



Factors Affecting Consumption of
Frozen Meat in Two Selected Residential Areas
in Beirut, Lebanon

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Errata to FAS-AUB Publication No. 53 Entitled «Factors Affecting Consumption of Frozen Meat in Two Selected Residential Areas in Beirut Lebanon.» by Salah M. Yacoub

Fawzi M. Al Haj and Nada Abu Ghanima

Cover Page Line 2; Should read **Frozen Meat**. Third author's name should read NADA ABU-GHANIMA

Title page Same as above

Table of Contents; line 9; Should read **and** their influence
" " " ; line 23; Should read **the Satisfaction Factor**

List of Tables; Table 3; Should read **on religion**
" " " ; Table 13, add coma after consumption and remove parenthesis

Page No.

- 10 Line 16; Remove **Purpose and Objectives** before the heading
- 15 Line 9; The denominator in the formula should read $1 + N(e^2)$
- 20 Bottom of Table 2; Should read : $X^2 = 19.89$; 4 d.f.; $P < 0.001$; $\bar{C} = 0.46$
- 23 Bottom of Table 4; Add : $X^2 = 20.94$; 4 d.f.; $P < 0.001$; $\bar{C} = 0.46$
- " The two lines following Table 4 are footnotes for Table 4
- " Bottom of Table 5; Should read : $X^2 = 80.59$; 2 d.f.; $P < 0.001$; $\bar{C} = 0.86$
- " The three lines following Table 5 are footnotes for Table 5
- 26 Bottom of Table 7; Should read : $X^2 = 16.32$; 4 d.f.; $P < 0.01$; $\bar{C} = 0.42$
- 27 Bottom of Table 8; Should read : $X^2 = 17.05$; 2 d.f.; $P < 0.001$; $\bar{C} = 0.47$
- 28 Bottom of Table 9; Should read : $X^2 = 36.07$; 4 d.f.; $P < 0.001$; $\bar{C} = 0.56$
- 28 Bottom of Table 10; Should read : $X^2 = 83.99$; 4 d.f.; $P < 0.001$; $\bar{C} = 0.80$



**Factors Affecting Consumption of
Frozen Meat in Two Selected Residential Areas
in Beirut, Lebanon (1)**

by

Salah M. Yacoub, Fawzi M. Al-Haj and Nada Abu-Ghanima (2)

THE PROBLEM

Much meat is being consumed by the Lebanese people. The national production of meat, however, does not exceed 14% of what is needed. Seventy-four percent of meat consumed is imported fresh and 12% is imported frozen. High prices of fresh meat are due to lack of organization in importing meat. Merchants import small quantities at irregular intervals (Slam, 1969, pp. 440-442).

Lebanon's total consumption of meat decreased between 1964 and 1967 (Shwayri, 1969, p 402), while its population increased at an annual rate of 2.8% (United Nations, 1970, p 73). This situation has created a problem for the Lebanese society, especially, if one considers that the national production of all types

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of animal protein covers only 38% of what is desired and needed by every individual (Saad, 1971, p 6). One way to solve the problem and to correct the deficiency in protein intake is to increase the consumption of frozen meat. This is especially true since the types of frozen meat being imported into Lebanon are quite competitive pricewise, with those of fresh meat (Idriss, 1971), and since the process of freezing the meat does not deprive it of its nutritional value (Harris, 1960, pp 273-274). But, the decision to consume frozen meat is the result of a complex pattern of mental activity that is often affected by factors related to the consumer's personal characteristics, the characteristics of the product, the social environment, and/or the communication process. Therefore it becomes necessary, if the consumption of frozen meat is to be encouraged, to identify characteristics which erect barriers and attempt to reduce their negative influences.

Purpose and Objectives

PURPOSE AND OBJECTIVES

The main purpose of this study was to identify the factors affecting the acceptance by housewives of frozen meat as a new food product in two residential areas of Beirut, namely Mazra'a and Ashrafieh. The underlying premise was that, if the factors affecting consumption of frozen meat were precisely identified, such knowledge could and should help in spreading its use in various communities. In addition, the effect of mass-media on spreading information about frozen meat was investigated.



PREVIOUS RESEARCH

Since consumption of frozen meat by the Lebanese people was considered a new practice as well as an example of a social action or a decision which individuals have to make, studies on adoption and decision-making were reviewed and guided the development and the design of this study. Because of space limitations, however, it is not our intention to review previous research on adoption. Several hundred studies have been conducted on the subject and the findings have been summarized in two books by Lionberger (1960) and Rogers (1962) which the reader is advised to consult. The following studies, however, are more specifically related to this study and their findings should be highlighted.

Darrah (1967, p 75) stated that some religions govern the kinds of food, including meat, their adherents may eat. Britt (1970, p 212) supported the same view. Moslems, for example, eat meat if it is killed according to the « halal » method, namely, slitting the throat of the animal while holy verses of Al-Fatiha are read. Level of income is an important characteristic which affected the adoption or consumption of food products (Darrah, 1967, pp 68-72; Bland and Mize, 1960, p 25; Bivens, 1960, p 35). With a decline in income, most consumers reduced meat purchases and increased purchases of less expensive food. Khouri (1964) found that high income affected the consumption of frozen meat positively. Size of the family also had an effect on decisions to buy food. Large families tended to obtain their nutritious food from cheaper sources (Darrah, 1967, p 74; Bivens, 1960, p 42). Adopters' or consumers' ages were found to affect their adoption of certain practices or their consumption of certain kinds of food (Al-Haj and Jabr, 1972, p 9; Bivens, 1960, p 40). Education was another factor which affected adoption of new practices or consumption of food (Al-Haj and Yacoub, 1972; Bland and Mize, 1960, p 25).



Factors which bring the consumer's attention to the product, such as advertising, food fads, health information and propaganda, can affect consumption. Darrah (1967, p 76) demonstrated the great impact which the stream of advertising matter, now being poured to consumers in exhortations and jingles via televisions, newspapers, radios and other media, has on purchases and consumption. Bland and Mize (1960, p 12) and Bivens (1960, p 43) supported the same view, while Rappaport (1970, p 38) stated that different kinds of communication such as television, radio, etc. would affect decision making in general.

Factors, such as the complexity of the product or the practice, its economic feasibility, and its availability and cost would affect its rate of adoption (Al-Haj and Yacoub, 1972). According to Bivens (1960, pp 40-44), the size of the individual units of the product, its color, palatability, nutritional value and substitutability, its price and the design of its package affects consumption. Darrah (1967, pp 84-89) supported this view and added that substitutability, which refers to the possibility of using one food instead of another, is important in times of food shortage and high prices. He felt that since eating is necessary and expensive most people would like to make it as pleasant as possible. The tastes of food vary widely, and consumers tend to adopt the food they enjoy.

As stated earlier, consumption of frozen meat was considered as one example of social action and decision making. Parsons and Shils (1951, pp 53-54) stressed the importance of expectations and support of others, goals and ability of actors in explaining human action and behavior. Favorable beliefs, with respect to a referent, would affect social action towards it positively. This view was supported by Kurtz (1965, p 29), Howard (1965, p 149) and Brim et al. (1962, pp 49-50). Howard (1965, p 145) stated that there is a positive correlation between favorable attitude and positive decision making. Wilkins (1964, pp 238-239) claimed that attitude and behavior might correlate either positively or negatively, but generally they correlated positively. The group influence is another important factor that affects the individual's decisions in gene-

ral. Individuals tend to conform to the value of their groups and seek the support of their members. Individuals, therefore, care for their reference group. This statement is supported by Shelly and Bryan (1964, p 352), Festinger (1964, p 158), Howard (1965, p 155) and Collins and Gnetzkow (1964, p 144). Habits of the people, as well as their goals, would also affect their decisions (Kurtz, 1965, p 135; Atkinson, 1958, p 601; Brim et al., 1962, pp 49-50).

In addition to the literature reviewed above, a special reference should be made to Reeder's (1967) theory of social action and decision making which was also utilized by the authors when formulating the problem of the present study. The parts of the theory which are directly related to this study and the various research studies which were conducted to test such parts were recently summarized in two publications; one by Reeder et al. (1972) and the other by Yacoub and Haddad (1970, pp 2-3). The theory states that in a particular social action situation, such as consumption of frozen meat, each actor (respondent) will be influenced by three main types of variables which are possessed by him. These are : (1) his personal characteristics, such as age, level of education, income, etc., (2) his past social actions and experiences, and (3) his beliefs and disbeliefs. Not all variables related to these three types and possessed by the actor are essentially relevant to a particular social action situation. A few of each will be perceived by the actor as more relevant than others. The beliefs and disbeliefs which affect an individual's behavior in a specific social action situation may come from one or more of the following elements : his belief orientation, goals, value standards, habits and customs, expectations, self commitments, force, opportunities, ability, and support. These ten types of beliefs and disbeliefs are called the elements of decision making and of social action.

This study dealt with six out of the ten cognitive elements of Reeder's frame of reference. These six elements, in the authors' opinion, were considered most relevant to the consumption of frozen meat, and included expectations, beliefs, goals, habits and

customs, ability, and support. The study also investigated the influence of certain personal characteristics — namely, age, education, income, occupation, size of family, and religious affiliation on frozen meat consumption. In addition, the influence of attitudes, opinions and satisfaction on the consumption of frozen meat were investigated.

THE AREA STUDIED

Ashrafieh and Mazra'a are two main residential areas in Beirut, Lebanon. The inhabitants of Ashrafieh are mainly Christians with a minority of Moslems; while the inhabitants of Mazra'a are mainly Moslems with a minority of Christians. Socio-economically speaking, Beirut is a heterogenous society. Thus, the inhabitants of the two residential areas selected are also heterogenous.

THE SAMPLE

A total of 150 housewives were selected randomly from the two residential areas of Ashrafieh and Mazra'a (75 respondents from each area). Housewives were chosen because it was believed that they were the principal purchasing agent of the family. According to Britt (1970, p 199) housewives normally wish to buy things which will please the members of the family provided this does not conflict with their own views of what is right, proper, healthy and esthetic. Through their behavior, however, other family members exert pressure to cajole the housewife to buy the things that satisfy their own desires. Even though Britt's idea is a Western one, it can be safely applied to Lebanon.

The procedure used for selection of the 150 housewives can be explained as follows : Beirut is divided into 58 **Moukhtarieh**. Each **Moukhtarieh** is divided into blocks and each block is divid-

ed into plots which are given numbers. Each plot may have a single house, a building consisting of several apartments, or it may be empty. Ashrafieh and Mazra'a are considered as two of the six largest **Moukhtarieh**. Each has nine blocks and the number of the plots within the blocks in both is almost equal. The total number of plots in Mazra'a and Ashrafieh is 1032. The size of the sample (n), in terms of plots, was then determined by using the following formula (Yamane, 1969, p 583) :

$$n = \frac{N}{1 + N(e^2)} \quad \text{where } n = \text{size of the sample, } N = \text{total}$$

number of plots 1032, and $e = \text{standard error} = .075$. The 150 plots were then chosen by using a cluster random sampling procedure. In every cluster, extra plots were chosen at random to replace the unqualified ones (empty ones). A systematized method was used to select the individual families from the plots chosen. If the plots chosen in the cluster were composed of single houses, the housewife in each was interviewed. If the plots, however, contained buildings with several apartments, the housewives interviewed were chosen randomly from the apartments on the first, the middle and the last floors of the first, second and third plots, respectively.

Throughout the analysis, the sample was divided into three main categories on the basis of the respondents' use of frozen meat : (1) the users, who were using frozen meat at the time of interview (total = 46), (2) the non-users, who never used frozen meat before (total = 56), and (3) drop-outs, who had used frozen meat once or several times before and then discontinued (total = 48). These three main categories of users (the dependent variable) were then related to each of the independent variables mentioned earlier.

RESULTS AND DISCUSSION

A. Personal Characteristics and their Influence on Consumption

It was hypothesized that Moslems tend to consume less frozen meat than others because of religious reasons. Furthermore, it was hypothesized that occupation of the household heads (3), family income and size, age and educational level of respondents, their exposure to mass media, and their knowledge about frozen meat would affect their consumption patterns. The findings, however, revealed that none of these factors, except respondents' knowledge about frozen meat had any significant bearing on frozen meat consumption.

Knowledge about frozen meat was measured in terms of the respondents' awareness of the existence of shops which sold frozen meat nearby, the way they perceived themselves as being informed about frozen meat, and their knowledge of the country from which frozen meat was imported to Lebanon. The majority of the users (89%) were aware of the presence of shops which sold frozen meat nearby their homes, while just 50% of the non-users were aware of the presence of such shops. The rest were unaware. Most of the drop-outs (75%) were aware of the presence of these shops. Those who were aware of the presence of the nearby shops that sold frozen meat consumed more of it than those who were not aware. The relationship was significant at the 0.001 level.

The majority of the respondents (84%) were little or not informed about frozen meat. However, 28% of the users were,

3. The household head was defined as the head of all persons who live in the unit (house) whether or not those persons are related. In the absence of the male household head the housewife is considered the household head.

to some extent, informed compared to seven percent and 13% of the non-users and drop-outs respectively. The rest were little or not informed. The relationship between being informed about frozen meat and its consumption was significantly related at the 0.05 level. In addition, there was a significant relationship at the 0.001 level between consumption of frozen meat and knowledge of the country from which frozen meat was imported to Lebanon (4). Those who knew the countries consumed frozen meat more than those who did not. In general, 71% of the total sample were not able to name any of the countries from which meat was imported into Lebanon. This further indicated that most of the respondents were not well informed about frozen meat.

When respondents were asked about their main source of information about frozen meat, 92% mentioned neighbors, relatives and friends. The rest heard or knew about it either from shops, which sold frozen meat, or from demonstrations, newspapers and television. In fact, only one respondent indicated that television was his main source of information.

B. Social and Psychological Factors and their Influence on Consumption of Frozen Meat

1. Beliefs and their Influence on Consumption

Ten belief statements were used to test this variable (Table 1).

4. These countries are mainly Argentina, Australia, Poland and China.

Table 1. Respondents' beliefs toward frozen meat and its consumption, Summer 1971.

Statement	Agree		Indifferent		Disagree		Direction of statement
	No.	%	No.	%	No.	%	
1. Frozen food is as good as fresh food	49	33	3	2	98	65	+
2. Frozen food does more harm than good to health	20	20	11	7	109	75	-
3. Frozen meat is the best meat	13	9	8	5	129	86	+
4. Frozen meat is very good for the health	33	22	24	16	93	62	+
5. Frozen meat is as good as fresh meat	26	17	5	3	119	79	+
6. Eating frozen meat should be forbidden since it is against religion	24	16	10	7	116	77	-
7. People who consume frozen meat are considered guilty	7	5	4	3	139	93	-
8. The refrigerating system where the frozen meat is kept before it reaches the consumer is adequate	120	80	20	13	10	7	+
9. Frozen meat loses too much weight when it is thawed	107	71	6	4	37	25	-
10. Frozen meat cuts are easier to keep and to use	96	64	9	6	45	30	+

Responses were rated on a three-point scale including agree, indifferent, and disagree. Some of these statements were positively stated (such as statements 1, 3, 4, 5, 8, and 10) while the rest were negatively stated. Respondents whose beliefs toward frozen meat were « favorable » were expected, theoretically at least, to agree with the positively stated statements and disagree with the negatively stated ones. On the other hand, those whose beliefs were « unfavorable » toward frozen meat were expected to disagree with the positively stated statements and agree with the negatively stated ones. Theoretically, at least all users (31% of the total sample) were expected to agree with all positive statements and disagree with all negative ones. Results, however, showed that such expectations did not hold for the five statements numbered 3, 5, 6, 7, and 8. Further probing revealed that the reason which caused a large percentage of the respondents to disagree with statements 3 and 5 was mainly due to their ignorance and to the little information they knew about frozen meat. The majority of those who disagreed with the two statements felt that frozen meat had a bad smell and it lacked the necessary vitamins.

Some of the explanations given by the respondents who disagreed with statement 6 were : « We should not interfere in other people's business », « Before we cut frozen meat at home we have to read holy verses in order not to be guilty », and « As long as we are not sure that the fresh meat we eat is slaughtered religiously, what difference would it make if we eat frozen meat ? ». The majority of the respondents disagreed with statement 7 mainly because they felt that there are poor people who need to buy frozen meat and that people should be free to eat whatever they choose. Most of the respondents, however, agreed with statement 8 because they did not know much about frozen meat and how it was refrigerated.

When the influence of the belief variable, (5) as a whole, on the consumption of frozen meat was investigated, it was found that those who had « favorable » beliefs consumed more frozen meat than those whose beliefs were « unfavorable » or « slightly favorable » (Table 2). The relationship between beliefs and frozen meat consumption was significant at the 0.001 level.

Table 2. Beliefs of respondents as they relate to consumption of frozen meat, summer 1971.

Beliefs	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Unfavorable (score 0-7)	20	36	1	2	11	23	32	21
Slightly favorable (score 8-13)	30	54	30	65	27	56	87	58
Favorable (score 14-20)	6	10	15	33	10	21	31	21
Total	56	100	46	100	48	100	150	100

$X^2 = 19.89$; 4 d.f.; P 0.001; C = 0.46.

An attempt was made to investigate whether religious affiliation had any bearing on the formulation of respondents' beliefs toward frozen meat consumption. Data revealed that all those who had « unfavorable » beliefs were Moslems while none of the Christians fell under this category (Table 3).

5. A belief score was constructed for each respondent. For statements 1, 3, 4, 5, 8, and 10, two points were given if the respondent agreed with the statement, one point for the « indifferent » response, and zero point for the « disagree » response. For statements 2, 6, 7, and 9, two points were given for the « disagree », one point for the « indifferent », and a zero point for the « agree » responses. The belief scores ranged from 0-20. Respondents with scores of 0-7 were considered as having « unfavorable » beliefs toward frozen meat consumption; those with scores of 8-13 were considered as having « slightly favorable » beliefs, while those with scores of 14-20 were considered as having « favorable » beliefs. Belief scores were then related to consumption.

Table 3. Relationship between beliefs towards consumption of frozen meat and religion, summer 1971.

Religion	Unfavorable beliefs		Indifferent		Favorable beliefs		Total	
	No.	%	No.	%	No.	%	No.	%
Moslems	16	100	6	86	40	31	62	41
Christians	0	0	1	14	87	69	88	59
Total	16	100	7	100	127	100	150	100

About two thirds of the Moslem respondents, however, had « favorable » beliefs toward frozen meat consumption and this possibly explained why religious affiliation was not significantly related to consumption.

2. Goals and their Influence on Consumption

Goals and motives of only two groups of respondents, namely the users and the drop-outs who used frozen meat for a long period of time and then stopped (total = 53), were investigated. The intent was to determine whether the respondents' perceived achievement of their goals and motives for consuming frozen meat had any bearing on their actual consumption of it. The goals and motives for consuming frozen meat were mainly economical since 57% of both users and drop-outs mentioned « to save money » as one of their goals. In addition, « to satisfy curiosity » and « to buy more and tasteful meat » were mentioned by 51% and 43% of the respondents respectively. « To buy cleaner meat » and « to improve family diet and health » were other goals which 38% and 6% of the respondents, respectively, had hoped to achieve.

When the users of frozen meat and the drop-outs who had used it for a long period of time and stopped were asked to what extent they felt that their goals and motives for buying frozen meat were achieved, 76% of the users felt that they achieved the goal of saving « to a great or to some extent », while 57% of the

drop-outs felt that way. Similar percentages for both groups (43% of each) felt that they achieved the goal of buying cleaner meat « to a great or to some extent ». More than half of the respondents in each of the groups, 53% of the users and 57% of the drop-outs, achieved the goal of buying more and tasteful meat. The perceived levels of achievement of the other goals mentioned by the drop-outs and the users were almost the same. The achievement of goals, as perceived by the respondents of the two groups, and their decision to use or not to use frozen meat were not significantly related.

3. Food Habits and their Influence on Consumption

Food habits of neighbors, friends, relatives, and their family, as perceived by the respondents, may affect respondents' decision to consume or not to consume frozen meat. The Lebanese people, generally, like to imitate each other and it is through this process that many new practices are spread. It was hypothesized, therefore, that if respondents perceived consumption of frozen meat by their neighbors, friends and relatives and other family members as being customary, they would also try to consume it.

A large number of respondents (43%) did not know whether it was customary for their neighbors to consume frozen meat. This may indicate that many people living in the two residential areas studied do not pay much attention to what their neighbors eat. Sixty-nine percent of the respondents, however, felt that it was customary for most or some of the neighbors to consume frozen meat. The relationship between the way respondents perceived the consumption habits of their neighbors and the respondents' consumption of frozen meat was not significant. The habits of friends and relatives as well as the habits of other members of the family affected frozen meat consumption more than the habits of neighbors. Only the users felt that it was customary for most of their friends and relatives to consume frozen meat; none of the non-users or the drop-outs felt that way (Table 4). On the other hand, 4% of the users as compared to 39% and 29% of the non-users and the drop-outs respectively,

Table 4. Habits of friends and relatives in relation to consumption of frozen meat, summer 1971.

Habits of friends and relatives	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Customary for most	0	0	11	24	0	0	11	7
Customary for some	21	38	25	54	24	50	70	47
Not customary	22	39	2	4	14	29	38	25
Do not know	13	23	8	17	10	21	31	21
Total	56	100	46	100	48	100	150	100

Chi-square was calculated after combining «customary for most» and « customary for some » categories.

Table 5. Habits of the family in relation to consumption of frozen meat, summer 1971.

Habits of the family	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Customary for most	1	2	21	46	0	0	22	15
Customary for some	3	5	22	48	13	27	38	25
Not customary	50	89	3	7	33	69	86	57
Do not know	2	4	0	0	2	4	4	3
Total	56	100	46	100	48	100	150	100

$X^2 = 80.59$; 2 d.f.; $P = 0.001$; $C = 0.86$.

Chi-square was calculated after combining the first two categories of habits and omitting the « do not know » category since the frequencies in the cells were too small.

did not perceive their friends and relatives as frozen meat consumers. Consumption habits of other family members affected respondents' consumption of frozen meat. Ninety-four percent of the users felt that it was customary for most or some of their family members to consume frozen meat; while 7% and 27% of the non-users and the drop-outs respectively felt that way (Table 5). The positive relationship between the way respondents perceived the consumption habits of their friends, relatives and other family members and their actual consumption of frozen meat was significant at the 0.001 level.

4. The Expectation Factor and its Influence on Consumption

Three dimensions of expectations were used to investigate the influence of this variable on consumption of frozen meat : self expectation, family's expectations and neighbors' and friends' expectations to buy and consume frozen meat. One question, which was asked of all respondents, was used to measure each dimension.

Self-expectation was examined by asking the respondents this question : « What kind of meat would you expect yourself to serve at your home for dinner to your guests ? ». Ninety-five percent of the non-users expected themselves to serve fresh meat as compared to 33% and 88% of the users and drop-outs respectively. None of the non-users as compared to 10% and 6% of the users and the drop-outs respectively expected themselves to serve frozen meat to their guests. The remaining respondents in each group (5% of the non-users, 57% of the users, and 6% of the drop-outs) had no preferences. It is evident from these findings that those who expected themselves to serve fresh meat to their guests in their homes were largely non-users of frozen meat; while most of those who expected themselves to serve frozen meat were actually the users. Self expectations and frozen meat consumption, therefore, were positively related.

When respondents were asked to explain why they would expect themselves to buy and serve fresh or frozen meat to their guests, almost half of the respondents said that their decision

would depend on the kind of meat they themselves consume at home. Of those who expected themselves to serve fresh meat (total = 58), 45% did so because fresh meat had a better taste, while 32.8% trusted fresh meat more than frozen meat. The majority (60%) of those who expected themselves to serve frozen meat to their guests felt that, by doing so, they could buy more meat since frozen meat was cheaper (Table 6). Self-expectation to serve fresh or frozen meat, however, was affected by the way respondents perceived their guests' reactions to the type of meat being served. When respondents were asked how they perceived their visitors' reactions towards being served frozen meat at their homes, 24% of the users thought that the guests would react favorably, while 41% thought that their guests would have unfavorable reactions. In contrast, only 4% of the non-users thought that their guests would react favorably compared to 68% of them who thought that the guests would have unfavourable reactions. Most of the drop-outs (73%) thought that their guests would react unfavorably (Table 7). The relationship between the way respondents perceived their guests' reactions toward being served frozen meat at their homes and respondents' actual consumption of it was significant at the 0.01 level. Such relationship was further supported when it was found that more non-users than users or drop-outs said they would be embarrassed if the guests found that they were served frozen meat at their homes (Table 8).

The expectations of other family members affected the consumption of frozen meat positively. Twenty-eight percent of the users were expected by their families to use frozen meat while 13% were not. The rest of the users (59%) indicated that their families were indifferent. None of the non-users mentioned that their families expected them to buy frozen meat. In fact, 64% of them indicated that they were not expected by their families to buy it. Among the drop-outs, 54% said that their families did not expect them to continue to buy frozen meat. This could be one of the reasons which made this group discontinue the use of frozen meat. The relationship between family expectations and consumption of frozen meat was significant at the 0.001 level.

Table 6. Respondents' reasons for buying and serving fresh or frozen meat for guests at their homes, summer 1971.

Reasons	No.	%
For buying fresh meat	(total = 58)	100
I am used to the taste of fresh meat and to the way it is cooked	9	15.5
Fresh meat has a better taste	26	45
I trust fresh meat more than frozen meat	19	32.8
I do not want my guests to feel that I am stingy and I am after saving by buying frozen meat	4	6.7
For buying frozen meat	(total = 10)	100
I can buy more meat since frozen meat is cheaper	6	60
Frozen meat is more convenient	4	40
Others	(total = 82)	100
Decision depends on the kind of meat we usually consume at home	73	89
No preference between fresh and frozen	5	6
Do not know	4	5

Table 7. Respondents' perception of their visitors' reaction towards being served frozen meat at their homes, summer 1971.

Visitors' reaction	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Favorable	2	4	11	24	5	10	18	12
Unfavorable	38	68	19	41	35	73	92	61
Indifferent	16	29	16	35	8	17	40	27
Total	56	100	46	100	48	100	150	100

$X^2 = 16.32; 4 \text{ d.f.}; P = 0.01; C = 0.42.$

Table 8. Respondents' reaction if the guests found that they were served frozen meat at their homes, summer 1971.

Respondents' reaction	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Embarrassed	42	75	17	37	33	69	92	61
Indifferent	14	25	29	63	15	31	58	39

$X^2 = 17.05; 2 \text{ d.f.}; P = 0.001; C = 0.47.$

The expectations of neighbors and friends were not as important as family expectations in influencing frozen meat consumption. This may be explained on the ground that the Lebanese people were more family oriented and they cared more about what their families expected them to do than their neighbors or friends. The majority of the respondents (92%) indicated that their neighbors and friends were indifferent, as far as their consumption of frozen meat was concerned, and the expectations of their neighbors and friends did not have any bearing on their consumption of frozen meat.

5. The Support Factor and its Influence on Consumption

Like the expectation factor, the support factor, as measured by the support received from the family, neighbors, and friends, was also hypothesized to have a direct bearing on the respondents' decision to consume or not to consume frozen meat. The support, or lack of it, received by the respondents from their family members to consume frozen meat was related positively to their actual consumption of it; such relationship was significant at the 0.001 level (Table 9). The support of neighbors, friends and relatives in relation to frozen meat consumption, however, was not at all important since almost all respondents (98%) felt that such people were indifferent.

Table 9. Family support in relation to consumption of frozen meat, summer 1971.

Family support given	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Yes	1	2	19	41	6	13	26	17
No	34	61	9	20	29	60	72	48
Family was indifferent	21	38	18	39	13	27	52	35
Total	56	100	46	100	48	100	150	100

$X^2 = 36.07$; 4 d.f.; P 0.001; C = 0.56.

Table 10. Knowledge of how to cook and handle frozen meat properly as it relates to its consumption, summer 1971.

Knowledge	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Cooked it correctly*	15	28	40	86	28	58	83	55
Cooked it wrongly**	1	2	6	14	15	32	22	15
Did not know how to cook it	40	70	0	0	5	10	45	30
Total	56	100	46	100	48	100	150	100

$X^2 = 83.99$; 4 d.f.; P 0.001; C = 0.80.

* This includes : (1) Cook it immediately while it is still frozen, (2) Thaw it the night before, (3) Thaw it at room temperature, (4) Depends on the season, in summer it is thawed at room temperature and in winter it is thawed the previous night.

** This includes : (1) Soak it in hot water, (2) Thaw it, then refreeze what is left.

6. The Ability Factor and its Relation to Consumption

The respondents' ability, in terms of knowing how to cook frozen meat properly, and in terms of having the time needed to cook it, was hypothesized to have bearing on their consumption patterns. When the ability of the respondents to cook and use frozen meat properly was investigated, it was found that 86% of the users actually handled and cooked frozen meat correctly, while only 28% of the non-users felt that they could do so (Table 10). The majority of the non-users (70%) did not know how to use it and 42% of the drop-outs either used frozen meat wrongly or indicated that they did not know how to use it. This may explain why the majority of the respondents were not satisfied with frozen meat and why the drop-outs discontinued its use. The positive relationship between consumption of frozen meat and the way it was cooked was significant at the 0.001 level.

The second dimension of ability was the availability of time needed by respondents to cook frozen meat. It was hypothesized that if respondents had the time needed to cook frozen meat, they would be more able to cook it. This would eventually affect positively their actual consumption of it. All users and 98% of the drop-outs indicated that they had the time needed to cook it, while 73% of the non-users said that they had such a time. Twenty-seven percent of the latter group, however, did not have time to cook frozen meat at home. Therefore, the availability of time to cook frozen meat and the actual consumption of it were positively related.

7. Attitudes and Opinions and their Relation to Consumption

Opinions and attitudes toward consumption of frozen meat were measured by using 8 statements (Table 11). Responses were rated on a scale ranging from **agree**, **indifferent**, and **disagree**. Some of these statements were positively stated. Respondents who have « favorable » attitudes and opinions toward frozen meat were theoretically expected to agree with the positively stated statements and disagree with the negatively stated ones.

On the other hand, those whose attitudes and opinions were « unfavorable » toward frozen meat were expected to disagree with the first five positively stated statements and agree with the negatively stated ones. Theoretically, at least the users (comprising 31% of the respondents) were expected to agree with all

Table 11. Respondents' opinions and attitudes toward frozen meat and its consumption, summer 1971.

Statement	Agree		Indifferent		Disagree		Direction of statement
	No.	%	No.	%	No.	%	
1. Everyone should buy frozen meat	4	3	1	1	145	97	+
2. The government should facilitate importing frozen meat	88	59	10	7	52	35	+
3. More shops that sell frozen meat should be available	61	41	20	13	69	46	+
4. I would recommend frozen meat to relatives and friends	46	31	10	7	94	62	+
5. Frozen meat should be available as much as fresh meat	98	65	11	7	41	27	+
6. It does not matter if frozen meat is available or not	136	91	2	1	12	8	—
7. Merchants should not sell frozen meat	21	14	6	4	123	82	—
8. The government should prevent importing of frozen meat since it is not slaughtered in a religiously acceptable way	16	11	7	5	127	85	—

positive statements and disagree with all negative ones. Results, however, showed that such expectation did not hold for most of the statements. Further investigations at the time of the interviews revealed that 97% and 85% of the respondents disagreed with statements 1 and 8 respectively, mainly due to their negative attitudes toward others' or governments' intervention in people's personal affairs. The majority's reasons for agreeing with statements 2, 3, and 5, and disagreeing with statement 7 were mainly economical. They felt that there were poor people who should be given a chance to buy frozen meat since it is cheaper than fresh meat.

An opinion and attitude score for each respondent was constructed in order to investigate the effect of this variable, as a whole, on the consumption of frozen meat. The procedure followed was similar to that followed when a belief score was constructed. Opinion and attitude scores were then related to consumption and it was found that those who had « favorable » opinions and attitudes consumed more frozen meat than those whose opinions and attitudes were not favorable (Table 12). The relationship between opinions and attitudes and frozen meat consumption was significant at the 0.001 level.

Table 12. Opinions and attitudes as they relate to consumption of frozen meat, summer 1971.

Opinions and attitudes	Non-users		Users		Drop-outs		Total	
	No.	%	No.	%	No.	%	No.	%
Unfavorable (a score of 5 or less)	23	41	3	7	12	25	38	25
Somewhat favorable (a score of 6-11)	31	55	19	41	30	63	80	53
Highly favorable (a score of 12-16)	2	4	24	52	6	12	32	21
Total	56	100	46	100	48	100	150	100



8. The Satisfaction Factor and its Relation to Consumption

Satisfaction of respondents and their families with the taste of frozen meat was hypothesized to affect its consumption positively. To test this, however, comparison was made between the groups of respondents, namely, the users and the drop-outs (total = 102). The non-users were not asked any of the satisfaction questions because they had no experience with frozen meat. About half of the users and their families, compared to only 2% of the drop-outs and their families, were « very satisfied » with frozen meat and its taste. Furthermore, 94% of the drop-outs compared to 8% of the users indicated that they and their families were « little or not satisfied » with the taste of frozen meat (Table 13). It could be concluded, therefore, that among

Table 13. Satisfaction of respondents and their families with frozen meat in relation to its consumption, summer 1971.

Degree of satisfaction	Users		Drop-outs		Total	
	No.	%	No.	%	No.	%
Very satisfied	22	48	1	2	23	23
Satisfied to some extent	20	44	2	4	22	22
Little or not satisfied	4	8	53	94	57	55
Total	46	100	56	100	102	100

the reasons which made the drop-outs discontinue to use frozen meat was their dissatisfaction with it and with its taste. Ninety-three percent of the users and drop-outs used frozen meat in cooking, while 73% used it in grilling and 42% in kibbeh (6).

6. It is a typical Lebanese dish which is mainly made of crushed wheat, ground meat and chopped onions, and eaten either raw or cooked in an oven.

The tastes and preferences of the 102 drop-outs and non-users of frozen meat were investigated indirectly by asking them about their reasons for not buying the product. Fifty-one percent of them indicated that their families disliked it, while 27% complained about its taste and smell. Eighteen percent of them preferred fresh meat over frozen and they were not willing to buy the later as long as the former is available. Other reasons for their dissatisfaction with frozen meat are shown in Table 14.

Table 14. Reasons given by the drop-outs and the non-users (total = 104) for not buying frozen meat, summer 1971.

Reasons for not buying frozen meat	No. of times mentioned*	Percent
Family did not like it	53	51
It has a bad taste and/or bad smell	28	27
Fresh meat is available and we prefer it over frozen meat	19	18
It has no vitamins	9	9
Size of family is small and it is economically justifiable to buy fresh meat	8	8
We do not trust frozen meat	7	7
We never tried it before and we are not sure how it would come out if we do	4	4
It is dry and has no fat	3	3
It loses weight when defrosted since a lot of water comes out of it during the process	1	1

* More than one reason was sometimes given by respondents which accounted for a larger total.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of the study was to investigate the factors which have affected the consumption of frozen meat, as a new food practice, in two areas of Beirut, namely, Mazra'a and Ashrafieh. In addition, the effect of mass-media on spreading information related to frozen meat was studied. Data were obtained by personal interviews from 150 respondents who were selected randomly from the two residential areas.

The findings of this study were inconsistent with those of other studies that showed the existence of a definite relationship between certain personal factors, such as religion, occupation, income, age, size of the family and exposure to mass-media and consumption of frozen meat. However, respondents' knowledge about frozen meat affected its consumption positively. Neighbors, relatives and friends were very important media sources which provided 92% of the respondents with information about frozen meat. Even though more than half of the respondents watched television, the role of this media in spreading information about frozen meat was negligible. This is mainly due to the fact that advertising on television to promote consumption of frozen meat in Lebanon has not as yet been effectively utilized.

Practically all respondents indicated that they knew how to handle and cook frozen meat; but, in reality, many of them did not know how to cook it properly. Knowing how to handle it and use it properly was significantly related to its consumption. Respondents' favorable opinions, attitudes and beliefs toward frozen meat and their satisfaction with it affected its consumption positively. Finally, the expectations and the support which respondents received from their family members to consume frozen meat, and the food consumption habits of their friends, relatives and other family members were found to affect consumption of frozen meat significantly. Importance of the economic goal,

mainly to save money, was evident for the majority of the users and drop-outs of frozen meat, but it was difficult to establish a relationship between their consumption habits and their perceived achievement of this goal.

Based on the findings of this study, it can be concluded that urban Lebanese people, in general, do not know much about frozen meat. Increasing their knowledge about it through mass-media in general and television in particular, may help increase their consumption of it. Furthermore, printing instructions in Arabic on the cover of the package to explain the proper ways of using the product, and changing people's beliefs and attitudes toward it, especially about its nutritional value, through mass media and television can help promote its consumption.

LITERATURE CITED

- Al-Haj, Fawzi M. and Ahmad Jabr. 1972. Effectiveness of the Wheat Research and Production Project in the Irbid District of Jordan. Mimeo pamphlet No. AES 10. Faculty of Agricultural Sciences, American University of Beirut. Beirut, Lebanon.
- Al-Haj, Fawzi M. and Salah M. Yacoub. 1972. « Factors affecting adoption of new agricultural techniques in Lebanese agriculture » in **Economic Development and Population Growth in the Middle East**, edited by Charles A. Cooper and Sidney S. Alexander. Elsevier, New York, pp 541-566.
- Atkinson, John W. 1958. **Motives in Fantasy, Action and Society**. D. Van Nostrand Company, Inc. Princeton, New Jersey.
- Bivens, Gordon E. 1960. « Consumer preferences and market development for farm products ». The Center for Agricultural and Economic Adjustment, College of Agriculture, Iowa State University of Science and Technology, Ames, Iowa.
- Bland, F.E. and Jessie J. Mize. 1960. **Consumer Motivation and Use of Poultry**, Georgia Agricultural Experiment Station, University of Georgia College of Agriculture Bulletin No. 76.
- Brim, Orville G., David C. Glass, David E. Lavin and Norman Goodman. 1962. **Personality and Decision Processes**. Stanford University Press, Stanford, California.
- Britt, S.H. 1970. **Consumer Behavior in Theory and in Action**. John Wiley and Sons, Inc. New York, London, Sydney, Toronto.

- Collins, Barry and Harold Gnetzkow. 1964. **A Social Psychology of Group Processes for Decision Making**. John Wiley and Sons, Inc. New York.
- Darrah, L.B. 1967. **Food Marketing**. The Ronald Press Co. New York.
- Festinger, Leon. 1964. **Conflict, Decision and Dissonance**. Stanford University Press, Stanford, California.
- Harris, Roberts and Harry Von Loesecke (Editors). 1960. **Nutritional Evaluation of Food Processing**. John Wiley and Sons, Inc. New York.
- Howard, John A. 1965. **Marketing Theory**. Allyn and Bacon Inc. Boston.
- Idriss, Rabah. 1971. (Personal communication). Burj, Beirut, Lebanon.
- Khouri, Victor. 1964. « Statistical study for home consumption of sheep, beef, pork and goat meat ». Associated Business Consultants, Beirut, Lebanon.
- Kurtz, Paul. 1965. **Decision and the Condition of Man**. University of Washington Press, Seattle.
- Lionberger, H.F. 1960. **Adoption of new Ideas and Practices**. The Iowa State University Press, Ames, Iowa.
- Parsons, T. and E. Shils. 1951. « Values, motives and systems of action » in **Toward a General Theory of Action**, by Parsons and Shils (Editors). Harvard University Press, Cambridge, Massachusetts.
- Rappaport, Alfred. 1970. **Information for Decision Making**. Prentice-Hall Inc. Englewood Cliffs, New Jersey.
- Reeder, W.W. 1967. A theory of decision making and social action. Cornell University, Department of Rural Sociology, Ithaca (unpublished).
- Reeder, W.W., A.E. Abdelrahman, I. Fahs, A. Haddad, P.C. Heckert, H.S. Jassal and Salah M. Yacoub. 1972. « A comparison of beliefs and disbeliefs and reference category characteristics as directive factors of social action in five cultures ». Paper presented in the Third World Congress of Rural Sociology held in Louisiana, August 22-27, 1972.
- Rogers, E.M. 1962. **Diffusion of Innovations**. The Free Press of Glencoe, New York.
- Saad, Ali. 1971. The problem of supplying Lebanon with meat. Al Anwar Supplement, Beirut, Lebanon. September 5, p 6 (text in Arabic).
- Shelly, Maynard W. and Glenn L. Bryan. 1964. **Human Judgments and Optimality**. John Wiley and Sons, Inc., New York.
- Shwayri, E. 1969. Development of animal production, Publication of Development Studies Association, Beirut, Lebanon. pp 391-413 (text in Arabic).
- Slam, F. 1969. Development of marketing animal production, Publication of Development Studies Association, Beirut, Lebanon. pp 428-446 (text in Arabic).
- United Nations. 1970. Studies on Selected Development Problems in Various Countries in the Middle East, 1970. New York.
- Wilkins, T. 1964. **Social Deviance**. Tavistock Publications Limited, London.
- Yacoub, Salah M. and Antoine Haddad. 1970. Factors influencing farmers' participation in a Lebanese village cooperative. Publication No. 48. Faculty of Agricultural Sciences. American University of Beirut. Beirut, Lebanon.
- Yamane, Taro. 1969. **Statistics : an Introductory Analysis**. Harper and Row, New York.