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**Assessing food attributes and marketing services of private restaurants
on the campus of University of Abomey-Calavi, Benin**

Barthelemy G. Honfoga, Jeremie S. Ohanete, Charles D. Tevi,
Christelle O. A. Sedegnan and Max-Regis Ogouchi

Full Length Research Paper

Assessing food attributes and marketing services of private restaurants on the campus of University of Abomey-Calavi, Benin

Barthelemy G. Honfoga*, Jeremie S. Ohanete, Charles D. Tevi, Christelle O. A. Sedegnan and Max-Regis Ogouchi

School of Economy, Socio-Anthropology and Communication for Rural Development (EESAC), Faculty of Agricultural Sciences (FSA), University of Abomey-Calavi (UAC), Benin.

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In Benin Republic (West Africa), the public student restaurant of the University of Abomey-Calavi is being criticized for its irregular and poor service. Therefore, private restaurants have settled on the campus streets to fill the gap. Which food attributes and marketing services do students value most? How do those restaurants compare with the Agro Maquis reference restaurant, which presumably offers modern catering services? The study aims to reveal food marketing services, as critical drivers of food demand in a restaurant. Principal component analysis was carried out to identify types of private restaurants that have settled on the streets of the campus. This was done based on 13 marketing service attributes. The set of restaurants with the prevailing profile was tested for conformity with the reference one. 60% of the private restaurants comply well with cleanness and 70% with attractiveness/prettiness of the place. Also, 90% of the private restaurants addressed the time-saving need of consumers in a satisfactory manner and 60% were found efficient in terms of hygiene. Three main groups of restaurants were revealed. The one mostly represented is the one that takes into account: hygiene, seller and food presentation and packaging, guest care quality, diversity of services and service time. The conformity test shows that the dominant restaurants in the campus streets compare quite well with the Agro-maquis restaurant for most product attributes and marketing services. Outsourcing of catering service to qualified private restaurants in public universities should be implemented, based on track records of attractive marketing services.

Key words: Food demand, food attributes, marketing services, private restaurants, students, Benin.

INTRODUCTION

An overview of agricultural marketing in Africa

The dependency of African States on imported foods from overseas is growing, while domestic food production

is low or lacking rewarding market outlets. The issues of market participation (Bellon et al., 2016; Zamasiya et al., 2014), market access (Chamberlin and Jayne, 2012) with market integration (Baulch, 1997; Rachid and Minot,

*Corresponding author. E-mail: honfoga@gmail.com

2010; Honfoga et al., 2018) and structure-conduct-performance (Adegbola et al., 2016) have been brought back to the attention of policy-makers in Africa, with the aim of improving trade policies for better access of consumers to food. Considering the adverse effects of the 2008 food-and-oil crisis on the continent, the debate on the role of agricultural trade on Africa's food security and economic development has gained recently a renewed attention. Many researchers (Adegbola and Singbo, 2005; Ekpodilè and Honfoga, 2015) and development professionals emphasized the need for more processing of locally-produced raw agricultural products to capture higher added-value, to increase competitiveness and to reduce food insecurity and poverty. However, the specific added-value of trade has not been sufficiently recognized. Yucheng et al. (2015) diagnosed the relationship between advertising density, market share and sales profit in the dairy industry in China, and found positive or negative correlations depending on the periods when data on strategy variables (advertising density, market share) were paired with the outcome variable (sales profit).

There is a wealth of researches on the effects of product's attributes on brand positioning, consumers' satisfaction, total demand, sales' volume and companies' profit (Semeijn et al., 2004; Gwin and Gwin, 2003; Humphreys and Williams, 1996; Mutukrishnan and Kardes, 2001). However, only a few studies in Benin diagnosed consumers' choices for product's attributes and marketing services, which are critical drivers of food demand, be they locally-produced or imported. The present study intends to contribute in filling this gap by diagnosing private restaurants that have found their way through the Campus streets in the University of Abomey-Calavi.

Justification of the study

With several faculties and schools and more than 80,000 students each year, the University of Abomey-Calavi (UAC) is the largest one in the Republic of Benin. Providing adequate catering services for student has long been a major concern of successive governments because of its potentially high impact on students' academic achievements. However, the public student restaurant of the Center for University Social Services (COUS) has been delivering poor services, while functioning in an atmosphere of constant distrust by students. It is being criticized for irregular services, high service costs and embezzlement. It closed last year subsequently to riots on the campus. That is the reason why the government is considering to privatize the COUS. In the meantime, independent private restaurants have settled in many areas of the campus and catering service is growing fast. They are located in the commercial center and campus streets, at the periphery of the main

university area. They are different from the main (public) University Restaurant, of which they are about 400 meters away. They are implicitly approved by the University Infrastructure and Area Management Authority, and they offer daily varieties of meals and drinks: rice, maize, cassava, yam and bean-based traditional meals (akassa, agbéli, èba, télibo, atchèkè, fufu, atassi) served with various meat and fish sauces; porridges (akpan, deguê) and processed milk; wheat-based bred, biscuits and pastas; etc.

The "Agro Maquis" restaurant is settled on the premises of the Faculty of Agronomic Sciences (FSA) under a space-renting and catering service agreement. The FSA approved the establishment of this "reference" restaurant to facilitate safe and time-saving restoration for its teachers and students. Only quite standard meals and dishes are served at fixed prices. Therefore, Agro Maquis is attended only by a handful of teachers and rarely students. This fact not only represents a shortfall for the private contractor, it also results in a waste of time for most students and teachers who have to go elsewhere to get food.

Students going to private restaurants on the campus may be attributed to the convenience of the place, but mostly to price accessibility or purchasing power. Teachers may be valuing mostly a restaurant's apparent image and food quality. However, other marketing services may be also important in their choices of restaurants.

In this study, we question the quality of food and marketing services of the private restaurants in comparison to Agro Maquis. Are they performing well, that is, are they meeting students' demand for food? Which food attributes and marketing services are highly rated and how do they compare with Agro Maquis which has a nice and consumer-friendly space, and presumably offers modern catering services?

Therefore, the problem addressed is the presumed caterers' lack of attention to total quality of marketing services instead of food quality alone. In the perspective of outsourcing catering service to qualified private operators, the developmental scope of this study is to guide the definition of demand-driven criteria based on tastes and preferences of students for selecting such operators. Beyond the initial investment capacity of the latter, assessing the total quality of food marketing services will be important.

Objective of the study

The purpose of this study is to reveal the importance of consumers' choices based on marketing services and food attributes, as critical drivers of food demand by students in restaurants on the Campus of University of Abomey-Calavi, and to rate these restaurants accordingly. More specifically, the study sought to establish the restaurants' typology based on their ratings for products

(foods)' attributes and associated marketing services, and to compare private restaurants on the campus with the "Agro Maquis" restaurant.

The study aims to diagnose the total quality of food marketing services offered by private restaurants on the campus where the public catering service is failing. It is an exploratory study which presumes that private restaurants owners/managers put some emphasis on food quality alone and do not pay enough attention to total product quality which also includes the quality of marketing services. The study is an application of the 4P or marketing mix model in a real context and in a consumer service improvement perspective. However, we did not run a regression model or an inference-based model.

LITERATURE REVIEW

This section is a brief overview of key concepts of the study, mainly the marketing mix and trade utilities. A glance is also made at research and debates on total quality of marketing services, focusing on food marketing and catering service management in Benin and other places in Africa.

The concepts

In this study we would define trade as the sale of goods. It is the act of buying and selling products in order to make a profit. As old as the contemporary history of people is, trade cannot be addressed without referring to commodities, markets and merchants themselves (Sédillot, 1964). For the buyer, trade makes it possible to create for him four utilities as place, form, time and physical possession/property right. Trade performance is the result of meeting service output demands or trade utilities through effective and efficient marketing management (Coughlan et al., 2001).

The concept of marketing can be understood from two perspectives: (1) a science when there is a systematic classification of observable facts with established, verifiable laws and a method that facilitates managerial decision-making; (2) an art where, beyond verifiable and applicable marketing laws, the decision-maker is called upon to produce a genuine combination of elements appropriate to his organization (Borden, 1964). Today, two types of definitions are usually used to characterize the marketing concept: (i) a philosophical definition: marketing is an optic of thought, a philosophy; (ii) an economic definition: marketing is a management discipline. These definitions are congruent with the two essential phases of the marketing approach: the strategic phase and the operational phase. Strategic marketing helps to identify the needs of the market so as to define the mission of the company, determine its portfolio of

activities, and steer it towards attractive opportunities. This phase has long-term implications for the management of the company. On the other hand, operational marketing is all about the marketing mix and is in the short and medium terms.

Marketing is a set of methods and means available to an organization to promote, in the target audiences, behaviors conducive to the achievement of its own objectives (Lendrevie and Lindon, 2000). It is the art of converging the company's actions in order to best meet the needs of its customers, within the framework of coherent policies aimed at optimizing the overall efficiency of the company vis-à-vis its markets (Ousmane and Oumar, 2008). This is all of everything that contributes to the creation, retention and expansion of a company's clientele. In this case, the company is part of a marketing approach.

The marketing mix is a set of controllable variables used by the company to develop the desired demand in the target market (Kotler et al., 2012). It is not a scientific theory, but simply a conceptual framework that identifies the key decisions that managers must make in configuring what they offer in order to meet the consumers' needs. It is originating from the single P (price) of microeconomic theory (Chong, 2003). New Ps were introduced into the marketing scene in order to meet up with the highly competitively charged environment (Low and Tan, 1995). The marketing mix or marketing plan is the set of actions or policies, proportionate and consistent, covering the product, price, distribution and communication. These actions were originally defined by Borden (1964) and McCarty (1960). Over the years, their numbers fluctuated from twelve with Borden and to four with McCarty.-These four actions, generally labeled 4Ps, concern the development (Product), pricing (Price), communication (Promotion) and distribution (Place) of a product or service that is the subject of an exchange (Goi, 2009). Through the marketing flows addressed in the components of the marketing mix or 4P (product, place, price, promotion), the seller is called upon to convey these four utilities to attract, satisfy and retain his customers.

However, in spite of their attractiveness, the days are gone, where the 4Ps used to be adapted to the business situation and the C-words (consumer, cost, convenience and communication) are gaining an upper hand (Lauterborn, 1990). Constantinides (2006) studied the current standing of the 4Ps Marketing Mix framework as the dominant marketing management paradigm. He identified market developments, environmental changes, and trends, as well as changing academic attitudes likely to affect the future of the Mix as theoretical concept and also the favorite management tool of marketing practitioners. He identified two main limitations of the Marketing Mix as management tool, common in all examined domains, namely the model's internal orientation and lack of personalization.

Table 1. The generic elements of the marketing-mix.

Supply / Offerings	
Product	Price
Good and / or service	relative level
Concept and features	costs, margins, rebates, rebates
Benefits and attributes	rate
Associated services	credit
Packaging and name	payment deadlines
Quality	-
Commercial action	
Place (place)	Promotion (promotion)
Type of circuit	Advertising and sales promotion
Selective or not	Public relations
Direct or via intermediary location	Sales force and staff in contact, sales aids

Source: Lauterborn, B. (1990), "New marketing litany: four Ps passé: C-words take over". *Advertising Age*. 61 (41), p 26.

In spite of these limitations, the marketing mix model is popular and is still useful to study market performance in developing countries. Our study seeks to illustrate its generic elements (Table 1) by operationalizing them in the case of private restaurants' catering services on the Campus streets of University Abomey-Calavi.

Trade utilities are the various expressions of customers' satisfaction, as deriving from the 4Ps' implementation. In the present study, trade utilities are directly assessed in terms of form of the purchased product, location of delivery, time of delivery, physical possession and ownership/property right of the buyer (Coughlan et al., 2001). These are outcomes targeted by the seller in the 4-component marketing strategy (4Ps or "Marketing Mix") by offering the product (intrinsic content and presentation) and the associated sale services (price, place, promotion). Lauterborn (1990) classified earlier the main marketing action variables (Table 1) as "offerings" (product and price) and "commercial action" (place, promotion). The relationships between the 4 Ps and trade utilities are neither linear nor bijective. One "P" may be related to many utilities, several Ps to a same utility. For example, putting the selling points (Place) on the client's trajectory or designing purposive distribution network (Place) would allow time-saving while meeting the location utility. Likewise, sorting and packaging (Product) will help the consumer save time while enjoying the "form" utility. Gahinet (2014) found that the search of time-saving is a crucial element of consumers' attendance of stores.

However, Cronin et al. (2000) found that service quality, service value, and satisfaction may all be directly related to behavioral intentions when all of these variables are considered collectively. Their results further suggest that the indirect effects of the service quality and value constructs enhanced their impact on behavioral

intentions.

According to Giese and Cote (2000), consumer responses followed a general pattern similar to the literature. Satisfaction comprised three basic components, a response pertaining to a particular focus determined at a particular time. The literature and consumers both view satisfaction as a summary of affective response of varying intensity.

Few works on products' attributes and marketing services in Benin and Africa

Faustin et al. (2010) evaluated chicken traits including market and non-market values (plumage color, disease resistance, body weight, and hatching frequency) that influence consumers' preferences and therefore farmer's choices of breeding and conservation systems. Using a multi-attribute preference elicitation technique, Falola (2014) found that consumers' evaluation and use of food labels in Nigeria were grounded on marketing services offered by food companies. Food labels were used mainly for traceability, registration status of the food producer, advertisement, as a legal requirement, to know the expiry dates and to distinguish the product from that of other competitors. Adegbola and Singbo (2005) revealed some important product's attributes that determine the competitiveness of imported rice against domestic rice in Benin. Likewise, based on consumer's evaluation of seven distinct quality attributes (cleanness, rate of broken rice, degree of whiteness, cooking speed, swelling after cooking or water absorption ability at cooking, taste/palatability, cohesion/grains' stickiness or texture of cooked rice), Ekpodilè and Honfoga (2015) found that imported rice was more competitive than local rice, and that the local dry factory-processed rice was

more competitive than the indigenous parboiled one. The above physical and organoleptic characteristics were critical for consumers' demand of crude or cooked rice. After analyzing nine product's attributes (competitive price, easiness of availability, soft texture, tenderness, taste, attractive presentation, attractive color, hygienic processing conditions, and long shelf life), Dossou et al. (2017) found that competitive price was the most important purchasing motivation for soybean cheese consumers in Southern Benin. Consumers were not satisfied with 6 out of 9 attributes, hence a strong concern for the competitiveness of locally-produced foods, especially in an urban environment.

Not much has been written specifically on the dimensions of service quality in Africa's restaurants. Service quality is a fundamental component which produces higher levels of guest satisfaction, which in turn lead to higher sales revenue. The restaurant service quality is difficult to evaluate, because the assessments are made on both the service outcome and on the process of service delivery. Some research suggested that food quality, physical environment and service are the major components of overall restaurant service quality (Ryu and Han 2010).

Petzer (2014) found that food quality, service quality and dining atmospherics respectively, significantly influence customer satisfaction at sit-down restaurants in South Africa. Menvielle et al. (2008) also demonstrated that two dimensions determine consumer satisfaction: satisfaction towards the offering (freshness, presentation, variety and quality of food) and satisfaction towards the servicescape environment. Liu and Jang (2009); Wu and Liang (2009) indicated that service encounter in restaurant settings consists of three main elements: environmental elements (e.g. design, music, and lighting), employees (e.g. professional skills, reliability) and customers (e.g. interaction with other customers). There is no consensus regarding the analysis methods of service quality dimensions.

Mhlanga et al. (2015) assessed the effect of restaurant attributes on customers' expectations and experiences in formal full-service restaurants, and revealed that good food is an essential component for customers' experiences; however, the level of service plays a pivotal role for customers' expectations in formal full-service restaurants in South Africa. Mhlanga (2018) confirmed that to improve service quality, restaurants should deliver service in the promised time as this attribute had the widest statistically significant gap which represented serious shortfalls and thereby requires significant attention of restaurant managers in terms of making improvement efforts. They should consider "error-free served order" to meet customer expectations of service quality and "clean dining area" to meet customer perceptions of service quality.

These findings are particularly insightful for the present study on catering services of private restaurants on the

Campus of Abomey-Calavi, especially regarding the first P (product) of the marketing mix. However, beyond the intrinsic attributes of food, the associated marketing services are also important for consumer choices of food stores and restaurants.

The present study highlights further the relevant marketing services that determine students' demand for food and their choices of private street restaurants on the campus. However, the food demand itself was not assessed quantitatively nor its relationship with the marketing services.

METHODOLOGY

Study area and sampling

The observation unit of this study is the "restaurant" in the University of Abomey-Calavi. A restaurant is considered to be any establishment where prepared meals and drinks are served *in-situ* in exchange for a payment. The study area covers restaurants located in the business center of the campus.

An exploratory study was conducted to exhaustively list the private restaurants on the campus visited by FSA students. About 40 restaurants were identified. They were then grouped at first according to the criteria of form and similarity of the services offered, and a random draw was made in each group to come up with a sample of 10 restaurants numbered from R1 to R10. They include: Maman Mimi, Restaurant les Chocos, Kiosque 103, Maman Kiki, Maquis Joviale, Maman ENAM, Maquis Delights, Kiosque 167, Nagan, Ayinon. The Agro Maquis reference or control restaurant was numbered R11.

Study variables and data collection methods

The data collected translate the investigators' perceptions of the marketing services related to the four trade utilities (place, form, time and physical possession) that the restaurants provide to consumers. The investigators were students from the FSA who used to buy their meals in the private restaurants on campus, and who could therefore well express consumers' perceptions. This method is applicable in rapid market appraisal studies using relevant scorecards, when budget constraints do not allow dedicated sampling of consumers to assess marketing services. The researcher's bias on the data is minimized when on-site observation and participation is promoted, as it was the case in this study.

The study is an application of the 4P or marketing mix model in a consumer service improvement perspective. For each utility, various service attributes were defined (Table 2), and each attribute was valued by a score varying from 1 to 10. The smallest value (1) refers to worst rating and the highest value (10) refers to the best appreciation of this attribute.

The method used during the survey consisted of observation, discussion, purchase and consumption of food on the premises. It is a rapid appraisal method. Expert observations and judgements, translating consumers/students' views on the restaurants' marketing services were used instead of a classic sampling of consumers. Open questions were asked while discussing with the caterers in order to score product/service attributes based on *in-situ* observations.

Data were collected by a team of five investigators, using a purposively designed sheet. They are students at the department of agricultural economics and agribusiness. They visited the

Table 2. Variables for rating private street restaurants for their marketing services.

Utilities	Attributes
Place	Cleanliness of the place
	Distance between the location of the FSA
	Prettiness
	Complementary services (televisions, ornaments)
Form	Product quality
	Hygiene
	Presentation of the food and the seller
	Diversity of services offered
Time	Guest care
	Service time
Physical possession	Price/quality price ratio
	Availability of the change money (to be returned after payment)
	Consumption before or after payment

Source: Survey data, UAC 2017.

restaurants during restoration peak hours (10:00 to 11:00 and 12:00 to 13:00). In each restaurant, they jointly evaluated and scored the food marketing services. They completed a scorecard on the spot, which consists of assigning a score to the criteria of the selected marketing services per item of the marketing mix. The criteria evaluated for each restaurant are those listed in Table 2. The scores for each criterion vary from one to ten with the following ratings: 1 or 2: very bad or nonexistent; 3 or 4: bad; 5 or 6: fair; 7 or 8: good; 9 or 10: very good. This scoring grid can be considered as an expansion of the 5-point Likert scale. The investigators' participant observation as clients and their open discussions with customers, restaurant managers and waitresses enabled a sensed scoring and a cross-checking of the data reported on the sheets.

Data processing and analysis methods

The statistical model based on point allocation and subject classification called Cluster Analysis (Hinkle et al., 1969) was used. It allowed the grouping of the restaurants in a number of clusters according to the scores obtained for the criteria considered in the analysis. The differences between restaurants in the same cluster should be minimal and the differences between different cluster restaurants should be important. In an operational way the average of the given scores was calculated by criterion and by restaurant. Restaurants with the same score for a criterion are grouped together. This method has been coupled with other multivariate analysis models. These include the numerical classification and Principal Component Analysis (PCA). The PCA method was used to group restaurant groups by similar criteria. It aims to subdivide a set of n individuals or objects into a reduced number k ($k < n$) of classes or groups, each consisting of rather homogeneous elements. It is a typology/cluster analysis method. Thompson (1998) used it with the FASTCLUS procedure in SAS for the same purpose.

For the purpose of comparing the private street restaurants with the reference restaurant, a numerical classification was initially done to group the ten restaurants into homogeneous groups. Finally, the group of restaurants with the greatest number of restaurants referred to here as the "dominant group" was identified and compared to the control restaurant using a mean compliance or

conformity test that verifies whether the average of a population is equal or not to a given value.

The data collected were entered into an Excel 2010 spreadsheet database and processed with the MINITAB 14.1 software. The results were interpreted in light of the realities observed in the field and discussed in relation to previous research results.

RESULTS AND DISCUSSION

Characterization of restaurants

Table 3 summarizes the characterization of restaurants according to the 4 trade utilities (location, form, time and possession) and related marketing services. Regarding location, 60, 20, 70 and 30% of the surveyed restaurants were good in terms of cleanliness, distance, prettiness and extra service respectively. They were comparable to the reference restaurant for cleanliness and prettiness of the place.

Regarding the form utility, 50% of restaurants respect hygiene and quality. As for presentation, diversity of services offered and guest care, respectively 10, 20 and 40% of the restaurants were good. Concerning the time utility, 30% of the restaurants were very good for service time and 60% were good, meaning 90% of the private restaurants addressed the time-saving need of consumers satisfactorily. Finally, for the physical possession utility, 60% of the restaurants were good in price compared to 30% which were fair. In particular, 40% were very good; 20%, good, and 30% fair for the availability of change money; 60% were good and 40%, very good for payment after consumption. It is worth highlighting that 40% of the street restaurants were comparable to Agro Maquis for payment after consumption.

Table 3. Ratings of private street restaurants* for marketing services.

Trade utilities	Marketing services	Scores by restaurant										
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
Place	Cleanliness	7	7	6	5	7	6	7	6	8	8	8
	Distance	6	7	4	6	5	8	5	3	5	5	8
	Prettiness	6	7	7	4	8	4	8	7	8	7	8
	Complementary services (TV, ...)	1	4	1	2	7	3	7	5	7	5	7
Form	Hygiene	5	6	8	6	9	7	7	8	7	4	6
	Food presentation, sales assistant)	6	6	8	4	8	6	8	8	5	7	8
	Diversity of services offered	5	4	5	7	9	9	7	7	5	5	6
	Guest care	1	7	7	6	8	6	8	9	4	4	6
Time	Quality	6	6	7	6	8	8	7	9	7	5	7
	Service time	10	7	6	7	8	8	7	7	9	9	7
Physical possession	Price / quality	4	6	6	7	7	7	6	8	7	8	5
	Availability of change money	5	3	9	8	6	7	6	5	9	9	7
	Consumption after payment	7	4	10	7	7	8	7	7	9	9	9

*R11 is the reference or control restaurant "Agro Maquis".
Source: Survey data, UAC 2017.

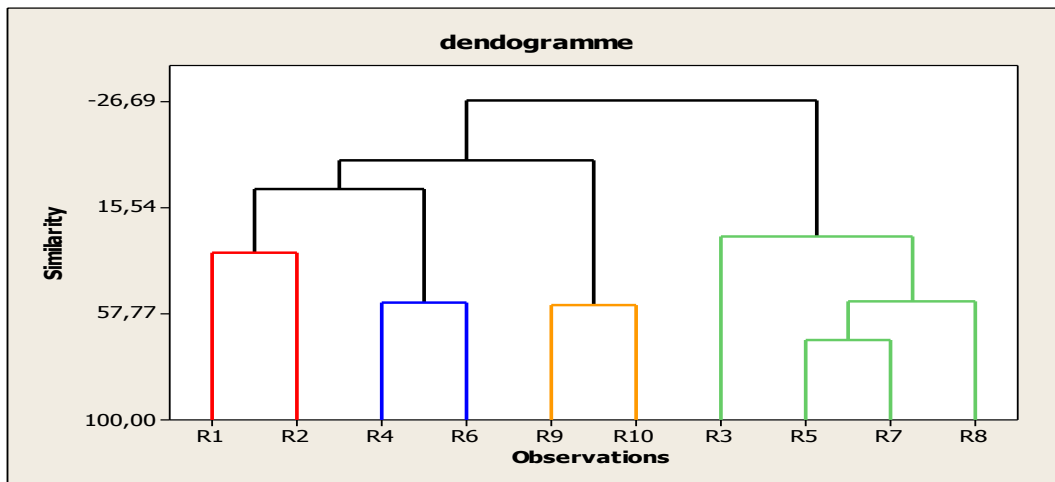


Figure 1. Dendrogram of hierarchical ascending classification of private restaurants.
Source: Survey data, UAC 2017.

Numerical classification

In order to group the restaurants according to the predefined characteristics, a numerical classification was carried out on 10 restaurants according to the 13 criteria listed in Tables 2 and 3. The dendrogram (Figure 1) was used to divide the studied restaurants in 4 groups of similarities: R1 and R2; R4 and R6; R9 and R10; R3, R5, R7 and R10. The dominant group is Group 4 because it comprises more restaurants than the others.

Principal component analysis

The principal component analysis was performed with the

thirteen variables defined from the four trade utilities (Table 2). The correlation matrix of the Eigen values for the main components is presented In Table 4. The results show that with two axes, 54.9% of the information contained in the initial variables can be explained; which is sufficient to ensure accurate data interpretation.

However, three axes containing 71.4% of initial variables were more representative and were used. Table 5 gives the results of the analysis of correlations between principal components and initial variables. They make it possible to identify the marketing services having the highest absolute coefficient for each axis / type or PC, and therefore the critical attributes according to which the types of restaurants could be distinguished. Table 6 gives

Table 4. Eigen analysis of the Correlation Matrix.

PCA	1	2	3	4	5	6	7	8
Eigenvalue	4.2999	2.8399	2.1385	1.4391	1.0456	0.4924	0.4552	0.2225
Proportion	0.331	0.218	0.165	0.111	0.080	0.038	0.035	0.017
Cumulative	0.331	0.549	0.714	0.824	0.905	0.943	0.978	0.995

Source: Survey data, UAC 2017.

Table 5. Contingency table of correlation coefficients* between principal components and initial variables.

Product attributes and marketing services	PC1	PC2	PC3
Cleanliness	0.124	0.523	-0.171
Distance	0.255	-0.299	-0.148
Prettiness	-0.178	0.492	-0.232
Entertainment service (TV, Music, etc.)	-0.225	0.351	-0.159
Hygiene	-0.419	-0.068	0.011
Presentation (food, sales assistant)	-0.319	0.212	-0.105
Diversity of services offered	-0.264	-0.231	0.120
Guest care	-0.436	-0.124	-0.087
Quality	-0.394	-0.111	0.005
Service time	0.302	0.239	-0.029
Price/quality ratio	-0.226	0.083	0.288
Availability of change money	0.047	0.170	0.630
Consumption before or after payment	-0.012	0.220	0.596

*MINITAB 14.1 indicates that coefficients equal to 0.300 or higher are highly significant, while those in the range 0,250 et 0,299 are moderately significant.
Source: Survey data, UAC 2017.

Table 6. Distribution of marketing services on principal components.

Correlation	PC1 (33%)	PC2 (22%)	PC3 (16%)
Positive Correlation (+)	Service time	Cleanliness	Currency availability
		Prettiness	Consumption after payment
		Complementary service	Price/quality ratio
Negative Correlation (-)	Hygiene	Distance	
	Presentation		
	Customer's welcome		
	Quality		
	Diversity of services		

Source: Survey data, UAC 2017.

a concise description of the types as follows:

1) On axis 1, there is a strong correlation with the variables: hygiene, presentation, customers' reception, quality and service time. On this axis are restaurants serving in record time, and to a lesser extent offering hygienic products and good qualities. Similarly,

presentation, diversity of services and quality of guest service are relatively poor.

2) On axis 2, there is a strong correlation with the variables: cleanliness, prettiness, complementary service. There is a correlation with the variable "distance" to a lesser extent. On this axis, the clean restaurants are relatively nice and have complementary services in

general, but they are relatively distant from the FSA buildings.

3) On axis 3, there is a strong correlation with the variables: availability of change money and consumption before or after payment. There is a correlation with the variable "price/quality ratio" to a lesser extent. On this axis, restaurants with change money availability are willing to receive payment after the customer has consumed. They were also rated well for change money.

The first two axes are the dominant types of restaurants: (1) "performance in speed" and less efficient regarding hygiene, presentation, accessibility, quality and diversity of services offered or vice-versa; this type includes restaurants R1, R5, R7, R8. (2) "Performance in terms of cleanliness". This type includes restaurants R9, R10, R4 and R6.

Results of the conformity test

The results of the conformity test (to compare the dominant restaurants with the reference restaurant /Agro-maquis) are presented in Table 7. For the location utility, the dominant restaurants R5, R7, R8 and Agro-maquis were similar in terms of prettiness, complementary service (TV, decoration), cleanliness. But Agro-maquis was closer to the Master zones of FSA. For the content of other utilities (form, time, and physical possession), there is still quite no difference between the dominant restaurants and Agro-maquis.

Overall, the conformity test showed that the dominant private restaurants on the campus streets compared quite well with the Agro-maquis restaurant for most product attributes and marketing services. This means that they are doing as well as the reference restaurant, while offering more competitive prices.

DISCUSSION

Out of the assessment of product attributes and marketing services for rating the private restaurants, it appears that the private restaurants vary quite widely in their catering services. Among other characteristics, only 50% of the restaurants respect hygiene and quality, while 90% addressed the time-saving need of consumers satisfactorily. These results are congruent with those of Dossou et al. (2017) who found that urban consumers of soybean products in Benin were not satisfied with 6 out of 9 product attributes, that is, a 66.66% rate of dissatisfaction which affects the competitiveness of locally-produced foods. However, our results indicate that the time utility is provided very well by a large majority of the private restaurants, which is critical for catering service to students. The restaurants make a positive difference in this respect and lend an initial credit for outsourcing that service to them. Meanwhile, the results of the assessment of product attributes and marketing

services may vary overtime, and it would be therefore necessary to undertake multiyear recording before a stable picture of consumer service status and consumer satisfaction is drawn. This means a long-term observation of product attributes is necessary in a competitive environment for a fair judgment and ranking of private catering service providers. For example, Muthukrishnan and Kardes (2001) found that certainty in the initial preference of product attributes combines with uninformative additional experience to create a shift in the relevance of the attributes and biased information gathering in subsequent choices.

The findings of the principal component analysis (PCA) indicate that although the private restaurants on the campus streets of University of Abomey-Calavi are quite diverse in the food marketing services they offer, the main types identified will be useful for defining selection criteria in the perspective of catering service outsourcing. The type 1 restaurants are not desirable, whereas type 2 restaurants are the kind of restaurants to start with, while bearing in mind that other relevant product attributes would need to be emphasized further through adequate training and related compulsory provisions in the catering service contract. Periodic service monitoring and evaluation will be also necessary.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study is to reveal consumers' choices of food attributes and marketing services, as critical drivers of food demand by students in restaurants on the Campus of University of Abomey-Calavi, and to rate these restaurants accordingly. The ratings show that 60-70% of private restaurants comply well with cleanness and attractiveness of the place, about 90% for servicing time/duration, and only 50% for hygiene. The latter score is a great concern for competitiveness in an urban context. Three main types/clusters of restaurants were revealed. Fast servicing, attractiveness/tidiness, and easiness of payment/availability of change money were the main clustering axes components among 13 service attributes. Only 40% of the private restaurants just as the reference restaurant are good in providing food marketing services. These results indicate that although the private restaurants on the campus streets of University of Abomey-Calavi are quite diverse in the food marketing services they offer, the main types identified will be useful for defining selection criteria in the perspective of catering service outsourcing.

Policy implications and recommendations

The results imply that beyond the initial investment capacity embedded in the "place" trade utility, it is actually the total quality of marketing services that is valued by consumers instead of price accessibility alone.

Table 7. Comparing dominant restaurants to the reference one (Agro-maquis).

Restaurant	Location (place)			Form (product)				Time		Physical possession			
	Cleanness	Distance	Prettiness	Complementary service	Hygiene	Presentation (food. seller)	Diversity	Customer's welcome	Quality	Service time	Price/ quality ratio	Availability of change money	Consumption before or after payment
R5	7	5	8	7	9	8	9	8	8	8	7	6	7
R7	7	5	8	7	7	8	7	8	7	7	6	6	7
R8	6	3	7	5	8	8	7	9	9	7	8	5	7
Average	6.7	4.3	7.7	6.3	8	8	7.7	8.3	8	7.3	7	5.7	7
Variance	0.3	1.3	0.3	1.3	1	0	1.3	0.3	1	0.3	1	0.3	0
Agro-maquis	8	8	8	7	6	8	6	6	7	7	5	7	9
Calculated T	4	5.5	1	1	3.5	--	2.5	7	1.7	1	3.5	4	--
Read T	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
H ₀ Confirmation	A ₀	R ₀	A ₀	A ₀	A ₀	A ₀	A ₀	R ₀	A ₀	A ₀	A ₀	A ₀	A ₀

Source: Survey data, UAC 2017.
H₀ confirmation: A₀ = null or no difference hypothesis is accepted et R₀ = null hypothesis is rejected.
Significance level: 5%.

Therefore, we raise the government’s attention on prudent outsourcing of catering service to independent private restaurants in universities. Public-private partnerships will be useful to cost-effectively improve the quality of this service to students, teachers and public agents. To this end, relevant criteria based on tastes and preferences of students should be defined for selecting private operators wisely in catering service programs for public universities and more generally in school feeding programs.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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