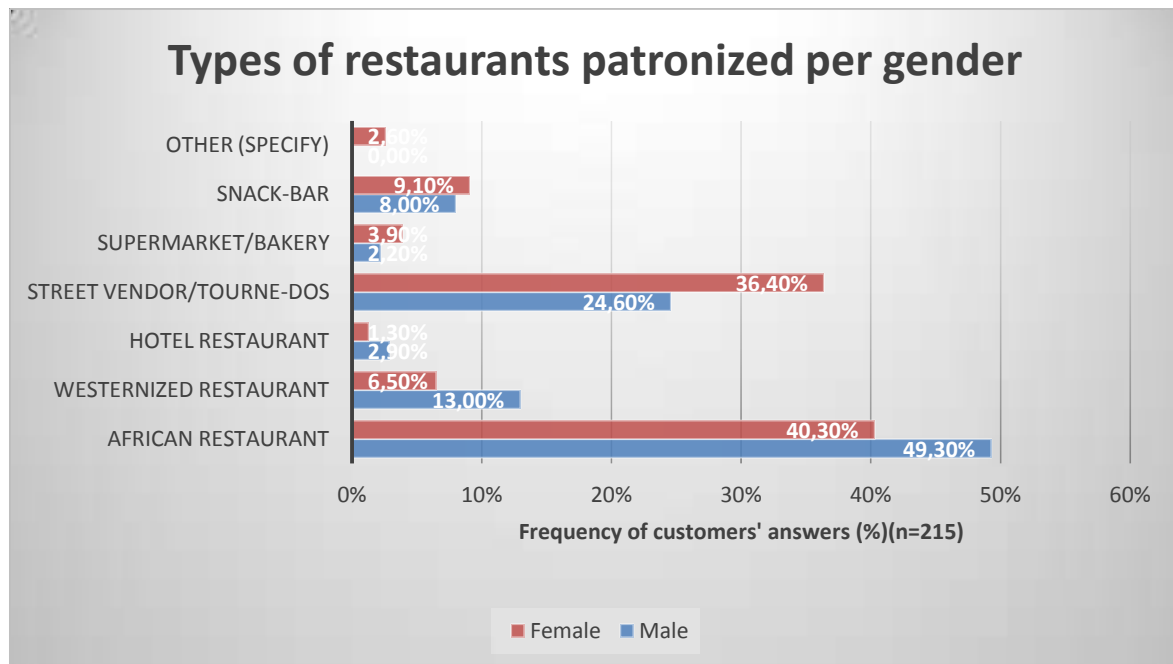
Source: Authors

### 3. Identification of dishes cooked and accessibility to dishes by customers

#### 3.1. General Presentation

This study has as objective to identify Irish potato consumers in the major conglomerates in the city of Yaounde. The first discovery was that more men than women consumed dishes cooked out of the home in African restaurants as follows Figure 2 listed on page 12: men (49.30%) and women (40.30%) respectively. In restaurants known as “tourne-dos” they are more women (36.40%) than men (24.60%). Very few women eat in Western type restaurants (6.50%) as compared to men (13.00%), including snack-bars where there are so many women (9.10%) than men (8.00%). The consumption of dishes is varied here, because of the ethnic groups which are represented there and their influence on eating habits. In general, following Figure 1 listed on page 10 below, the modalities indicate that most consumers in restaurants are women. It is true that among the seven modalities only three are represented in them by men though there is no wide margin from the percentage. The khi-two tests on the types of restaurants patronized per gender shows that the ddl value of Pearson’s Khi-two stands at 9.939a, the ddl stands at 6 and an asymptotic (bilateral) signification is 0.127. A similar report of 10.6, its ddl of 6 and a symptotic (bilateral signification of 0.102, finally its (linear) association per (linear/straight) whose value is 4.55 and ddl is 1 asymptotic (bilateral) signification/meaning of 0.033; has 6 cells (42.9%) have a theoretical number lower than 5. The minimum theoretical size stands at 0.72. The most consumed dish in Yaounde I district is fried irish potatoes (54%), followed by porridge potato (25%), pounded irish potato with beans (pile) (13%), lastly, pepper soup irish potato. There are very few dishes such as steamed irish potato (1%), freezed irish potato (1%), stewed irish potato (1%) and also potato chips (1%). Concerning Yaounde II district, it is still fried irish potatoes that occupy the first position (49%), but the second position is pounded potatoes, “pile” (22%) then stewed irish potatoes (21%), there is irish potato mash/purce but just (2%).

Figure 1: Types of restaurants patronized per gender



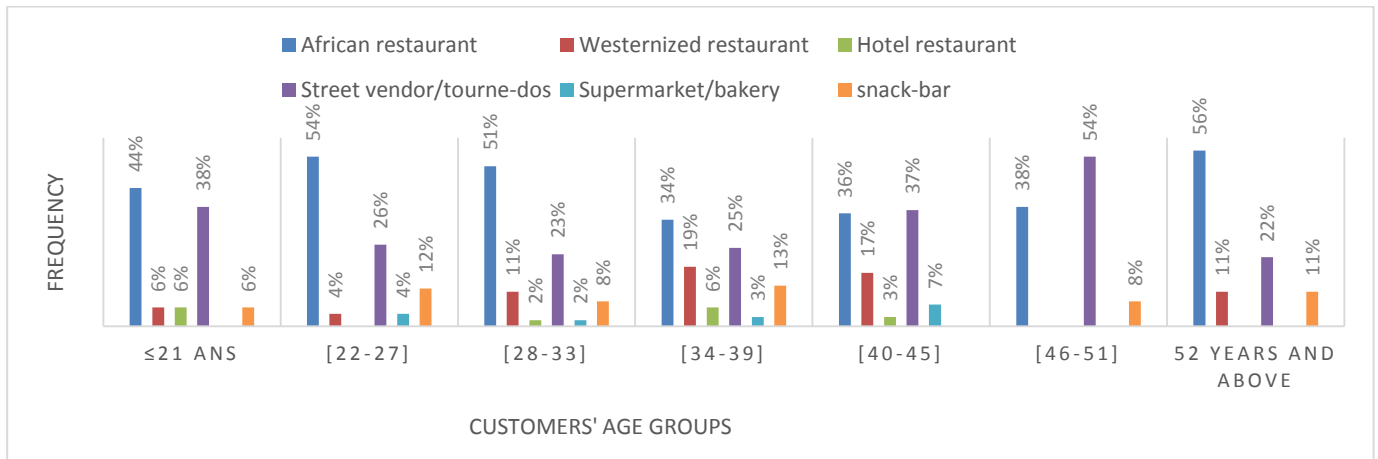
Source : Authors

Figure 2 listed on page 12 represents the different restaurants of our specimen according to customers' age groups. It demonstrates that customers generally like to patronize African restaurants and "tourney-do" or makeshift restaurants, not only because of the type of dishes served, which they know and are part of their eating habit, but also because of the prices of irish potato dishes, which for some are affordable. This shows that makeshift restaurants/ "tourney-dos" and African ones are the most patronized places by consumers, although services rendered customers is not the same in the variety of restaurants. Hotel restaurants are not really represented in this study. For some customers, these restaurants are visited/patronized to eat other dishes, with prices that are not affordable to all social classes. The age groups between 52 and more is very high with consumers in African restaurants (56%), followed by "tourney-dos" (22%). Worth noting is the age group between [46-51] where the "tourney-dos" comes first (54%) as against (38%) for African restaurants. It is the same representation done with customers whose ages range between [40-45] (37%, 36%).

As for Khi-two, it reveals that pearson'skhi-two has a 32.086a value, a 36 ddl alongside an asymptotic (bilateral) signification of 0.655; a verisimilitude of 36.774, a 36ddl and an asymptotic (bilateral) significance of 0.433 and finally a linear by linear association/link of

0.099 and 1 ddl. The asymptotic (bilateral) significance is 0.753 to 36 cells (73.5%) have an inferior theoretical size to 5. The minimum theoretical size stands at 0.08.

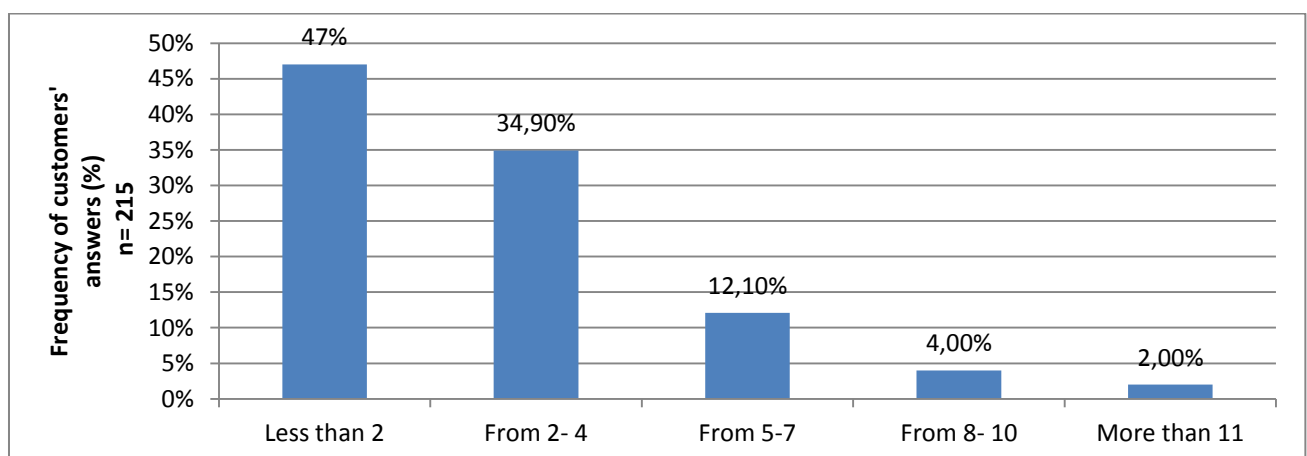
**Figure 2: Types of restaurants visited according to customer’s age groups**



*Source : Authors*

Figure 3 listed on page 12, Consumers in urban areas most often prefer to buy or provide themselves food from the informal sector because prices are affordable and the availability of the product (Romanik, 2005). Dishes proposed to customers are not generally affordable to all since our study reveals that a majority of customers believe that prices of dishes made from Irish potatoes are affordable (85.5%) as against a minority who think that the prices are not affordable (14.50%). Thus, the consumption of dishes made from Irish potato per month is done at different intervals by customers in restaurants. A majority of consumers eat Irish potatoes less than twice per month (47.0%), then 2-4 times (34.90%), 5-7 times (12.10%), fewer customers eat it that is 8-10 times (4.00%), and more than 11 times (2.00%)

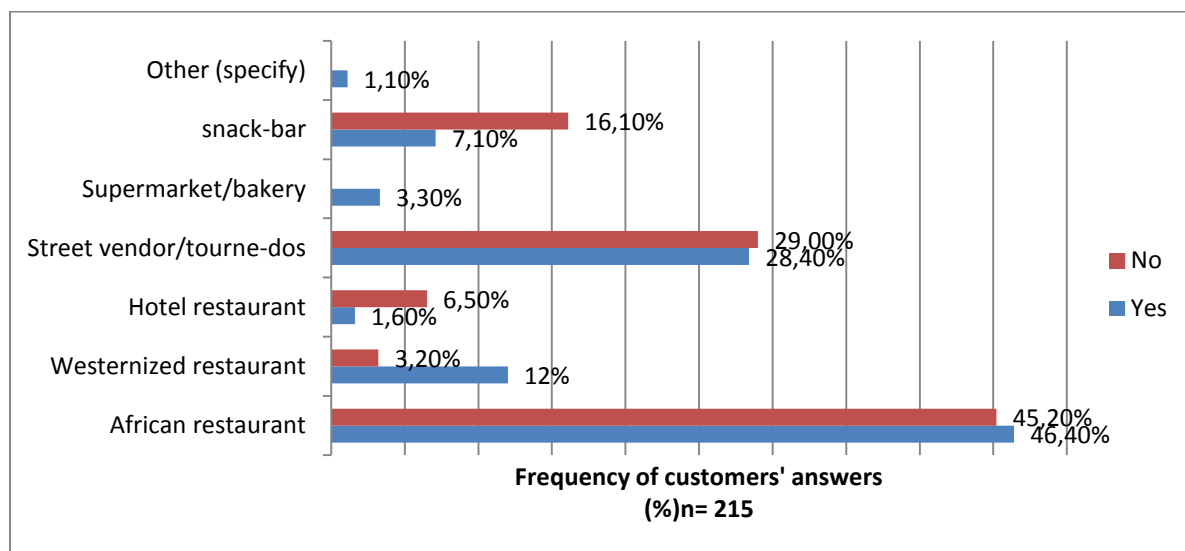
**Figure 3: Buying frequency of Irish potato by-products by customers in a month**



*Source: Authors*

Figure 4 listed on page 13 presents a comparative study on the evaluation of prices per type of restaurant visited by customers. What is most evident/probable is that some customers (45.20%) consider prices of dishes cooked in African restaurants not accessible to all, whereas another group of customers find them affordable (46.40%). This figure equally shows that in make shift restaurants commonly known as “tourne-dos”, few customers (28.40%) did find prices affordable as against a majority of customers who rather considered them costly (29.00%). In snack-bars, more customers said the prices per dish were affordable (16.10%) and a good number found no problem with the prices (7.10%).

**Figure 4: Customer’s evaluation of prices per dish in the different types of restaurants.**

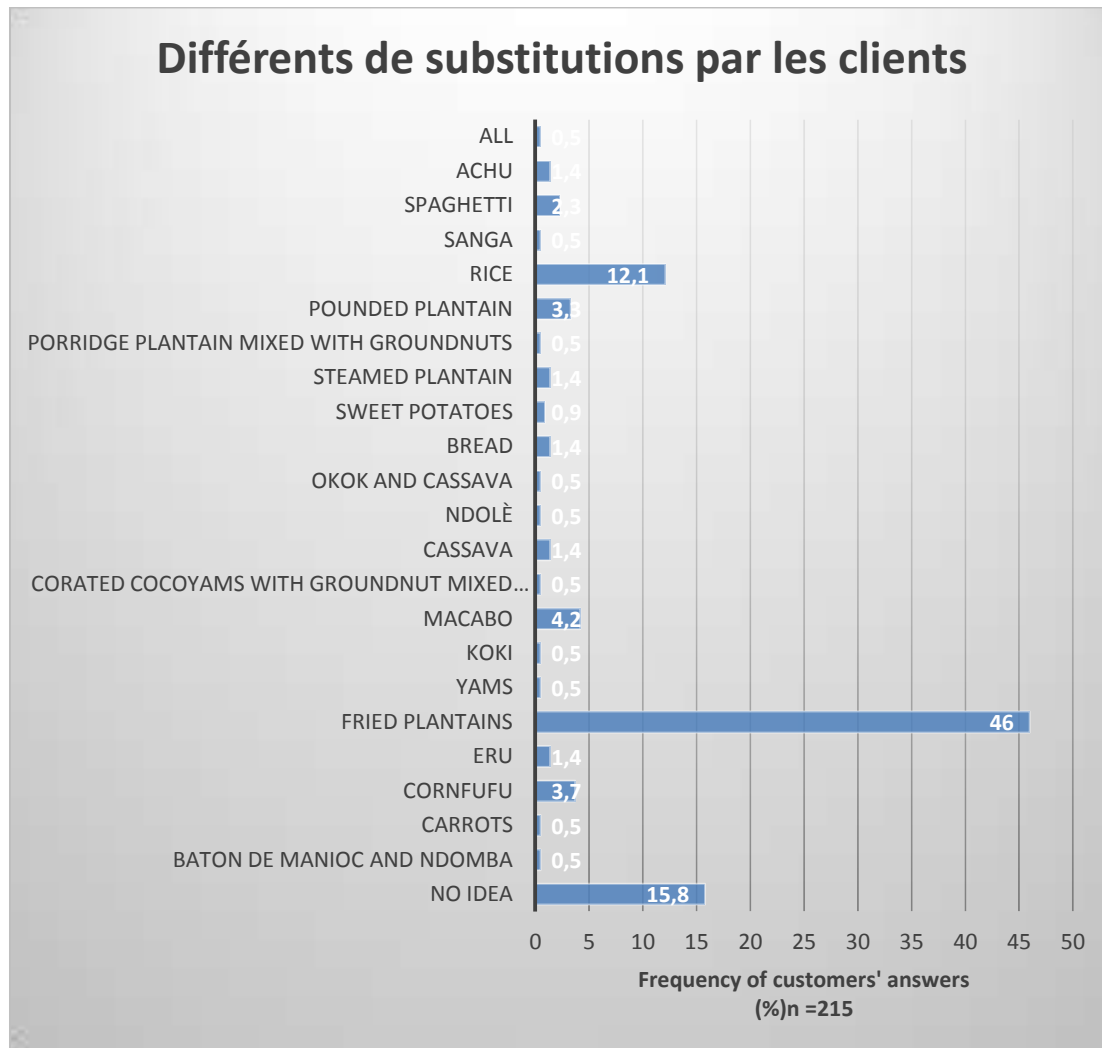


**Source: Authors**

### 3.2.Substitution of dishes and evaluation of their prices in restaurants

Figure 5 listed on page 15 shows the different substitution dishes consumed by customers in the absence of meals made from Irish potato. They are fried plantains (46%), the most solicited/demanded when irish potatoes is not available, followed by rice (12.1%), cocoyams (4.2%), pounded plantain (3.3%), porridge plantain with groundnuts (0.5%), spaghetti (2.3%), Sanga (0.5%), Okok and cassava (0.5%), Koki (0.5%), achu (1.4%), steamed plantain (1.4%), sweet potatoes (0.9%), bread (1.4%), “ndole” (0.5%), cassava (1.4%), grated cocoyam with okro and groundnut sauce (0.5%), yams (0.5%), eru (1.4%), corn fufu (3.7%), carrot (0.5%), baton de manioc and ndomba (0.5%).

**Figure 5: Different dishes that replace Irish potatoes**



*Source :Authors*

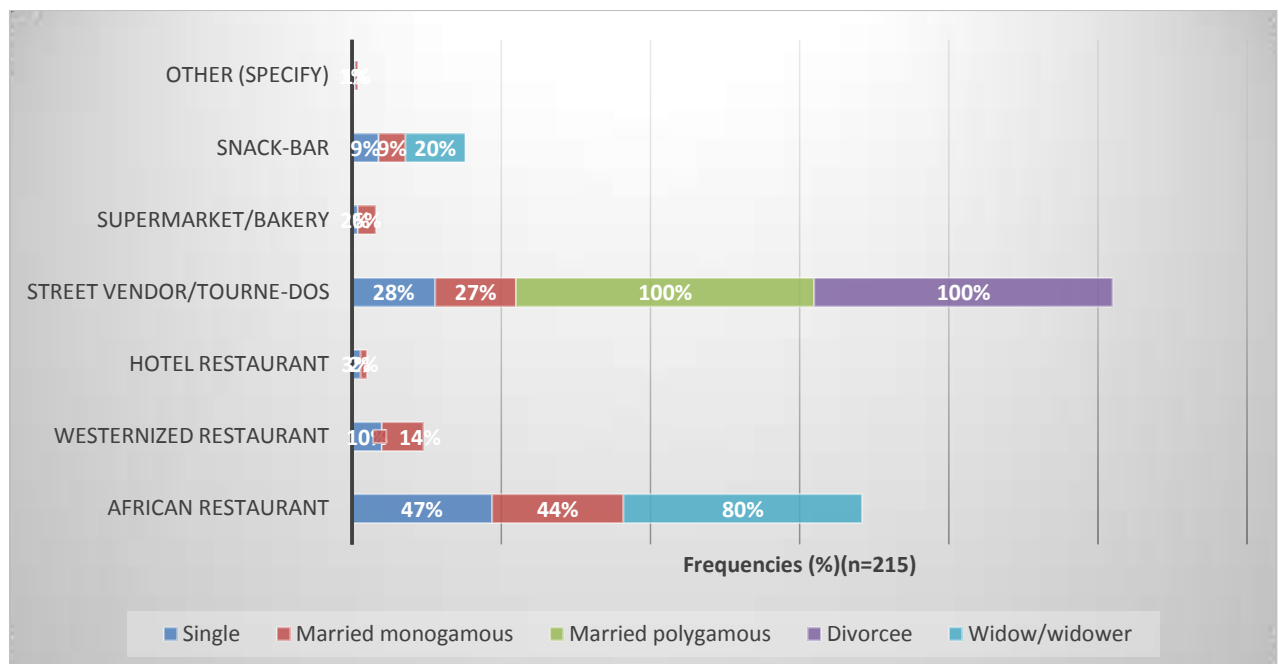
It is also worth noting that during this study, Figure 6 listed on page 16, customers also raised some concerns about the dishes prepared. First of all, a majority had no problems with the different dishes sold (78.5%) as compared to a minority who considered that the meals sold were either of bad quality (11.1%), poorly cooked (5.3%), cold meals were served (1.7%), Irish potatoes were dark in colour (1.3%), scarcity of the dish at times in restaurants (0.9%) and the dish was costly (0.8%).

To overcome these challenges on the quality of dishes consumed in restaurants, the same customers proposed solutions. first of all, a majority of them had problem and 50 proposed no solution (87.4%), followed by a few customers who proposed an awareness campaign on the quality and the variety to be commercialized (5.1%), improve upon the quality of cooked Irish

potatoes through practical training (4.2%), or getting quality Irish potatoes on the market (2.3%).

Figure 6 presents types of restaurants visited by customers in relation to their matrimonial statuses. Divorcees (100%), married polygamists (100%) all patronize makeshift/tourne-dos, whereas a few monogamously married persons (27%) and finally singles (28%). As far as African restaurants are concerned, a good number of widowers really like to patronize them (80%), and some singles (47%), followed by married monogamists (44%). In snack-bars, a few widowers go there (20%) and also married monogamists (9%) and singles (9%). Unfortunately, westernized restaurants are hardly patronized by monogamous married persons (14%) and singles (10%), including supermarkets, monogamous married persons (6%), singles (2%) and hotel restaurants singles (3%), monogamous married persons (2%).

**Figure 6: Types of restaurants visited and matrimonial status of customers.**



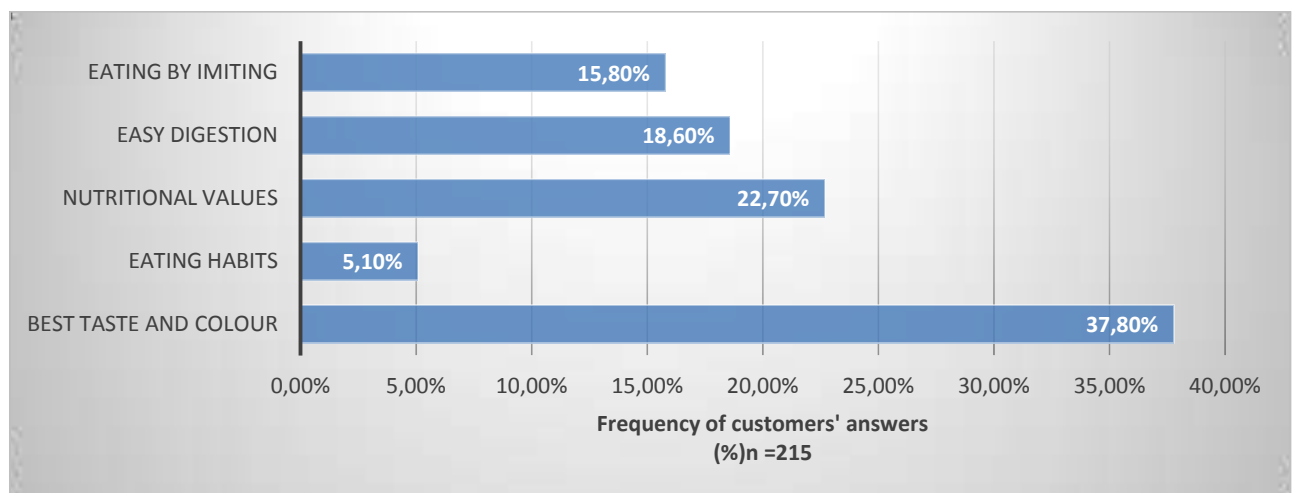
**Source : Authors**

According to khi-two tests, Pearson's Khi-two demonstrates the value of 25.252a as against ddl 24 with an asymptotic (bilateral) significance of 0.392. The verisimilitude report is 25,914 ddl 24 and an asymptotic (bilateral) significance. A linear by linear observation association whose value stands at 0.44, 1ddl and an asymptotic (bilateral) of 0.507 with a valid number of

observations of 211; having 27 cells (77,1%) have an lower theoretical size to 5. The minimum theoretical size stands at 0.01.

Figure 7 listed on page 17, Concerning reasons advanced for consuming Irish potatoes in restaurants by customers, figure 7 recapitulates many reasons, mentioned. Some focus on the characteristics of the dish and the most recurrent was the nutritional facts about this starchy food item (22.70%), also because of the taste and colour some customers consider it better (37.80%) for others it is because Irish potato is digestible (18.60%), others customers consume it just because they see others consuming it, therefore creating a followership (15.80%), but very few consume it because of their eating habits (5.10%)

**Figure 7: Reasons for eating Irish Potatoes in restaurants**

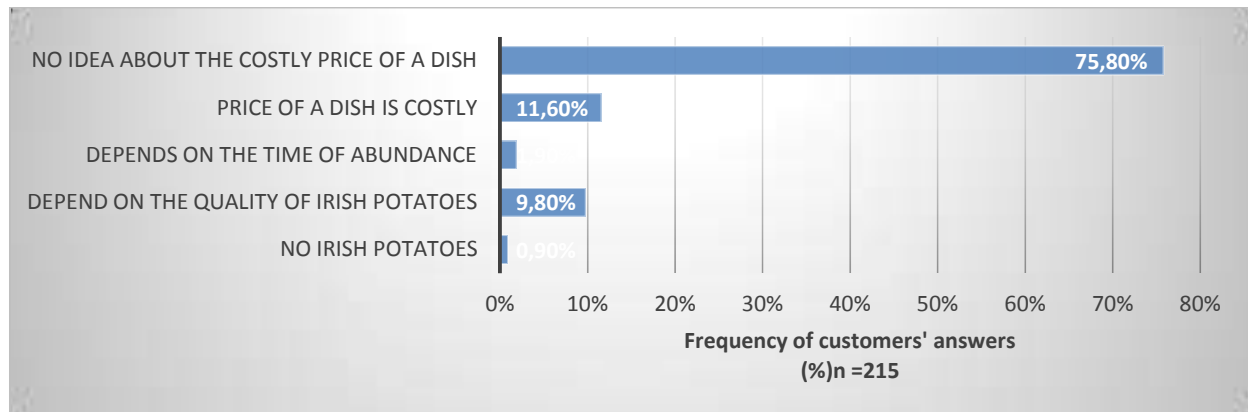


**Source: Authors**

Figure 8 listed on page 18 indicate that a dish of Irish potatoes in locations or restaurants where customers usually eat is not always accessible to all, meaning at a high price. There are several reasons: either the price of Irish potatoes is high (11.60%), or its price depends on the quality of the Irish potatoes (9.80%). It also depends on availability (1.90%) or there are no Irish potatoes (0.90%). Only a majority of persons is not aware of the costly nature of a dish of Irish potatoes in restaurants (75.80%).



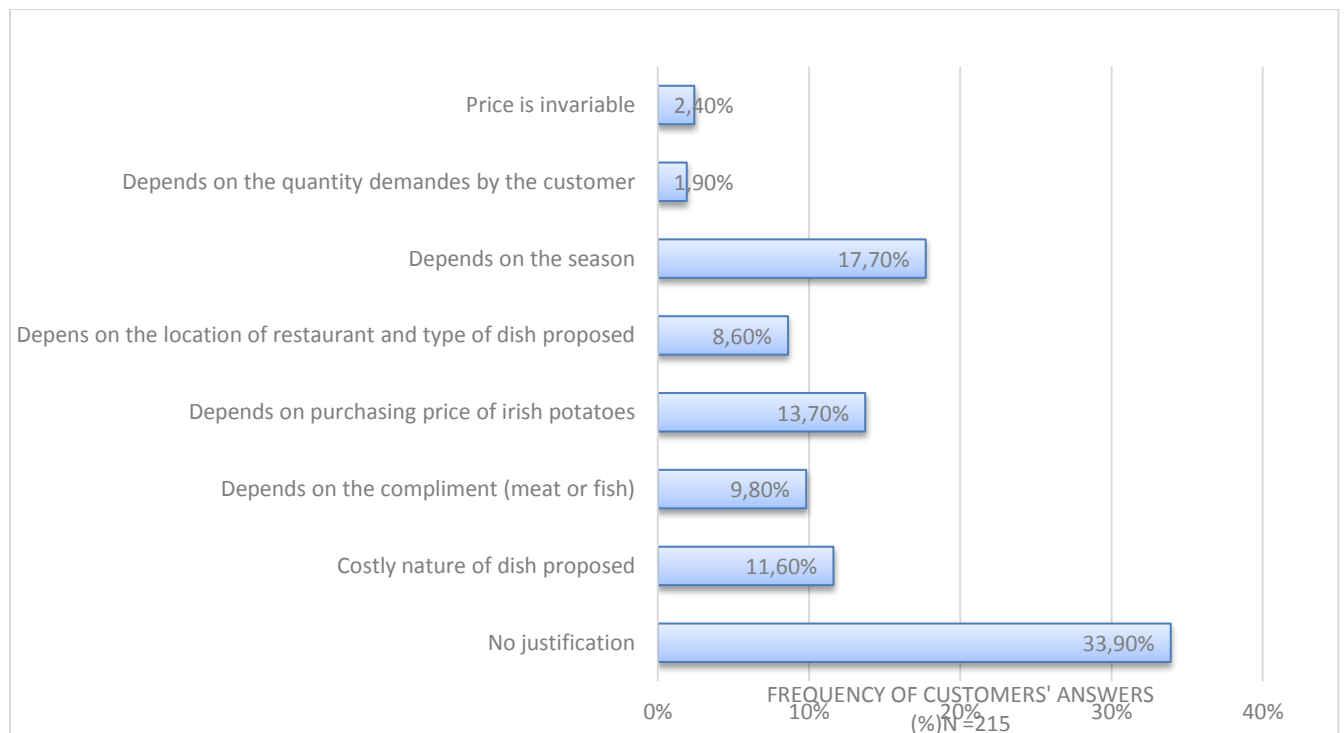
**Figure 8: Reasons for the inaccessibility of dishes made of Irish potatoes**



**Source: Authors**

After studying the reasons for the variety of Irish potatoes dishes proposed to customers, Figure 9 listed on page 19, it was discovered first of all that the price of the proposed dish depend on compliments (meat or fish) (21.40%). Prices also vary depending on the season (17.70%), also prices vary in relation to the location of the restaurant and the type of Irish potato dish sold (8.60%). For a fewer customers, prices do not change (2.40%) and they equally depend on the quantity demanded by customers (1.90%). Nevertheless, a majority are not aware why prices vary because they do not care about that (33.90%).

**Figure 9: Reasons for the variation of Irish potato dishes in restaurants**



**Source: Authors**

#### 4. Discussion

The development of food supply and distribution systems (SADA) in towns/cities is of absolute necessity in West African countries to overcome the high city demands and those of urbanization (FAO, 1999). In general, consumption of food cooked out of home is prevalent in all societies and particularly in Africa. This concept is generally justified by lack of time to cook or at times limited means or income. A consumer in urban and periurban zones depends on locally cooked dishes, which he can buy along the street. Access to such products is everywhere, the populations, ethnic status changes and generates a cultural mélange especially in the domain of feeding. Living conditions are generally unfavourable in sub-saharan African countries as compared to other countries that are economically underdeveloped. The consumption of agricultural products in particular Irish potatoes in Cameroon is not only a matter of culture or eating habit but it is also that of taste and easy digestion. As the population of Yaounde increases, the agricultural sector makes much efforts to supply urban areas, which in effect are the real distribution areas par excellence of agricultural products such as Irish potatoes. Irish potatoes to some families are inaccessible because of high prices during periods of the year, may be because of the number of household members to be fed. Generally, these family constraints force some people to eat Irish potatoes in restaurants though some families find it difficult to cook it because they are large or in cases of singles.

The different types of dishes are not accessible to all persons for example, pounded Irish potatoes “pomme pilée”. for some customers, it is not an easy dish to prepare, thus the solution is a restaurant. During the last two decades, women have invaded the job market and this situation no longer allows them to cook all the time for their families or to eat the normal meals cooked at home. Rather, they go for “take aways” and it helps them to better manage their schedules, income generating activities and their homes. The woman as a family head, head of an enterprise and other posts of responsibility does not have enough time. More and more, she is unavailable to do the cooking for her home.

On the other hand, customers find themselves in a world racing against time while feeding is neglected in urban areas. This is because of social constraints or activities that do not enable them to better manage their feeding. Valorizing, so to speak the commercialization of “ take aways” could help satisfy a good number of households; mainly with complete meals, which

could help people not only better nourish themselves but also get them closer their feeding culture, reinforce and enrich their feeding and facilitate households better organize their daily activities. Restaurants for some people remains a meeting point, a pastime, leisure and exposure, for this reason, the consumption of food in streets (makeshift restaurants/tourne-do) has become a widespread phenomenon in towns in Cameroon and consumers express no complexes eating there.

In Cameroonian towns Irish potatoes are often generally eaten in small (tourne-do/road side restaurants) as fried potatoes, while street vendors for most of the time sell it as pounded Irish potato or pan fried. Of course, the consumer finds himself in front of several dishes made of Irish potatoes. Considering the different ethnic groups that consume Irish potatoes in Cameroon, it was discovered that it is not only eaten in production zones but in the entire country.

A return to the roots of agriculture will promote transformations...therefore the need to concentrate on the transformation of agricultural products, and that agriculture has a great direct impact on other sectors of the society (Chauvin et al., 2012). In Yaounde, much food consumption takes place in restaurants and helps consumers by providing food, that is good, nutritive and also available when needed. Most often, many people succeed to eat once per day at their homes, and other times in restaurants, especially singles living alone. Of course, there is a major challenge to be resolved, that of the quality of Irish potatoes produced.

Concerning quality, the population often finds it difficult to distinguish the varieties, especially consumers. Thus, in streets they get confused about poorly cooked (half cooked irish potatoes) and the variety used for each dish. This constitutes a challenge for restaurant owners. Many consumers find it difficult to adapt to types or varieties of Irish potatoes proposed them in menus. This creates a sentiment of reluctance to consume it. Generally, consumers concerns focus on food security and the nutritive values in sub-saharan Africa, which could topple actors in the food supply chain in local markets with considerable socio-economic effects (Romanik, 2005). Food security and poverty reduction could be the case of some African countries, which greatly desire it. This is obtainable through investment policies not related to the agricultural sector (Reardon, 2014). The application of hygienic rules on food items can be tremendous in open markets and street vendors, who constitute the main distributors of food items in sub-saharan Africa (USAID, 2005).

Popularization or vulgarisation and awareness campaigns on different cooking methods, the adapted variety to each dish should also be a research priority, which will be important to proprietors of restaurants. This will enable a greater part of the population to be more interested in Irish potatoes. During this study, consumers indicated that the first two substitution food items (dishes) fried plantains (46%) followed by rice (12.1%). Therefore, a majority of consumers consider taste to evaluate the quality of Irish potatoes proposed to them.

Great was our discovery that prices of some dishes sold depended on certain criteria such as: types of dishes; the location and services offered customers. Prices of simple fried Irish potato range between 100frs – 700frs in makeshift/tourne-dos/street vendors whereas in other restaurants and supermarkets they range between 1000-3500frs. Concerning fried Irish potatoes, they are used as compliments in some cases (with meat, fish or chicken). The price of porridge Irish potatoes varies between 500frs-700 and that of pounded potatoes “pile” is between 500-700frs. Finally, in some locations or urban areas, prices of Irish potatoes dishes are high. It is the case of Bastos, central town where prices vary between 2000frs to 3500frs because of some well organized restaurants with parking lots; attractive personnel; quality service offered and well established structures. On the contrary, restaurants in some low class neighbourhoods are cheaper such as Mokolo, Gare Voyageur, Briqueterie where “tourne-dos” restaurants sell dishes at affordable prices. Generally, it is the same quantity as in high class neighbourhoods with affordable prices that vary between 100frs and 700frs, because of their location with at times some chairs or tables unsheltered and exposed to the public; the quality of service offered, hygiene and their quality/cabibre of customers. Worth noting is the fact that most customers who visit these restaurants are youths with an average age of 35 years.

Concerning quality, it is not generally the preoccupation of some customers as long as they get satisfied by their desired meal, no matter the location or environment it is sold. The consumption of Irish potato in different types of dishes, restaurants in Yaounde also depends on the social class of the consumer. Some consumers do not consider the price or the costly nature of an Irish potato dish because they try just to satisfy their appetite. They are partly influenced by the closeness to their places of work, whereas other consumers prefer to cover long distances to get to peace where they are used to eating. It is because of either a close relationship between the customer and trader (seller), or an advertisement done by one customer to other colleagues or friends. food consumption is influenced by many factors other

than one's income. There is first of all access to food, which is not always easy in major cities also influences what the population eats (Swimburn et al., 2014; Herforthet Ahmed, 2015). Equally the town of Yaounde is heavily populated. having values, cultures and potentials bring about a diversity in food consumption. Seasons also influence the price of an Irish potato dish, therefore, the quantity or the price becomes less accessible to all customers. According to some customers, the price of a dish is not a challenge, they prefer quantity at an affordable price. This is a general view among consumers of fried Irish potatoes.

The food challenges continue to be fragile. If one considers FAO statistics concerning several countries of the region except Cote d' Ivoire, Cameroon and Gabon because the in availability of food is high and below 2400 calories/inhabitant/day, Bricas et al, 11991, Debru et al, 2017. Yaoundé city is one of the most populated urban areas that has a multitude of restaurants. urbanization and higher incomes are related to dieting reflected in the commercial variables

City dwellers consume less cereal based products, more meat and dairy products, transformed food items and eat a great proportion of food out of the home (Kearney. 2010; thou et al.). Consequently, restaurants are on the increase thanks to the activities going on there, or demanded by customers in some neighborhoods, setting some money to solve family problems. Eating out of home in major urban centers is generally influenced by the prices of Irish potato dishes, the type of dish and also the location of the sales points. The dishes sold are generally known by other ethnic groups. The type of food eaten is often different in a way that pounded Irish potatoes is now unanimously consumed. The dish was eaten in the past only by the people of certain regions of Cameroon, it is now eaten practically by every Cameroonians. That is, all ethnic groups ate it in restaurants.

This factor is vital for consumers because they are generally bound to their traditional dish. Distinctions in the dishes consumed also depend on the different sauces that compliment them. In all, there exists in the entire region a great variety of ingredients used that portray the culinary potentials per day. (Bricas et al. 1991). If some of the spices are common in all the areas, we noticed major difference from one another, especially the case of pounded Irish potatoes "pile". In Yaoundé, the most visited areas by consumers of Irish potatoes are places like African makeshift restaurants "tourne-dos" because dishes served in them are general familiar. These makeshift/ "tourney-dos" restaurants are not far from ministries, in front of carpentry workshops, bars, markets, neighborhoods, and other street vendors go about with Irish potato containers on their heads.

The sale of food items on streets has become a better way not only for some traders to valorize the product, but also to develop distribution in the sector (commercialization). That way, standard economic implements (tools) exist that describe the relationship between income and consumption; including the elasticity of demand with respect to income that indicates how people's consumption of some food items can rise in the advent of salary increases (Herforth et al. 2015). Better salaries and living conditions for the populations will partly determine the nutritional situation. Customers who have shops or kiosks are generally served on the spot by street vendors, when the former cannot go elsewhere to eat at break time or when the dish on the menu is interesting. The supply channels of internal markets (mainly urban) have increasingly become important in national food security in sub-Saharan Africa (Reardon et al., 2014).

People generally go to restaurants in the same way like people living with their spouses (and possibly with children). On the contrary, the same people can equally feed "poorly" if they are alone at home, particularly at midday in the course of the week. This is just to confirm that eating out of the home takes place at times to satisfy food insufficiency and to reinforce individuals feeding through a variety of dishes that some people are unable to have at home. We witness a type of change at the level of urban food consumption, justified by imitating other urban households of different ethnic groups in Cameroon. It is based on the desire, either to initiate and adopt the eating habits of others from other production zones of Irish potatoes or foreigners because of this situation, Irish potatoes demand is on the rise in urban zones like Yaoundé where its consumption is on the increase and the types of dishes eaten vary from one consumer to another. Thus the population's demographic growth and income increase per inhabitant brings about a rise in the demand for food. This will lead to a move from feeding on rich starch to diet that are richer in sugar and in fatty products (Van Berkum et al., 2017).

The consumption of potatoes in Cameroon is so appreciated despite the high price of this product. Only, in restaurants and tourn-dos (street restaurant), these dishes are accessible in particular from these restaurants which are not very far from rural areas, this is what facilitates accessibility to this product at any time of the year. As elsewhere in African markets, there is always an unsanitary problem, only this is not a barrier for the consumption of potatoes. Yaoundé remains the center of the potato distribution networks, although other areas are part of it, but its peripheral areas at least give it this privilege.

## **Conclusion**

In summary, this study aimed at understanding better Irish potatoes consumption out of the home in some major conglomerates in the town of Yaoundé- Cameroon. Dishes made from Irish potatoes available on markets and commercial centers, the most consumed dishes out of the home analyses the potentials of these products, highlights the qualities/ characteristics sought after by consumers out of the home. Also, to identify the possibilities of populating the commercialization of new dishes made from Irish potatoes. From the outset a multitude of Irish potatoes by-products was enumerated in two districts of Yaounde, I and II, where its consumption was Irish potatoes for example, porridge, fried, pounded etc, all made from production areas who had common eating habits thanks to this exchange. Commercialization and investment policies all have legitimate roles in fashioning out urbanization and commercialization, especially the political climate vital for the “virtuous circles” of urbanization and rural transformation (Vorley, 2016). The population of the political is relatively yours therefore the consumption of Irish potatoes is not easily accessible in households because of different eating habits including the fact that Yaoundé is not a production zone.

It is also as a result of unstable prices of Irish potatoes and a multiplicity of dishes which are offered for women, sales points of cooked food for consumption are solving problems of availability in households, time (because cooking Irish potatoes takes too much time to peel) this enables women to better manage their activities – source of income and even because they themselves are a threat in restaurants whenever the means are available. Youths eat more Irish potatoes most often out of their homes, meet in restaurants with friends, during meetings, outings, chilling and it is generally fried. Consumption out of home also fosters job creation which in the informal sector constitutes a better means to avoid unemployment and idleness among young traders. In urban countries, a variety of dishes is proposed because customers are greatly diversified, the population is soaring, salaries vary from one social class to another, all the socio-professional classes find themselves in this consumption location out of the home, exchanging cultural values in all domains.

Therefore, to better valorize Irish potatoes and help families that do not have much time to cook it at home, it is necessary to popularize the sale of cooked dishes for consumption, revalorizing its starchy nature which has much dry materials matters importantly in man’s feeding. Also brings about new transformation techniques of Irish potatoes and improves

upon the nutritional quality for people. All of these could greatly boost the agricultural sector which tries to feed many people in Cameroon. The development of agricultural activities by the power that be even at grassroots level. This has brought about new challenges concerning the circulation of food items from the production stage to that of consumption (Padilla et al., 2001). Many factors therefore can explain the habit of eating out of the home: increase in urban areas of work time, salaries, leisure activities, the perception about cooking meals as a burden, increase of women in the job market.

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