MEAT AND FISH DEMAND IN TUNISIA: ECONOMIC AND SOCIO-DEMOGRAPHIC FACTORS EFFECTS

Mohamed Zied DHRAIEF, MERIEM OUESLATI and BOUBAKER DHEHIBI

1,2 Laboratory of Agricultural Economics, National Institute of Agricultural Research, Tunisia. Rue Hedi Karray, Ariana 2049, Tunisia
dhraief.mohamedzied@iresa.agrinet.tn; oueslati.meriem@iresa.agrinet.tn

3 Social, Economic and Policy Research Program (SEPRP). International Center for Agricultural Research in the Dry Areas (ICARDA), P.O.Box 5466, Aleppo, Syria
b.dhehibi@cgiar.org

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Mohamed Zied Dhraief 1, Meriem Oueslati 2 and Boubaker Dhehibi 2

1 Laboratory of Agricultural Economics, National Institute of Agricultural Research, Tunisia. Email: dhraief.mohamed@enis.agrarin.tn; oueslati.meriem@enis.agrarin.tn
2 Social, Economic and Policy Research Program (SEPRP), International Center for Agricultural Research in the Dry Areas (ICARDA). Email: b.dhehibi@icarida.org

1.INTRODUCTION AND RESEARCH QUESTIONS

Since 1990's, food demand has had significant changes related particularly to urbanization process; new lifestyles; industrialization of food sectors; woman work; the emergence of modern retail and increasing health and nutrition concerns.

- The structure of the consumption of meat and fish has undergone a significant evolution over the past two decades. Between 1980 and 2005, consumption of poultry and fish grew remarkably respectively by 80% and 32%. Sheep meat consumption increased by 24% and beef has decreased by 21% over the same period. Concerning the expenditures, they have more than doubled for mutton (102%) and poultry (143%) and especially fish (206%).

- The remarkable increase in fish expenditure reflects the new consumption patterns of the Tunisian consumer.

Why assessing the households economic and socio demographic factors on Tunisian meat and fish consumption?

- First, food habits are changing rapidly with the new sociodemographic characteristics of the Tunisian population. Age, income level and education level are thus important factors in purchasing decisions in a country where 55% of the population has an age lower than 30 years in 2005 and whose education and income is improving day by day.

- Second, most of the studies carried out in Tunisia aimed to find future projections for demand, for planning objectives, considering only two variables: population and income. This study seeks to improve knowledge and understanding of meat and fish expenditure patterns in Tunisia, taking into account differences in demand behavior across regions as well as across income groups.

- Last, Tunisian decision makers are concerned by food and nutrition and are interested in studying the structure of meat and fish consumption and the means to predict and adjust its future evolution.

The objectives of this research are:

- to analyze the structure of meat and fish demand and to identify the principal characteristics of Tunisian meat and fish consumption trend.

- to estimate the demand parameters using a complete demand system.

- to compare and choose among different functional forms.

2.MODELING FRAMEWORK

Theoretical Model

Maximine utility function, subject to a budget constraint

Max. \( u = \sum_{i=1}^{n} q_i \cdot p_i - \varepsilon \)

Subject to: \( \sum_{i=1}^{n} p_i \cdot q_i = m \)

Where \( u, q_i, p_i \) are utility, quantity and price for food i; respectively; and \( m \) is the total expenditure or income.

Demand equation

\[ q_i = \left( \frac{\varepsilon}{p_i} \right)^{\frac{1}{\varepsilon}} \cdot \left( \frac{m}{\varepsilon} \right)^{\frac{1}{\varepsilon}} \]

Where \( \varepsilon \) is the income elasticity of demand for good i, and \( p_i \) is the uncompensated, own-price elasticity, while the \( \varepsilon \) \( [\varepsilon] \) are the cross-price elasticities.

SYNTHETIC MODEL

Rotterdam System - ROT

\[ u = \sum_{i=1}^{n} q_i \cdot p_i - \sum_{i=1}^{n} b_i \cdot q_i \]

where \( a_i, b_i, c_i \) are additional parameters.

Alten Mid Amel Demand System - AIDS

\[ u = \sum_{i=1}^{n} q_i \cdot p_i - \sum_{i=1}^{n} b_i \cdot q_i \cdot a_i \]

CBS System

\[ u = \sum_{i=1}^{n} q_i \cdot p_i - \sum_{i=1}^{n} b_i \cdot q_i \cdot a_i - \sum_{i=1}^{n} c_i \cdot q_i \]

NBR System

\[ u = \sum_{i=1}^{n} q_i \cdot p_i - \sum_{i=1}^{n} b_i \cdot q_i \cdot a_i - \sum_{i=1}^{n} c_i \cdot q_i \cdot a_i \]

Tests results for the competing demand models and the synthetic system: likelihood ratio test statistics and Goodness of fit

Data

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<th>Education Level</th>
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<table>
<thead>
<tr>
<th>Income (per month)</th>
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<tbody>
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<tr>
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<tr>
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4.CONSULTING AND POLICY IMPLEMENTATIONS

Empirical Results from this research:

- Stimulate the necessity for decision makers to set up adequate pricing and marketing policies in the future. The specification of a segmentation among household’s provided not only a complete panorama of meat and fish consumption in Tunisia but also provides useful information on socio economic and demographic factors affecting the demand of these particular foods.

- Suggests the assessment of other factors such as diet quality and information about diet-heath regarding their influence on the demand of meat and fish products.

- Encourage further analysis on the estimation and comparison of multi-equation systems using panel data. This is a field where the subject of theoretical research, especially in regard to the development of specification tests in multivariate version is lacking.