



## Short Communication

## Food Choice Questionnaire in an African country – Application and validation in Cape Verde

Diva Cabral<sup>a,b</sup>, Maria Daniel Vaz de Almeida<sup>b</sup>, Luís Miguel Cunha<sup>a,\*</sup><sup>a</sup> LAQV-REQUIMTE and GreenUP/CITAB-UP, DGAOT, Faculty of Sciences, University of Porto, Campus Agrário de Vairão, R. Padre Armando Quintas 7, 4485-661 Vila do Conde, Portugal<sup>b</sup> Faculty of Nutrition and Food Sciences, University of Porto, R. Roberto Frias, 4200-465 Porto, Portugal

## ARTICLE INFO

## Keywords:

Confirmatory factor analysis  
 Exploratory factor analysis  
 Food choice  
 FCQ  
 Food consumption  
 Trans-cultural

## ABSTRACT

The Food Choice Questionnaire (FCQ) is a multidimensional measure that simultaneously evaluates the various factors that have an impact on daily food choices. Since its development by Steptoe et al. (1995), this tool has already been used in several countries, but had not yet been applied and validated in an African country. This study aims to evaluate the applicability of FCQ in Cape Verde, as well as to create consumer groups according to food choice motivations. Face to face interviews were conducted with 503 participants and replicated with 119 individuals. A confirmatory factor analysis was performed yielding unsatisfactory fit indexes. Subsequently, an exploratory factor analysis was performed revealing nine factors: ‘nutritional aspect and diet’, ‘sensory appeal’, ‘mood’, ‘wellbeing’, ‘convenience’, ‘price’, ‘familiarity’, ‘ethical concern’ and ‘natural content’. The hierarchical cluster analysis identified groups with similar food choice criteria, which originated three groups: “Healthy”, “Hedonists” and “Engaged”. For the FCQ, the result of the test-retest, in the range of three to four weeks was satisfactory. The results obtained are coherent, reinforcing that the FCQ is a transculturally applicable tool.

## 1. Introduction

Food choice can be defined as a set of decisions, whether conscious or unconscious, taken by a person at the time of purchase, during consumption, or at any instance between these two moments (Hamilton, McIlveen, & Strugnell, 2000). It is known that consumer’s attitudes are mediated by several concurrent factors which together result in choices that determine the consumption pattern of each individual within different populations.

In order to face the challenge of simultaneously assessing the impact of different reasons for making food choices, Steptoe, Pollard, and Wardle (1995) developed a multidimensional measure to evaluate the motives of food choice among consumers, called the Food Choice Questionnaire (FCQ), composed of 36 items that are distributed in nine factors or dimensions. Its development included an extensive review of scientific literature and consultation of experts who investigated the factors that influence food choice as well as the collection and exploratory data analysis of a population.

In the UK, where the FCQ was applied for the first time, health, convenience, and sensory appeal were the most emphasized dimensions among consumers (Step toe et al., 1995). A similar study conducted in Russia depicted that sensory aspects and food availability were the most

important reasons for the choice of food, followed by price (Honkanen & Frewer, 2009).

In general, in western populations the factors that drive food choices the most are sensory appeal, health, convenience and price (Eertmans, Victoir, Notelaers, Vansant, & Van Den Bergh, 2006; Fotopoulos, Krystallis, Vassallo, & Pagiaslis, 2009; Januszewska, Pieniak, & Verbeke, 2011; Steptoe et al., 1995). The studies conducted also stratified consumers by age and sex, confirming the influence of these parameters in food choice. Ethical and environmental concerns were also key aspects for the European population (Lindeman & Väänänen, 2000; Steptoe et al., 1995).

The FCQ has also been used to test reasons for consuming particular foods, such as foods from organic production (Chen, 2007; Lockie, Lyons, Lawrence, & Mummery, 2002), functional foods (Ares & Gámbaro, 2007), or rye bread (Pohjanheimo, Paasoavaara, Luomala, & Sandell, 2010).

This study aims to assess the attitudes and food choice criteria of the Cape Verdean population. The main objectives are: i) to evaluate the applicability of the FCQ in Cape Verde, ii) to establish the relative importance of different food choice criteria and iii) to identify consumer groups according to food choice motives. In addition, present research may contribute to the design of education programs and to

\* Corresponding author.

E-mail address: [lmacunha@fc.up.pt](mailto:lmacunha@fc.up.pt) (L.M. Cunha).

improve interventions in nutrition awareness campaigns. Overall, this work brings great contributions to the literature regarding food choice in developing countries in Africa, especially since no valid cross-sectional studies were reported in the literature for these populations.

## 2. Materials and methods

### 2.1. Materials

The Portuguese version of the FCQ, translated by [Alves et al. \(2005\)](#) which was applied in Portugal, was used. The FCQ's questions were introduced by the affirmative sentence "It's important to me that the food I eat on a typical day..." followed by each motive, evaluated on a seven-point scale, going from 1-totally disagree, to 7-totally agree. Such scale adjustment has also been made by [Pieniak, Verbeke, Vanhonacker, Guerrero, and Hersleth \(2009\)](#), [Fotopoulos et al. \(2009\)](#) and [Prescott, Young, O'Neill, Yau, and Stevens \(2002\)](#), among others. The last part of the questionnaire was reserved to questions about socio-demographic characteristics such as age, sex, level of education, location, size and type of household.

### 2.2. Subjects and procedures

The respondents were randomly recruited in their house, workplace, health centers and central locations such as squares and markets, structured by residence location (urban, inner zone and coastal zone), sex and age group. Subjects living in the island of Santiago, aged 18 years and above, without self-reported history of chronic disease were approached to collaborate in the study. Face to face interviews were conducted with 503 participants. In order to validate the applicability of the FCQ for this population, questionnaires were re-administered following a test-retest procedure. At the end of the interview, respondents were asked if they would be available to respond to the same questionnaire within three to four weeks, and those who agreed (119 participants) registered their contacts (telephone number, place of residence and name) and were later contacted.

The surveys took place between March and May 2015, and all individuals participated freely, without incentive or reward.

### 2.3. Data analysis

Statistical analysis was performed with IBM SPSS Statistics, v. 23.0 and Microsoft Excel. To confirm the fit of the data to the original FCQ's factorial structure, the first step was a confirmatory factor analysis using IBM SPSS AMOS, v. 23.0. Due to the data structure, an exploratory factor analysis was used to determine the factor structure of the FCQ's best describing of the population under study. Internal reliability of each extracted factor was tested using Cronbach's Alpha, and scores for the resulting factors were computed by averaging (un-weighted) item ratings per factor, yielding values from 1 – not at all important to 7 – very important. Nonparametric tests were employed where necessary because of the skewed nature of the FCQ data.

A cluster analysis was performed in order to identify groups with similar food choice criteria. In order to compensate for variations in the interpretation of the response scale, responses given by each respondent were re-coded. For each respondent, the deviation of the response score given to each item from the individual average from the responses given to all the 36 items was computed. Hierarchical cluster analysis (Ward's method) followed by a K-mean clustering was applied, with the square of the Euclidean distance being used as a measure of distance. The analysis used to determine the number of clusters to adopt was conducted using the [Fotopoulos et al. \(2009\)](#) method based on the convergence between the clustering data and the discrimination between groups, considering all possible scenarios.

For the test-retest procedure, the Wilcoxon test was used to analyze the homogeneity of each factor between the first and second

applications of the questionnaire. Spearman's rho correlation with 0.01 significance level was also used.

### 2.4. Ethics

Ethical clearance was granted by the University of Porto's Ethics Committee. The study was also authorized by Cape Verdean competent health authorities. Participation was voluntary with guarantee of anonymity.

## 3. Results

Only 443 questionnaires were considered for analysis, as many questionnaires had to be discarded due to incomplete data or because they had the same response level (same Likert score) on more than 90% of the FCQ items. Additionally a few respondents of lower educational level stated they did not understand some of the questions and were not sure of their response. The participants' mean age was  $35.9 \pm 6.4$  years and there were more women than men (64% vs 36%). Women were more accessible compared to men because most men go to their place of work during the day in Cape Verde. Also, household chores, food choice and food preparation are usually under the responsibility of women that act as "household gatekeepers". [Table 1](#) presents the demographic details of the selected sample and compares it with the population being studied.

For the test-retest procedure only 104 responses were considered as valid.

### 3.1. Choice criteria

#### 3.1.1. Confirmatory factor analysis

Confirmatory factor analysis assessed the fit of the original model to

**Table 1**  
Sample characterization and corresponding population statistics.

Data collected	Total (n)	Population* (%)
<b>Sex</b>		
Female	279 (64.4%)	53.3
Male	154 (35.6%)	46.7
<b>Age group (years)</b>		
18–29	210 (48.5%)	49
30–39	95 (21.9%)	18
40–49	48 (11.1%)	15
50–59	42 (9.7%)	9
60–69	14 (3.2%)	3
> 69	24 (5.5%)	6
<b>Residence location</b>		
Urban	218 (50.3%)	50.9
Inner land	146 (33.7%)	25.7
Coastal	69 (15.9%)	23.4
<b>Level of education</b>		
None	37 (8.5%)	14.4
Basic education	27 (6.2%)	54.7
Secondary education	283 (65.4%)	23.2
Higher education	86 (19.9%)	7.7
<b>Household size (No. of persons)</b>	$\bar{x} = 4.7$	$\mu = 5.1$
1	14 (3.2%)	7.2
2	37 (8.6%)	8.6
3	91 (21.1%)	13.8
4	79 (18.3%)	15.7
5	74 (17.2%)	16.1
6+	135 (31.6%)	38.6
<b>No. of children (&lt; 15 years) in the household</b>		
0	158 (36.9%)	21.8
1	136 (31.8%)	21.3
2+	134 (31.3%)	56.9

\* Data from IDRF (2001/2002).

Download English Version:

<https://daneshyari.com/en/article/5736038>

Download Persian Version:

<https://daneshyari.com/article/5736038>

[Daneshyari.com](https://daneshyari.com)