

Research article

Effect of Socio-Economic Features of Households on Frozen Meat Consumption in Egypt: A Case Study of Menofia Province

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Abstract

In this study, factors affecting frozen meat consumption and the relationships between frozen meat consumption and some socio-economic features of households were studied and tested using chi-square and correlation analysis. Data used in the study were obtained from 1296 households through a questionnaire conducted in July, August and September, 2012. According to the results of study, 30.4 % of households consumed frozen meat, while 69.6 % of them didn't consumed. When the reasons for consuming frozen meat were asked to households, 64.8 % of them stated that the frozen meat is inexpensive and 35.2% of households were familiar with frozen meat. On the other hand, when the reasons for not consuming frozen meat were asked to (902) households, the answers were not safe (44.55%) tasteless (35.45%) and unfamiliar (20%) respectively. Frozen meat consumption had statistically significant correlations with education level, gender, age, household size, working of women, monthly household income and income type. It was found that, working of women, household size, education level and household of variable income have positive significant effect on the probability to purchase frozen meat. On the other hand, there was negative significant correlation between monthly household income and frozen meat consumption. **Copyright © IJEBF, all rights reserved.**

Key words: Frozen meat consumption, socio-economic features of households, questionnaire, chi-square analysis.

Introduction

The need for long term storage of foods has appeared with the start of human history. Storage of foods improved throughout the history along with the changes in conditions and technology. Many preservation techniques are used to delay or prevent microbial spoilage of foods (Korel et al., 2005). Among the factors contributing to increased demand for frozen food are entering of women in work force and resulting changes in life styles (Keskin, 2002). Frozen food consumption was associated with gender, occupation, marital status and monthly food expenditures, but not with education level, household size, monthly income, age, spouse's employment (Bal et al., 2012). It was found that there was a significant ($P < 0.05$) association between frozen food consumption and income type of consumers, that is, no income, fixed income or variable income. Variable income or having no income increased frozen food consumption (Tzimitra-Kalogianni, 1996). Changes in the living conditions of the consumers, involvement of women in the business life, lack of enough time for such women to prepare meals due to their heavy work schedule or their unwillingness to spare much time for cooking lead them to the frozen foods which are practical and easy-to-prepare (Bal et al., 2012). A study was conducted to determine the relationships between frozen food consumption and socio-economics traits. They found that there was a linear connection between frozen food consumption and income level. The number of education person living at study area was higher than those of uneducated persons. In addition, as the number of person in family increased. It was determined that consumer prefer frozen foods because of easy preparation of frozen foods and the rational use of their times. The most important in formation source on frozen food is television with 35.5% (Külekcı et al., 2006).

Data and Methodology

The data was obtained from a field survey carried out in the period of July to September 2012. The data of the research consists of information obtained by a questionnaire and face-to-face interview with families who were selected through randomly sampling method in Menofia province. The information was about frozen meat consumption, gender, income level, education level, family size, type of income (fixed or variable) and working status of women. The total sampling volume was 1296 household. Responses of illiterate consumers were recorded by the surveyor.

Chi-square (χ^2) analysis was performed to determine whether there was a relationship between some socio-economic conditions of people (gender, education level, occupation, household size, monthly income, age and employment of women). Chi-square formula is as follows (Gujarati, 1995; Mirer, 1995):

$$\chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i}$$

Where;

χ^2 = Chi-square value; O_i = Observed frequency value;

E_i = Expected frequency value.

Results and discussion

1- Socio-economic profile of people in questionnaire sample

Table (1), explains the socio-economic features of households in the questionnaire. According to this table, most of households in questionnaire were female (66.7%). The most household's age (47.4%) ranged from 36-45 years old and the lowest percent (11.2%) was over 45 years old. The education level of households in questionnaire was medium educated (35.1 %), higher educated (34%) and non-educated (30.9%). Most of households live in urban areas (58.6%) and 41.4% were lived in rural areas. 54.4% of household size was 4-5 person, 27.5 % was 1-3 person and 18.1 % was over 5 person respectively. The term working status of women revealed that 64.5 % was not working, while 35.5 was working. Studying the monthly household income (LE) in questionnaire revealed that 36.8% of households with monthly income ranged from (300-599LE), 37% with monthly income ranged from (600-899 LE), 17.8 % with monthly income (900-1500 LE) and 8.5% with monthly income over 1500 LE. Percentage of household that had fixed monthly income was 65.27 and 34.72% with variable income.

Table 1: Socio-economic profile of people in questionnaire sample (n= 1296)

Variable	Frequency	%	
Gender	Male	432	33.3
	Female	864	66.7
Age	25-35	537	41.4
	36-45	615	47.4
	Over 45	144	11.2
Education level	Non-educated	400	30.9
	Medium educated	455	35.1
	Higher educated	441	34
Living area	Rural	536	41.4
	Urban	760	58.6
Household size (person)	1-3	356	27.5
	4-5	705	54.4
	Over 5	235	18.1
Working status of women	Working	306	35.5
	Not working	558	64.5
Monthly household income (LE)	300-599	477	36.8
	600-899	480	37
	900-1500	229	17.7
	Over 1500	110	8.5
Type of monthly income	Fixed income	846	65.27
	Variable income	450	34.72

2- Consumers' attitudes, preferences and consumption frequency of frozen meat

The results in table (2) revealed that 30.4 % (394) of households consumed frozen meat, while 69.6 % (902) of them didn't consumed. These results are probably due to the nature and culture of Egyptian citizens. The results not agree with (Bal et al., 2012), they determined that 72.12% of the families consumed frozen food while 27.88% did not.

When the reasons for consuming frozen meat were asked to these 394 households, 64.8 % of them stated that the frozen meat is inexpensive and 35.2% of households were familiar with frozen meat. These results agreed with (Lampila and Lahteenmäki, 2007), they concluded that price and habituation are important than the processing method itself. On the other hand, when the reasons for not consuming frozen meat were asked to (902) households, the answers were not safe (44.55%) tasteless (35.45%) and unfamiliar (20%) respectively. these reasons of not consuming frozen meat are the same obtained by Bal et al., 2012.

When households were asked how often they consume frozen meat, the answers were once a week (37.5%), twice a week (28.8%), three per month (20%), twice a month (7.7%) and once a month (6%) respectively. these probably as a result of changes in monthly income, working nature of women, price and household size.

Table 2: Consumers' attitudes, preferences and consumption frequency regarding to frozen meat consumption

Parameter	Frequency	%	
Frozen meat consumption	Consumers	394	30.4
	Non consumers	902	69.6
Reasons for consuming frozen meat	Inexpensive	255	64.8
	Familiar	139	35.2
Reasons for not consuming frozen meat	Tasteless	320	35.45
	Unfamiliar	180	20
	Not safe	402	44.55
Consumption frequency of frozen meat	Once a week	148	37.5
	Twice a week	113	28.8
	Once a month	24	6
	Twice a month	30	7.7
	Three per month	79	20

3- Relationship between frozen meat consumption and socio-economic features of consumers

As shown in table (2), there was a significant effect ($P < 0.05$, $\chi^2 = 4.13$) of gender on frozen feed consumption, as, the female (32%) consume more frozen food than male (26.4%). Age of households significantly affect ($P < 0.01$, $\chi^2 = 12.23$) the frozen meat consumption, as the consumption was the highest (52.8%) for households of 36-45 years

old and the lowest (42.8%) for households of 25-35 years old. Higher educated households consumed more frozen meat (60.6%) than medium educated (46.5%) and non-educated (33.7%) respectively; therefore the education level has a significant positive effect ($P < 0.001$, $\chi^2 = 69.94$) on frozen meat consumption. Households of urban areas significantly ($P < 0.001$, $\chi^2 = 40.26$) consume more frozen meat (61%) than that of rural areas (42.9%) respectively. This might be due to the life-style of people in urban cities is different from that of their counterparts in rural areas and this also influences to a considerable extent, their consumption patterns. There was a significant ($P < 0.001$, $\chi^2 = 142.41$) direct relationship between household size and frozen meat consumption. The frozen meat consumption was higher for working women (65.4%) than non-working one (41%). There was a significant ($P < 0.001$, $\chi^2 = 48.50$) inverse relationship between monthly income of household and frozen meat consumption. Households with variable monthly income significantly ($P < 0.001$, $\chi^2 = 66.32$) consume frozen meat (67.8%) more than that of fixed monthly income (42%) respectively. These results in general agreed with those of **Bal et al., 2012**; **Murat et al., 2009** and **Tzimitra-Kalogianni, 1996**, they indicated that gender, education level, monthly income, household size, working of women have a significant effect on frozen meat consumption, where the education level and working of the mother and the income of the family positively affect the consumption of frozen food.

Table 3: Relationship between frozen meat consumption and socio-economic features of consumers

Variables		Frozen meat consumption						χ^2	P
		Total	Consumers		Non -consumers				
			Freq.	%	Freq.	%			
Gender	Male	432	114	26.4	318	73.6	4.13	0.04	
	Female	864	277	32	587	68			
Age	25-35	537	230	42.8	307	57.2	12.23	0.002	
	36-45	615	325	52.8	290	47.2			
	Over 45	144	64	44.4	80	55.6			
Education level	Non educated	400	135	33.7	265	66.3	69.94	0.000	
	Medium educated	455	257	46.5	198	43.5			
	Higher educated	441	268	60.6	173	39.4			
Living area	Rural	536	230	42.9	306	57.1	40.26	0.000	
	Urban	760	463	61	297	39			
Household size (person)	1-3	356	98	27.5	258	72.5	142.41	0.000	
	4-5	705	380	54	325	46			
	Over 5	235	180	76.6	55	23.4			
Working status of women	Working	306	200	65.4	106	34.6	68.48	0.000	
	Not working	558	229	41	329	59			
Monthly	300-599	477	310	65	167	35	48.50	0.000	

household income (LE)	600-899	480	300	62.5	180	37.5	66.32	0.000
	900-1500	229	98	42.8	131	57.2		
	over 1500	110	45	41	65	59		
Type of monthly income	Fixed income	846	355	42	491	58	66.32	0.000
	Variable income	450	305	67.8	145	32.2		

Partial correlation between frozen meat consumption and some socioeconomic features of households

Socio-economic features	Frozen meat consumption
Education level	0.114**
Monthly household income	- 0.271**
Working of women	0.156**
Household of variable income	0.371**

** Correlation is significant at the 0.01 level (2-tailed).

Education level, working of women and Household of variable income were positively correlated with frozen meat consumption. While, monthly household income was negatively correlated with frozen meat consumption.

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