Egg consumtion patterns and consumer attitudes

EGG CONSUMPTION PATTERNS AND CONSUMER ATTITUDES

by

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ABSTRACT

The poultry industry of the United States has observed a decreased per capita consumption of shell eggs. The objective of this study is to evaluate consumer shell egg consumption, use patterns, and attitudes toward shell eggs in relation to socioeconomic characteristics in the Phoenix area. This information will provide a basis for future shell egg promotional efforts and determine if Arizona per capita shell egg consumption is in line with estimated national figures.

The relative number of responses which fell into various categories was of prime importance in the analysis. Therefore, chi-square analysis was used. The results of the study indicate that most households consume 1-12 eggs per week. Per capita shell egg consumption was 5.5 weekly or 286 eggs per year. Nonwhites had a higher household and per capita egg consumption than Caucasians. Males in the 15-19 age group and females in the 6-10 age group consumed eggs more frequently than any other age groups. Scrambled eggs were the most popular form in which eggs were consumed.

Consumer attitudes toward eggs as a separate entity and in relation to meat, cheese, and fish indicated that eggs had a favorable image. Physicians' advice against egg consumption because of cholesterol was negligible.

CHAPTER I

INTRODUCTION

Nationwide per capita consumption of shell eggs has decreased from 364 shell eggs in 1950 to an estimated 261 in 1973 (Table 1). However, very little information is available regarding egg consumption in relation to Arizona, socioeconomic characteristics, and ethnic groups. Awareness of the decreased nationwide per capita egg consumption has prompted research aimed at finding explanations for changing consumption and use patterns and to determine if Arizona per capita egg consumption is in line with national figures. Research of this nature is needed in order that the poultry industry can adjust, if needed, to meet the challenges of a competitive economy. Specifically, information is needed in areas of consumer shell egg consumption, use patterns, and attitudes toward eggs.

Purpose and Objectives

The purpose of this study is the determination of consumer shell egg consumption, use patterns, and attitudes toward shell eggs in the Phoenix area.

Specifically, the major objectives of this study were:

Table 1. Per Capita Consumption of Shell Eggs, United States, 1950-1973

Year	Number of eggs[a]		
	Shell	Processed[b]	Total
1950	364	25	389
1951	365	27	393
1952	362	28	390
1953	354	25	379
1954	351	25	376
1955	346	25	371
1956	345	24	369
1957	335	27	362
1958	328	26	354
1959	319	23	352
1960	306	29	335
1961	296	30	326
1962	294	30	324
1963	288	28	316
1964	283	30	313
1965	278	30	308
1966	282	29	313
1967	285	31	320
1968	284	35	316
1969	279	32	310
1970	277	34	311
1971	277	37	314
1972[c]	271	36	307
1973[d]	271	36	307

[a]Source: 1950 through 1965, Selected Statistical Series for Poultry and Eggs Through 1965 (1966, p. 91); 1966 through 1973, Handbook of Agricultural Charts (1973, p. 20).

[b]Shell equivalent of processed eggs.

[c]Preliminary.

[d]Estimated.

1. To discern consumption and use patterns for shell eggs in relation to economic and social characteristics of consumers.
2. To evaluate attitudes and opinions toward shell eggs.
3. To evaluate reasons for variation in consumption and attitudes of shell eggs as related to socioeconomic characteristics of consumers.

CHAPTER II

REVIEW OF LITERATURE

This chapter is a review of relevant research which contributes to the understanding of egg usage, egg consumption, and egg buying patterns.

Egg Use

Reasons for Egg Use

Attempts have been made to find out why people do or do not buy and use eggs. Fifty-five per cent of people questioned by Baker and Goldman (n.d., pp. 329-339) in Des Moines ate eggs because "we like them." Relatively few, about 17 per cent, mentioned protein, vitamins, or minerals. Five and one-half per cent of households used no eggs. Reasons for nonuse were generally related to distaste, the consumer being too young, and allergies to eggs.

Three hundred consumers in Columbus, Ohio, were asked by Jasper and Cray (1953) why they used eggs. Forty-six per cent answered simply they "liked them." Also given as reasons were:

Health Properties	32%
Convenience	11%

Economical	6%
Doctor's Orders	4%

According to a summary of twenty-two egg preference surveys family income, size of family, and race or nationality were factors heavily influencing egg demand. Reasons for use were summarized as tastefulness, healthfulness, and convenience (Jasper, 1953).

Homemakers Use of and Opinions About Eggs (1960) was the resulting publication of a survey made in November and December of 1958. This study was undertaken to provide some knowledge of consumer opinions, purchasing habits, and egg use patterns. Twenty-four hundred and fifty consumers were interviewed across the United States, and although it was found consumers generally considered eggs as an essential part of a heavy breakfast, many underestimated breakfast needs of people whose daily routine was not considered physically demanding. Forty per cent of respondents did not use eggs regularly for breakfast.

Food value was mentioned by 82 per cent as the reason for including eggs in their breakfast (Homemakers Use of Eggs, 1960). Powell (1960) also found nutrition an important stated consideration. Homemakers Use of Eggs (1960) indicated this food value was attributed to protein by 40 per cent, to general nourishment by 29 per cent, to minerals by 8 per cent, and to carbohydrates by 2 per cent. Twenty-eight per cent chose eggs because they were filling.

Sixty-three per cent indicated they were interested in egg size, 43 per cent in grade, 13 per cent in price, and 25 per cent in shell color when it came to purchasing eggs. White was slightly favored over brown in shell color. One-half stated freshness was a criterion for their selection of eggs (Homemakers Use of Eggs, 1960). Among reasons for nonuse or limited use were concerns about effect of eggs on the heart or circulatory system, other physical conditions that eggs might aggrevate, and weight considerations. Younger people said "they didn't like eggs," "preparation and consumption was too time consuming," or they were considering health factors.

Consumer opinion about health value of eggs was also established in this survey (Homemakers Use of Eggs, 1960). Three per cent of consumers whose families were increasing their egg consumption attributed it to increased knowledge of egg's contribution to health. This knowledge came from newspapers, educational institutions, and doctors. Eggs were rated as more healthful than hot cereals, pancakes, toasted white bread, cold cereals, and sweet rolls or pastry. One-fifth indicated they had recently read or heard something that could alter their opinion about eggs. In addition, one-third of those recalling recent egg information said the information might make people hesitant about eating eggs. The main negative information recalled was

concerned with eggs possibly causing or aggrevating ailments of the heart or circulatory system.

Five hundred telephone interviews was the basis of a national consumer study on egg eating patterns. The survey pointed out family size was still the most important reason for using fewer eggs than 2 or 3 years ago (Egg Eating Patterns Survey, 1971).

The convenience factor was far more important as a reason for not eating eggs than was the case in the Homemakers Use of Eggs (1960) study. Reasons relating to convenience were mentioned by 57% of all household members in 1971 vs. 22% in 1958. Health considerations were just about as important in 1971 as a reason for not eating eggs as they were in 1958 (15% vs. 14%, respectively).

The expense was a less important cause for a reduction in egg purchases in 1971 than it was in 1958. The USDA study in 1960 had indicated that 7% of homemakers using fewer eggs mentioned cost as a reason. This percentage was reduced to 2½% in the 1971 survey (Egg Eating Patterns Survey, 1971).

There was a much higher proportion of respondents in the 1971 survey which, "heard or read something about eggs in relation to health"--47 per cent vs. 20 per cent in 1958 (Homemakers Use of Eggs, 1960). In addition, respondents in the 1971 survey felt what they had seen or heard would be more likely to make people hesitate about

eating eggs than was the case in the USDA survey--71% in the 1971 survey vs. 35% in 1958.

Twelve months after the Egg Eating Patterns Survey, Haug Associates, Inc. (1972), a public opinion survey firm, conducted 503 personal in-home interviews with female heads of households, with the sample being divided equally among three geographic areas: Los Angeles Marketing Area, San Francisco Bay Area, and Fresno Area. The study indicated that eggs are generally perceived as a convenient, staple, economical, and nutritious food. Virtually all respondents spontaneously cited positive factors associated with egg preparation and consumption and more than two-thirds could not think of anything they disliked. In addition, eggs were viewed as an economy food, but few agreed with the proposition that current egg prices were similar to what they were five years ago.

Approximately one-fourth of households represented in this survey (Haug Associates, Inc., 1972) had at least one person who did not eat eggs at all, or whose egg consumption was limited. Households in which a person was restricted or limited in egg consumption was generally headed by someone in the 50-64 age range. Household heads in such families were also more likely to be Caucasian than a minority race, and were more likely to be employed in a professional, managerial, or administrative occupation than in blue collar work. Among adults, doctor's advice and age

were both related to incidence of restricted or limited egg consumption. Cholesterol content of eggs was the most frequently cited explanation for adult egg consumption restriction or limitation. Conversely, among children, taste of eggs was the predominant reason for egg consumption restriction or limitation. Overall, in less than 10 per cent of the households surveyed, cholesterol was given as a reason for egg consumption restriction or limitation, and the figure for disliking the taste of eggs was comparable. According to the authors, approximately 20 per cent of respondents claimed they had recently read an article or been exposed to some formal communication about eggs and their relationship to health. Thirteen per cent said the object of what they read or had seen was to discourage egg consumption.

Egg Use Associations

The Color Research Institute reported an attempt to determine personal associations consumers made with egg use (Consumer Attitudes Towards Eggs, Chicken, and Turkey, 1958). It was found the most common group associated with egg use was children. In descending order of frequency of association were: infants, men, and women. People under thirty were more often indicated as egg users than were people over thirty. Additional associations found in the above study were: eggs were thought to be a necessary food,

protein-rich, nonfattening, economical, and a "light" food. Unfavorable egg associations were: fattening, "heavy" food, bad on the heart, uneconomical, and low in protein. The favorable associations were about ten times more prevalent than unfavorable ones.

Consumption Patterns

Several studies have indicated that about 70 per cent of egg consumption is in the form of direct table use. This was summarized by Jasper (1953) and later essentially confirmed by Anderson (1959), who drew together results of five studies.

According to the U. S. Department of Agriculture (Homemakers Use of Eggs, 1960) study, about one-half of the homemakers questioned ate eggs at meals other than breakfast. Ease of preparation was the main reason for other-than-breakfast uses. In addition, substitution of eggs for meat and the fact that consumers considered eggs a tasty source of energy also were reported as use-reasons. When eggs were used as a main dish other than for breakfast, they were usually scrambled. Forty-two per cent reported scrambling eggs for the noon meal, and 47 per cent scrambled eggs in the evening. Frying and boiling eggs were each about half as popular as scrambling. The U. S. Department of Agriculture reported 87 per cent of homemakers used eggs at least occasionally for baking.

The investigation found that 91 per cent used eggs for breakfast, 48 per cent used eggs for lunch, and 16 per cent used eggs for the evening meal. When used for cooking, eggs generally found their way into pastry. Salads and main dishes were also depicted as uses to which cooked eggs were put (Consumer Attitudes, 1958).

Two food items, eggs and toast/bread/biscuits/rolls received the identical number of mentions as the breakfast food eaten most often. During the week these two items were eaten at breakfast by 54 per cent of the household members; however, on weekends the number of individuals eating eggs increased by approximately 11 percentage points, and the toast/bread/biscuits/roll incidence decreased by one point.

Almost all respondents (95%) used eggs in the baking of cakes, cookies, or similar items. Approximately 41 per cent sometime served eggs at noon meals and 48 per cent sometime served eggs at the evening meals. Another section of the study (Haug Associates, Inc., 1972) found that 60 per cent of the respondents served eggs for breakfast three or more times per week. Thirty-two per cent served eggs for lunch, at least once per week, and 17 per cent reported serving eggs for the evening meal--when questioned specifically on method of cookery used, 89 per cent reported preparing scrambled eggs as opposed to 80 per cent for fried eggs.

Buying Patterns of Consumers

Quality and Size

Egg quality was found to be the most influential factor affecting consumer buying decisions by Jasper and Cray's (1953) Columbus survey. Price was most important, and size governed the choice 9 per cent of the time. Consumers showed some knowledge of egg grades as 70 per cent chose either AA or A eggs from pictures of the four consumer grades. Baker and Goldman (n.d., pp. 329-339) found in an earlier study that size influenced consumers more than did quality, price, or brand name. Anderson (1959), reporting on egg sizes sold, said a very wide range of sales percentages of various sizes could be attributed to various things at any particular market depending on choices available and display practices used. The percentages varied directly with space allotted to display and position in the store and inversely with the number of alternative choices available. This survey indicated some consumers had a preference for medium sized eggs, and considerable quantities could be sold at the same price as large eggs of equal quality. From material collected in sales tests in five chain stores in Salt Lake City, indications were that AA eggs would account for only two-thirds as many egg sales at a five cent premium than when a one cent premium was charged. Negative differentials for AA eggs of as much as

four cents failed to gain the complete market for AA eggs. Lack of response to negative differential apparently indicated a lack of attention to price or possible skepticism of the quality of lower priced eggs, even though they were labeled AA (Anderson, 1959).

The researchers deduced from the Haug Associates, Inc. (1972) study that in spite of many major California supermarket chains stocking only grade AA, more than 20 per cent of the respondents recalled purchasing grade A the last time they bought eggs. For either grade classification, large eggs were preferred. However, corresponding to an increase in income, a definite shift in preference for better grade and larger size eggs was noted.

Frequency of Purchase

Frequency of purchase was considered by Jasper and Cray (1953). They found that 70 per cent of consumers surveyed bought eggs weekly, and 9 per cent bought eggs more frequently. Larger families tended to buy eggs more frequently than smaller families. Purchases were about evenly divided between one and two dozen lots. However, a total of 58 per cent bought eggs in lots of two dozen or more.

Slocum and Swanson (1954) reported 1.8 dozen as the average size egg purchase for 736 households surveyed. The quantity reported as last purchased was:

One dozen	49%
Two dozen	33%
Other	18%

Purchases on Friday and Saturday accounted for 60 per cent of total purchases. Purchase lots of two to three dozen were most frequently reported by consumers in Powell's (1960) survey. Thirty-eight per cent of the 694 consumers questioned reported purchases of this size. A range from one to (but not including) five dozen accounted for all but 9 per cent of egg purchases. Results of the 1971 survey indicated that the average respondent purchased approximately 21 eggs per week. Reviewing the number of eggs purchased by age group indicated that the 31 to 50 age group purchased the highest number of eggs, 25 per week vs. 21 per week overall. The lowest number of eggs were purchased by respondents in the 51 year and over age category at 17 eggs per week (Egg Eating Patterns Survey, 1971).

The number of eggs purchased during an average week in relation to income level indicated that respondents in the $5,000 to $7,499 category purchased the most eggs, 25 eggs per week vs. 21 per week overall. The "under $5,000" income respondent purchased the fewest eggs per week, averaging approximately 17. However, Haug Associates, Inc. (1972) found that more than half the respondents, at their last purchase of eggs, bought two dozen or more.

The working wife and women with a family member who did not eat eggs due to doctor's advice managed to purchase eggs almost as frequently as other women, although those in the latter group did purchase considerably fewer eggs on the average. The number of eggs purchased increased directly with the length of time since the last purchase.

CHAPTER III

PROCEDURE

This study was based on 302 random telephone interviews in Phoenix and the surrounding areas.[1] Telephone numbers were randomly selected from the Phoenix telephone directory. Due to budget restraints, the study was limited to 302 interviews. The survey was designed to provide data in three areas of inquiry: (1) consumer rankings of eggs, meat, cheese, and fish as related to food value, ease of preparation, and nutritional value; (2) egg buying and consumption patterns of consumers; and (3) the socioeconomic positions of consumers. Data obtained in the form of consumer rankings furnished information from which inferences were made about relationships existing between actual breakfast servings of eggs and convenience breakfast foods, and consumer opinion about food value, ease of preparation, and nutritional value of these items.

Egg buying and consumption data yielded information on the number of times eggs were served for breakfast, weekly egg consumption per family, and per capita egg

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1. Interviews were conducted by a professional research interviewing service of Phoenix. Response rate to the questionnaire was not available at the time this study was published; therefore, the validity of the results are questionable.

consumption. Socioeconomic data which were developed included age, sex, educational level, family size, and ethnic group. Family income and food budget expenditures were also included. The data categories provided subsamples which were examined to discover relationships between socioeconomic characteristics and egg consumption and usage patterns.

The Questionnaire

The questionnaire used in this survey appears in Appendix C. Questions were developed to elicit consumer consumption and use patterns of eggs and to determine consumer attitudes and opinions toward shell eggs. Respondents were urged to volunteer answers without suggestions from interviewers. Space was provided in the schedule for any answers respondents might offer.

The Interview

Schedules were completed for each of 302 consumers included in the survey by telephone interviews. Interviewers did not disclose the nature of the study beyond the fact that it dealt with nutrition and eating habits. The schedule for each interview was completed by asking interviewees the listed questions and recording the responses. Interviewers were instructed not to lead respondents into expected answers provided for on the schedule.

Handling the Data

Questionnaires were audited and coded immediately after the interviews were completed. Coded answers were transferred to data processing cards and desired information was extracted from these cards using parametric and non-parametric methods. Most of the analysis was performed on the computer.

It was felt that due to the large number of variables and the limited amount of time, the most complete analysis could be obtained by using chi-square analysis. Tabular analysis showed what the actual per capita and household consumption was for various consuming groups. With the data in tabular form, consumptive trends could be found and tested for independence using the chi-square test of independence.

The chi-square test (χ^2) was used frequently. The relative number of responses which fell into various categories was of prime importance in the analysis. Since frequencies in discrete categories constituted the majority of the research, the χ^2 test was used to determine the significance of the differences among "k" (3 or more) independent groups.

The hypothesis under test was usually that the "k" groups differed with respect to some characteristic and therefore with respect to the relative frequency with which group members fell in several categories. To test this

hypothesis the number of cases from each group which fell in the various categories were counted, and compared with the proportion of cases from the other groups.

The null hypothesis, a statement that there is no difference between the observed number of responses falling into each category and the expected number, may be tested by

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{k} \frac{(Oij - Eij)^2}{Eij}$$

Where Oij = observed number of uses categorized in "ith" row of "jth" column.

Eij = number of cases expected under H_o to be categorized in "ith" row of "jth" column.

r = row.

k = column.

The values of χ^2 yielded by the above formula are distributed approximately as chi-square with degrees of freedom being (r-1)(k-1). The probability associated with the occurrence of values as large as an observed χ^2 is given in a table of critical values of chi-square. If an observed value of χ^2 is equal to or larger than that given in the critical value table for a particular level of significance and degrees of freedom, then H_o may be rejected at that level of significance.

The level of significance is a statement of limits. It divides the conditions under which the hypothesis will be

accepted from the conditions under which the hypothesis will be rejected. In this study the level of significance for all cases was .05. That is, a χ^2 value had a probability of .05 or less of chance occurrence before it could be considered significant. Significant chi-squares mentioned in Chapters IV and V appear in Appendix B.

CHAPTER IV

EGG CONSUMPTION AND USAGE PATTERNS

Per capita egg consumption in the United States has decreased from 364 eggs in 1950 to an estimated 261 eggs in 1973 (Handbook of Agricultural Charts, 1973, p. 91; Selected Statistical Series, 1966, p. 20). The major factors implicated in the declining egg usage include reduced breakfast consumption due to changing life styles, cholesterol implications in human health, and difficulties in egg preparation and clean-up (Consumer Attitudes, 1958). However, very little information is available regarding egg consumption in relation to Arizona, socioeconomic characteristics, and ethnic groups. Chapter IV reports the data obtained from the survey of 302 respondents. These data may be useful to the poultry industry with respect to merchandising and promotional efforts. Those aspects of egg consumption and usage patterns evaluated are: (1) frequency of egg use, (2) level of egg consumption, (3) egg preparation, (4) egg usage compared to two years ago, (5) last egg purchase, (6) family members who limit or do not eat eggs, and (7) breakfast eating habits of household members.

Frequency of Egg Preparation

The intent of this section is to explain the variation in frequency of egg preparation reported by 302 respondents. Ninety-nine per cent indicated they used eggs in cooking or prepared them in some form. Chi-square tests of independence were performed on contingency tables relating certain socioeconomic characteristics of respondents with frequency of egg preparation. The characteristics examined were: (1) number of household members, (2) total household income, (3) ethnic group of respondent, (4) average weekly total at-home food bill, and (5) average weekly total away-from-home food bill.

Number of Household Members

Chi-square tests of independence indicated the number of household members was significantly related to the frequency with which eggs were used by a household (Appendix B). Specifically, those households having 1-3 members used eggs more often than households having 4-9 members, if eggs were served one, two, or four days per week. However, those households having 4-9 members were more likely to use eggs daily (Table 2). This relationship may be explained if a fixed income is assumed and because of the larger family size, a lower per capita income exists, thus requiring the substitution of a lower cost nutrient source, eggs, for higher priced food items. Also, since larger families have

Table 2. Frequency of Egg Preparation in Relation to Number of Household Members[a]

Number in Household	Frequency of Preparation					
	Daily	4 days/ wk	2 days/ wk	1 day/ wk	Other	Total
1-3	73	45	30	12	11	171
4-9	74	28	17	2	7	123
Total	147	73	47	14	18	299[b]

[a]Expressed in number of families.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were eliminated from consideration in this table.

more children, and since children consume more eggs than adults, this too explains the greater frequency of egg preparation among larger families. Consideration of eggs as a meat substitute will be discussed in Chapter V.

Total Household Income

The frequency with which eggs were prepared in a household proved to be statistically independent of total household income. However, the chi-square test between these two variables revealed some noticeable trends: (1) as the income per household increased, the number of families preparing eggs also increased, and (2) the majority of families within each income category prepared eggs daily (Table 3).

Table 3. Frequency of Egg Preparation in Relation to Total Household Income[a]

Income	Frequency of Preparation					
	Daily	4 days/ wk	2 days/ wk	1 day/ wk	Other	Total
Less than $5,000	11	9	6	0	1	27
$5,000-$9,999	31	18	11	9	5	74
$10,000-$14,999	37	21	10	2	3	73
$15,000 and up	62	22	18	2	6	110
Total	141	70	45	13	15	284[b]

[a]Expressed in number of families.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Ethnic Group of Respondent

Definite differences in the frequency of egg preparation among different ethnic groups were found, even though the majority of respondents were Caucasian. That is, non-whites prepared eggs more often than did Caucasians (Table 4). Among non-whites, Mexican-Americans reported preparing eggs with greater frequency than did blacks. These data are substantiated by Table 11 (p. 34) which indicates non-whites had a higher per capita egg consumption than caucasians. However, a large majority of the

Table 4. Frequency of Egg Preparation in Relation to Ethnic Group of Respondent[a]

Ethnic Group	Frequency of Preparation						Average Frequency of Preparation
	Daily	4 days/wk	2 days/wk	1 day/wk	Other	Total	
White	133	69	47	14	18	281	5.0 days/wk
Negro	3	2	--	--	--	5	5.8 days/wk
Mexican-American	8	2	--	--	--	10	6.4 days/wk
Total	144	73	47	14	18	296[b]	

[a]Expressed in number of families.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

respondents, no matter what ethnic group, prepared eggs daily (Table 4).

Weekly At-Home and Away-From-Home Food Bills

Weekly total at-home and away-from-home food bills were subjected to chi-square tests of independence with frequency of egg preparation being the common variable. However, only weekly at-home food bills were significantly associated (Appendix B). Although the relationship between these two variables appeared erratic (Table 5) a definite relationship was present. The frequency of egg preparation was positively related with weekly at-home food bills until the $41-$50 weekly food bill category was reached, where an erratic relationship existed.

Level of Egg Consumption

The poultry industry requires information on egg consumption and use patterns prior to initiating promotional programs to increase per capita and family egg consumption. The effectiveness of such programs can be measured by comparing egg consumption levels prior to and after initiation of promotional programs. The purpose of this section is to determine the levels of per capita and family egg consumption for the sample households.

Nearly forty-six per cent of households reported 1 to 12 eggs per week (Table 6). This level of household egg consumption was somewhat different from the results of

Table 5. Frequency of Egg Preparation in Relation to Average Weekly At-Home Food Bill[a]

At-Home Food Bill	Frequency of Egg Preparation						Average Frequency of Preparation
	Daily	4 days/wk	2 days/wk	1 day/wk	Other	Total	
$1-$10	3	3	1	1	1	9	4.0 days/wk
$11-$20	13	17	10	5	3	48	4.1 days/wk
$21-$30	38	21	15	6	3	83	4.8 days/wk
$31-$40	39	18	10	1	3	71	5.4 days/wk
$41-$50	24	4	5	1	3	37	5.7 days/wk
Over $50	27	9	5	0	3	44	5.7 days/wk
Total	144	72	46	14	16	292[b]	

[a]Expressed in number of families.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 6. Weekly Egg Consumption of 302 Families

No. Eggs Used/Week	Number of Families	Percentage
0	3	1.0
1-12	138	45.8
13-24	102	33.4
Over 24	59	19.5
Total	302	100.0

Powell's (1960) survey which found, in surveying Tucson, that 46 per cent of families used between 12 and 24 eggs per week. Nearly twenty per cent of the families in this study reported using more than two dozen eggs per week. Average egg use for the individual was found to be 5.5 eggs per week (Table 7). On a yearly basis, this per capita consumption converts to 286 eggs. This compares with a USDA estimate of 261 eggs per individual for 1973 (Handbook of Agricultural Charts, 1973). Eggs used in prepared mixes and other eggs consumed which were not purchased directly by consumers as shell eggs are excluded from Powell's, the USDA's, and this study's figures. Even though shell eggs were at their highest price since 1970 when the present study was conducted, consumers studied still consumed more eggs than the USDA estimate. However, the number of eggs

Table 7. Weekly Egg Consumption of Respondents

Weekly Egg Consumption of Individual	Number of Persons	Percentage
0	3	1.0
1-3	68	22.5
4-6	147	48.8
7-9	49	16.4
10-12	25	8.3
13-15	6	2.0
Over 15	.3	1.0
Total	302	100.0
$\overline{X} = 5.52$		

reported in this study as being used may have been affected by season, summer, 1973; egg consumption over this period is not necessarily representative of the average yearly egg consumption.

Nearly fifty per cent of the 302 respondents reported a per capita egg consumption between 4 to 6 eggs per week. Only three per cent reported consuming more than 12 eggs on a weekly basis.

Chi-square tests of independence were used on eight socioeconomic characteristics of respondents in an attempt to isolate some of the important reasons for variation in

egg consumption. The eight socioeconomic characteristics were: (1) age of respondent, (2) total household income, (3) educational level of respondent, (4) ethnic group of respondent, (5) total number of individuals per household, (6) total at-home food bill, (7) total away-from-home food bill, and (8) occupation of household head. Data were developed in two forms for interpretation. Those forms were: (1) average weekly egg consumption per household, and (2) per capita weekly egg consumption.

Age of Respondent

Despite a small decrease in household egg consumption in the 50 year old and over category, egg consumption increased with age of respondent (Table 8). In fact, age proved to be significant at the .05 level when used as the common variable against weekly egg consumption in a chi-square test of independence (Appendix B). Household egg consumption was greatest when the respondent was in the 21-49 age category. This no doubt reflected larger family size because per capita egg consumption was smallest in this category. Per capita egg consumption increased considerably in the 50 year old and over categories; such a substantial increase (Table 8), is worthy of note because it quite likely reflects a health or nutritional need by older individuals. However, since the per capita consumption was derived by dividing household consumption by number of household

Table 8. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Age of Respondent

Age	Household Consumption	Per Capita Consumption	Number of Respondents
Under 20 yrs.	18.0	6.0	12
21-49 yrs.	23.4	5.4	174
50 yrs. and over	20.6	7.6	113
Not Ascertained			3
Total			302

members, the relationship between age and per capita consumption may be misleading.

Total Household Income

Chi-square tests of independence between total household income and household egg consumption proved to be non-significant at the .05 level, even though a general pattern of slightly increased household egg consumption existed with increasing income (Table 9). Household egg consumption increased substantially from less than $5,000 total household income up to $5,000, but varied little above $5,000. Per capita egg consumption had an inverse relationship with income, with per capita egg consumption being largest in households having a total income of less than $5,000. With higher household egg consumption and

Table 9. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Total Household Income

Income	Household Consumption	Per Capita Consumption	Number of Respondents
Less than $5,000	17.8	7.9	29
$5,000-$9,999	20.5	6.7	74
$10,000-$14,999	22.2	6.2	73
$15,000 and up	21.3	5.2	111
Not Ascertained			15
Total			302

lower per capita consumption trends existing as income increased, it is conceivable that as income increased consumption of eggs by children stabilized or even increased, while consumption of eggs by adults declined.

If adults in higher income brackets do consume fewer eggs, they do despite favorable attitudes toward eggs (Table 50, p. 86). It is imaginable that eggs do not fit the life style of higher income adults even though they indicated eggs are a nutritious food, and that they are as good for adults as for children.

Educational Level of Respondent

Education provided negative relationships with both household and per capita egg consumption (Table 10).

Table 10. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Educational Level of Respondent

Educational Level	Household Consumption	Per Capita Consumption	Number of Respondents
Some high school or less	22.7	6.9	59
High school graduate/some college	20.8	6.0	178
College graduate	19.1	5.0	60
Not Ascertained			5
Total			302

Although there was a definite decrease in household and per capita egg consumption as the educational level increased, a chi-square test indicated non-significance between the two variables at the .05 level.

It is generally considered that education and income are highly correlated, and each of the two variables showed a negative relationship with per capita egg consumption. In addition, since income and education were high associated, and since eggs were considered a meat substitute (Table 16, p. 41) with eggs being less expensive, this could explain the decreased per capita and household egg consumptions at higher income and educational levels. That is, at higher income and educational levels there were

larger food budgets which allowed for the purchase of more meat as a protein source instead of eggs.

Ethnic Group of Respondent

Household and per capita egg consumption was highly dependent upon the ethnic group of the respondent (Appendix B). Non-whites consumed more eggs than whites on both a household and per capita basis (Table 11). Among non-whites, black families consumed the largest number of eggs with Mexican-American families being second. However, since the non-white categories had a low sample size these data may not be representative of the population.

Table 11. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Ethnic Group of Respondent

Race	Household Consumption	Per Capita Consumption	Number of Respondents
White	20.2	5.9	282
Non-White			
Negro	31.2	8.7	5
Mexican-American	30.6	5.8	12
Other			3
Total			302

The higher household and per capita egg consumption rates for non-whites could be the result of lower food budgets caused by lower income. If this were true, this would substantiate the idea expressed in the previous section. That is, since income had an inverse relationship with per capita egg consumption, and since Arizona census reports show non-whites generally have a lower income (Edmond, 1971), it would follow that non-whites have lower food budgets, causing substitution of eggs for meat more frequently because eggs are less expensive. Specifically, protein obtained from eggs costs approximately $4.39 per pound while protein from lean hamburger costs $4.78 per pound. The cost of protein from regular hamburger and T-Bone steak is $4.97 and $14.29 per pound respectively (Watt and Merrill, 1963). These figures are based on the following retail prices:

Large eggs = 79¢ per dozen

Lean Hamburger = 99¢ per pound

Regular Hamburger = 89¢ per pound

T-Bone Steak = $2.10 per pound

In addition, since non-white families are usually larger, and since children consume more eggs than adults, this too explains the higher household and per capita level of egg consumption of non-white families (Consumer Attitudes, 1958).

Family Size

Due to food needs, it was expected household egg consumption would increase with an increase in family size. In fact, when family size was compared as the common variable against household egg consumption in a chi-square test of independence, it was significant at the .05 level (Appendix B). According to Table 12, a trend also existed between per capita egg consumption and family size; however, it was not significant and was an inverse relationship.

Table 12. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Total Number of Family Members

Number in Family	Household Consumption	Per Capita Consumption	Number of Respondents
1-2	17.7	9.8	116
3-4	20.6	5.8	111
5-6	24.9	4.6	54
7 and more	29.0	3.7	18
Total			299[a]

[a]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Weekly Food Bill At-Home

Household egg consumption increased with at-home food bill (Appendix B). There was, however, a small decline in household egg consumption when the above $50 per week food bill category was reached. Per capita egg consumption showed an inverse relationship with the at-home food bill (Table 13).

Table 13. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Total Food Bill At-Home

Food Bill/wk	Household Consumption	Per Capita Consumption	Number of Respondents
$1.00-$6.00	12.0	4.8	2
$7.00-$10.00	15.4	9.0	7
$11.00-$20.00	17.0	8.6	48
$21.00-$30.00	20.4	7.5	83
$31.00-$40.00	21.4	5.4	71
$41.00-$50.00	24.0	5.2	37
Over $50.00	23.7	4.6	44
Total			292[a]

[a]Total does not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Possibly the increased household egg consumption that accompanied the increased at-home food bill was the result of family size considerations, since it costs more to feed a larger family and larger families eat more eggs on a household basis (Table 12).

Weekly Food Bill Away-From-Home

Household egg consumption was associated with the away-from-home food bill (Table 14) but a chi-square test of independence showed the two were independent. It is interesting to note there was a direct relation between the weekly food bill and household egg consumption until the $41-$50 weekly food bill category was reached, where the number of eggs consumed dropped drastically, and then at the above $50 weekly food bill category household egg consumption increased by a similar amount (Table 14). The cause of this relationship is not certain. Per capita egg consumption showed no consistent trend as the weekly away-from-home food increased.

Occupation of Household Head

Occupation of the household head was not significantly related with household egg consumption. However, these two variables did have some interesting relationships. White collar, clerical, skilled and semi-skilled workers had the highest household egg consumption, while the farmer and unemployed had the highest per capita egg consumption

Table 14. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Total Food Bill Away-From-Home

Food Bill/wk	Household Consumption	Per Capita Consumption	Number of Respondents
$1.00-$6.00	19.1	5.8	140
$7.00-$10.00	21.4	5.8	19
$11.00-$20.00	22.4	6.2	81
$21.00-$30.00	22.4	5.5	36
$31.00-$40.00	24.0	8.0	12
$41.00-$50.00	16.0	6.0	3
Over $50.00	24.0	4.8	4
Total			295[a]

[a]Total does not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

(Table 15). Some occupational categories had a low sample size and, therefore, these data may be misleading. Further, since occupation is highly related with income and education this too could cause somewhat unreliable results. Thus, Table 15 should be analyzed carefully before conclusions are drawn.

Table 15. Average Weekly Household and Per Capita Consumption of Eggs in Numbers, by Occupation of Household Head

Occupation	Household Consumption	Per Capita Consumption	Number of Respondents
Top managerial/major professional	20.7	4.8	57
Owner small business/ technical/minor administration	20.8	5.3	51
White collar/clerical	22.0	5.9	34
Skilled and semi-skilled	22.8	6.2	79
Farmer	21.8	6.6	12
Unemployed	18.2	7.6	33
Total			266[a]

[a]Total does not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Egg Preparation

Nearly three quarters of respondents (71.5%) indicated they occasionally served eggs as a main dish at noon or evening meals. Approximately forty-two per cent served eggs one or two times a week for lunch, and a similar number (43%) served them at the evening meal.

The main reason given for serving eggs at noon or evening meals was they are considered a meat and potato substitute (Table 16). Among reasons for substituting eggs for meat, the main one given was that it was a change of pace/variety (Table 17). Other important reasons were: eggs are high in protein, and they are less expensive than meat.

Table 16. Eggs as a Substitute

Food Item	Number Respondents Indicating	Per Cent Respondents Indicating
Meat	123	85.0
Cereal	4	2.8
Potatoes/Rice	8	6.6
Vegetables	3	2.1
Any protein food	2	1.4
Other everything	3	2.1

Table 17. Reasons for Using Eggs as a Substitute[a]

Reasons	Base = 145 Respondents	
	Number	Per Cent
Higher in progein	38	26.2
Less Expensive	40	27.6
Change of pace/variety	53	36.6
Forget to unfreeze meat	2	1.4
On diet	2	1.4
Easier/more convenient	18	12.4
Out of meat	12	8.3
Other	14	9.7

[a]Multiple responses possible.

Nearly eighty per cent used eggs at least once per week in baking, with the most notable uses being for cakes or cookies. Following that, in descending order of popularity, were salads, eggs in a dish (meat loaf), puddings, and pancakes and waffles (Table 18). When asked to name ways eggs were prepared most frequently, the typical respondent named scrambled first and fried second. Boiled eggs were mentioned about as frequently as fried with poached being the fourth most popular (Table 19).

Table 18. Eggs as a Cooking Ingredient[a]

Food Item	Number Indicating Total = 299[b]	Per Cent of Respondents
Cakes/cookies	227	75.2
Puddings	78	25.8
Pastries/pies	22	7.2
Egg bread/corn bread	28	9.3
Food with egg batters	15	5.0
Eggs in a dish (meat loaf)	86	28.4
Souffles	4	1.3
Salads	89	29.4
Pancakes/waffles	46	15.2
Custard	3	1.0

[a]Multiple responses possible.

[b]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Table 19. Method of Egg Preparation[a]

Method	Number of Respondents, Total = 299[b]	Per Cent of Respondents
Scrambled	198	65.6
Fried	172	56.9
Boiled	148	48.9
Egg salad/spread	1	0.3
Omelet	23	7.5
Deviled	17	5.6
Poached	74	24.6
Other/baked or raw	11	3.7
No response	1	0.3

[a]Multiple responses possible.

[b]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Reported Changes in Number of Eggs Used

Fifty per cent of respondents indicated they were using about the same number of eggs per week as two years ago. When a change was reported, it was more often in the direction of an increase; 26.4 per cent revealed using more eggs as opposed to 23.4 per cent indicating they used less. As expected, it was the younger homemaker and those with larger families who indicated they had increased the number of eggs used.

The main reasons cited for increases were changes in family composition; the family is larger, married now, or the children being older eat more (Table 20). The most frequent reason given for using less eggs was because they were high in cholesterol, and the second most frequent answer was "Don't bake as often" (Table 21).

Last Egg Purchase

More than half the respondents, at their last egg purchase, bought two dozen or more eggs (Table 22). The group of heavy egg users[2] did not appear to buy eggs in larger quantities than others, possibly because of the accessibility of eggs at the supermarket.

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2. Heavy users are defined as those respondent-households in which eggs were prepared or used as cooking ingredients daily. Also, eggs were mentioned as being prepared as substitutes for other food items, and a minimum of three of the ten egg-containing dishes (Q-6A in Appendix C) were mentioned as being served.

Table 20. Reasons Reported for Using More Eggs than Two Years Ago[a]

Reason	Total: N = 79
Larger family	69.0%
Children older/eat more	31.0%
Supposed to eat high protein foods	3.0%
Convenient	27.0%
Bake more often/bake more	6.0%
Married now	1.0%
Inexpensive	2.0%
Part of diet	13.0%
Other/no response	7.0%

[a]Multiple responses possible.

Table 21. Reasons Reported for Using Less Eggs than Two Years Ago[a]

Reason	Total: N = 70
High in cholesterol	92.0%
High blood pressure	4.0%
On weight reduction diet	4.0%
Family smaller	22.0%
Do not entertain as much	1.0%
Too high priced	8.0%
Don't bake as often/bake less	11.0%
Other/not ascertained	2.0%

[a]Multiple responses possible.

Table 22. Number of Eggs Bought at Last Egg Purchase

Number of Eggs Bought	Number of Respondents	Per Cent
Fewer than 12	4	1.0
12	134	45.0
13 to 24	--	--
24	102	34.3
More than 24	59	19.7
Total	299[a]	100.0

[a]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Furthermore, the working wife managed to purchase eggs almost as frequently as other women, although those in the latter group did purchase fewer eggs on the average. The cumulative figures in Table 23 show over half of all households made at least one egg purchase within a six-day period, and in a two-week period, the share buying eggs approached 100%.

Table 23. Time Elapsed Since Last Egg Purchase

Number of Days	Per Cent Indicating Number of Respondents = 299[a]	Cumulative Per Cent
1 day or less	9.3	9.3
2 days ago	9.6	18.9
3 days ago	11.6	30.5
4 days ago	14.2	44.7
5-6 days ago	18.9	63.6
7-12 days ago	22.5	86.1
13 or more days ago	9.6	95.7
Not ascertained	2.6	98.3
Other	1.7	100.0

[a]Number of respondents does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

The average respondent purchased approximately 21 eggs per week, using thirteen at breakfast and other meals, and eight for baking and other uses.

Approximately 40% indicated that in choosing size and grade of eggs either the idea of true economy in use of eggs or price-per-dozen difference between sizes and grade came into play most frequently (Tables 24 and 25). Although 87 per cent said they knew the grade of eggs they bought, it was evident from answers to other questions that fewer than that knew federal and state grades purchased. Some confused grade with size, and some used non-standardized terms as "best" and "top" to describe the grade of eggs they bought. Eighty-seven per cent usually bought AA or A grade eggs. Grade B eggs were mentioned by only one household (Table 26). It was also ascertained that 77 per cent bought large or medium size eggs. It should be noted that family food habits and appetites were implied reasons for either large or medium size egg purchases. About one-fifth indicated that although they had a size and/or grade preference, the purchase was what the supplier had. The variance in frequency of egg purchases and size and grade of eggs bought was evaluated using chi-square analysis on various socio-economic characteristics of respondents. Those socio-economic characteristics were:

1. For frequency of egg purchase:
    a. Occupation of household head.

Table 24. Reasons Reported for Buying Particular Grade of Eggs

Reason Reported	Total N = 299[a]	Per Cent
Better quality	113	37.9
Prefer this grade	34	11.4
Less expensive	18	6.0
Just picked up one	50	16.8
Larger	3	1.0
Recipes call for this grade	2	0.7
Other/fresher, on special, only carries 1 grade	60	19.8
Don't remember	19	6.4

[a]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Table 25. Reasons Reported for Buying Particular Size of Eggs

Reason Reported	Total N = 299[a]	Per Cent
More for your money/best buy/ cheaper	125	41.9
Just picked up that size	15	5.0
Been buying that size	56	18.8
Recipes call for that size	17	5.7
In store advertising	1	0.4
No particular reason	8	2.7
Other	73	24.2
Don't remember	4	1.3

[a]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

Table 26. Size and Grade of Eggs Reported Purchased

	Number	Per Cent
Size:		
Small	3	1.0
Medium	41	14.2
Large	190	63.2
X-large	48	16.2
Jumbo	12	3.6
Not ascertained	5	1.8
Total	299[a]	100.0
Grade:		
Grade A	98	32.8
Grade AA	163	54.3
Grade B	1	0.3
Not ascertained	37	12.6
Total	299[a]	100.0

[a]Total does not equal 302 due to the fact that 3 respondents did not use eggs and were therefore eliminated from consideration in this table.

b. Occupation of respondent.

c. Income of household.

d. Educational level of respondent.

2. For grade and size of eggs bought:

a. Total income of household.

b. Educational level of respondent.

Frequency of Egg Purchase

According to Tables 27-30, no consistent relationship existed between any of the four variables and the frequency with which eggs were purchased. Apparently the frequency with which eggs were purchased was dependent upon factors not analyzed.

Grade and Size of Eggs Bought

Income yielded some interesting trends even though it was not significant when subjected to a chi-square test of independence with the grade and size of eggs bought. As Table 31 indicates, most households (65.7%) purchased large eggs, and the proportion buying large, X-large, and jumbo eggs increased with income. This increase also existed within income categories until the large egg category was reached; then the number of households buying x-large and jumbo started declining. The grade of eggs bought proved not to be significantly related with total household income. According to Table 32, a higher proportion of households bought grade AA eggs as income increased. When the size and

Table 27. Frequency of Egg Purchases in Relation to Occupation of Household Head[a]

Occupation	Frequency of Purchase					
	Less than 3 days ago	3-4 days ago	5-6 days ago	7-12 days ago	13 or more days ago	Total
Top managerial	28	32	16	19	9	104
White collar/clerical/ skilled/semi-skilled	16	30	25	29	9	109
Farmer/unskilled	1	3	4	2	1	11
Unemployed	7	7	4	11	4	33
Total	52	72	49	61	23	257[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 28. Frequency of Egg Purchases in Relation to Occupation of Respondent[a]

Occupation	Frequency of Purchase					
	Less than 3 days ago	3-4 days ago	5-6 days ago	7-12 days ago	13 or more days ago	Total
Top managerial	2	5	6	6	2	21
White collar/clerical/ skilled/semi-skilled	4	7	6	11	6	34
Farmer/unskilled	50	61	42	50	19	222
Unemployed	0	2	3	1	2	8
Total	56	75	57	68	29	285[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 29. Frequency of Egg Purchases in Relation to Total Household Income[a]

Income	Frequency of Purchase					
	Less than 3 days ago	3-4 days ago	5-6 days ago	7-12 days ago	13 or more days ago	Total
Less than $5,000	5	7	4	7	3	26
$5,000-$9,999	14	15	19	19	6	73
$10,000-$14,999	13	17	13	20	8	71
$15,000 and up	24	38	17	18	8	105
Total	56	77	53	64	25	275[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 30. Frequency of Egg Purchases in Relation to Educational Level of Respondent[a]

Educational Level	Frequency of Purchase					
	Less than 3 days ago	3-4 days ago	5-6 days ago	7-12 days ago	13 or more days ago	Total
Some high school, or less	9	11	15	17	4	56
High school graduate/ some college	33	47	29	39	22	170
College graduate	14	17	13	11	3	58
Total	56	75	57	67	29	284[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore elimina ed from consideration in this table.

Table 31. Size of Eggs Purchased in Relation to Total Household Income[a]

Income	Size					
	Small	Medium	Large	X-Large	Jumbo	Total
Less than $5,000	0	4	19	4	0	27
$5,000-$9,999	0	11	52	9	2	74
$10,000-$14,999	2	6	53	12	0	73
$15,000 and up	1	17	62	21	7	108
Total	3	38	186	46	9	282[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 32. Grade of Eggs Purchased in Relation to Total Household Income[a]

Income	Grade				
	A	AA	B	Other	Total
Less than $5,000	11	12	0	0	23
$5,000-$9,999	18	47	0	0	65
$10,000-$14,999	25	42	0	1	68
$15,000 and up	41	55	1	1	98
Total	95	156	1	2	254[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

grade of eggs bought were compared with educational level, it was found the relationship was independent (Tables 33-34).

Table 33. Grade of Eggs Purchased in Relation to Educational Level of Respondent[a]

Educational Level	Grade				
	A	AA	B	Other	Total
Some high school, or less	25	24	0	0	49
High school graduate/ some college	57	102	1	2	162
College graduate	16	35	0	0	51
Total	98	161	1	2	262[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Table 34. Size of Eggs Purchased in Relation to Educational Level of Respondent[a]

Educational Level	Size					
	Small	Medium	Large	X-Large	Jumbo	Total
Some high school, or less	3	12	38	7	1	58
High school graduate/some college	3	18	113	32	8	174
College graduate	0	10	38	10	2	60
Total	3	40	189	49	11	292[b]

[a]Expressed in number of households.

[b]Totals do not equal 302 due to the fact that some respondents did not respond to items in question and were therefore eliminated from consideration in this table.

Family Members who Limit or do not Eat Eggs

Table 35 indicates 13% of household members limit egg consumption and 5% did not eat eggs at all. Seventy-three per cent of those who limited egg consumption were adults, while the majority (65%) of those who did not eat eggs at all were children.

Among households in which the male head was present, it was the female head who was most inclined to limit egg consumption. It was also reported that age and doctor's advice were both directly related to the incidence of limiting egg consumption among adults (Table 36). However,

Table 35. Household Members who Limit or do not Eat Eggs at all

Household Member	Limit Total N = 139	Do not Eat Total N = 55
Respondent female	48	13
Respondent male	1	--
Husband	51	6
Wife	1	--
Daughter	15	16
Son	19	17
Father	1	--
Male roommate	2	--
Female roommate	1	--
Brother-in-law	--	2
Niece	--	1
Per cent of household members	13%	5%

Table 36. Reasons Reported for Limiting Egg Consumption

Reason Reported	Members				
	Total N = 139	Husband N = 51	Resp. Female N = 48	Other Adult N = 6	Children N = 34
High cholesterol	47.5%	68.0%	58.0%	17.0%	9.0%
Doctor's advice	10.1%	17.0%	8.0%	17.0%	3.0%
Weight reduction	4.3%	2.0%	8.0%	--	3.0%
Heart condition	5.0%	10.0%	2.0%	--	3.0%
Allergic	2.2%	2.0%	--	--	10.0%
Specific illness	2.2%	2.0%	2.0%	17.0%	--
Don't like them	15.8%	4.0%	4.0%	33.0%	53.0%
Other-too expensive	0.7%	--	2.0%	--	--
Other	15.1%	6.0%	19.0%	17.0%	24.0%

among children the categories of "don't like them" and "allergic to them" were the two most mentioned reasons for limiting and not eating eggs at all (Tables 36-37).

Table 37. Reasons Reported for not Eating Eggs at all

	Members				
Reason Reported	Total N = 53	Husband N = 6	Resp. Female N = 13	Other Adult N = 2	Children N = 34
High cholesterol	7.2%	50.0%	8.0%	--	--
Doctor's advice	1.8%	--	--	50.0%	--
Weight reduction	1.8%	--	8.0%	--	--
Allergic	5.6%	--	--	--	9.0%
Specific illness	1.8%	--	1.0%	--	--
Don't like them	70.9%	50.0%	46.0%	--	88.0%
Other	10.9%	50.0%	30.0%	50.0%	2.0%

Overall, cholesterol and taste were the two categories mentioned most often for limiting and not eating eggs at all. However, these are major factors among two exclusive groups. Cholesterol was mentioned primarily among adults, and was most frequently mentioned as influencing the adult male. On the other hand, "dislike because of taste" was most prominent as a reason for children limiting or not eating eggs at all. It is obvious that negative health

associations with eggs are of most importance in the minds of consumers who limit or do not eat eggs.

Breakfast Eating Habits

Declining per capita egg consumption has partially been attributed to changing breakfast consumption patterns among American families. Specifically, it is believed an increase in the use of convenience breakfast food products have been the major factor causing per capita egg consumption to decline in general and specifically at the breakfast meal. The purpose of this section is to analyze breakfast consumption patterns of 1035[3] individuals as a whole and in relation to various age groups.

Data from this section will aid in determining if egg promotional programs should be breakfast oriented, and, if so, to what age and sex of consumers they should be directed.

The majority of individuals eat some sort of breakfast during the week and weekend[4] (Table 38). It was also found that children eat breakfast more often than adults on weekdays as well as on weekends (Tables 39-42). In addition, the majority of those who eat breakfast during

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3. Figure obtained by adding total number of household members for each of the 302 households. Question 8 in Appendix C and Table 59 (p. 101).

4. Coffee, milk, or juice alone was considered a breakfast in this study.

Table 38. Incidence of Weekday and Weekend Breakfast Consumption[a]

	Weekdays		Weekends	
Incidence	At Home	Away	At Home	Away
Never	6.2	66.3		
Once	1.2	--		
Twice	1.0	1.4		
Three Times	1.9	0.3		
Four Times	1.2	0.5		
Five Times	60.1	3.2		
No Idea	0.2	--		
Once/2 weeks	0.1	0.3		
Never			2.5	57.8
Once			0.5	5.7
Twice			1.1	3.8
Three Times			0.7	0.3
Four Times			4.3	3.5
Five Times			0.2	0.4
Six Times			3.5	0.1
Seven Times			5.9	0.4
Eight Times			54.1	0.8
Seldom				0.1

[a]Expressed as per cent of household members.

Table 39. Incidence of Breakfast Consumption At-Home on Weekdays[a]

Incidence of Breakfast Eating	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Four to five times per week	78.8	81.4	89.4	71.4	75.0	84.6	95.8	100.0	90.7	80.4	98.3	100.0	97.9	87.2	71.6
Two to three times per week	5.1	3.5	4.4	8.6	50.0	4.8	--	--	--	10.7	--	--	--	2.1	9.9
Once per week	3.0	1.2	1.8	2.8	2.5	2.9	2.1	--	--	--	--	--	--	--	3.7
Never	13.1	13.9	4.4	17.2	17.5	7.7	2.1	--	9.3	8.9	1.7	--	2.1	10.4	14.8

[a]Expressed as per cent of household members.

Table 40. Incidence of Breakfast Consumption Away-From-Home on Weekdays[a]

Incidence of Breakfast Eating	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Four to five times per week	2.0	2.3	1.0	4.3	8.8	3.8	2.0	--	9.3	3.6	1.7	--	2.1	6.4	11.1
Two to three times per week	4.0	1.2	1.0	5.7	1.2	3.8	--	--	--	3.6	--	--	--	--	4.9
Once per week	--	2.3	1.0	1.4	5.0	2.9	--	--	--	1.8	--	--	--	--	--
Never	94.0	94.2	97.0	88.6	85.0	89.5	98.0	100.0	90.7	91.0	98.3	100.0	97.9	93.6	84.0

[a]Expressed as per cent of household members.

Table 41. Incidence of Breakfast Consumption At-Home on Weekends[a]

Incidence of Breakfast Eating	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Six to eight times per month	75.8	82.6	88.5	87.1	76.3	87.5	89.6	97.9	90.7	85.7	87.9	97.7	87.5	89.4	83.9
Four to five times per month	10.1	4.7	5.3	4.3	11.3	5.8	6.3	2.1	4.7	8.9	8.6	2.3	8.3	4.3	6.2
One to three times per month	5.1	3.5	1.8	4.3	6.3	2.9	2.1	--	2.3	3.6	3.5	--	4.2	2.1	2.5
Never	9.0	9.2	4.4	4.3	6.1	3.8	--	--	2.3	1.8	--	--	--	4.2	7.4

[a]Expressed as per cent of household members.

Table 42. Incidence of Breakfast Consumption Away-From-Home on Weekends[a]

Incidence of Breakfast Eating	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Six to eight times per month	2.0	3.5	1.0	--	2.5	--	--	--	--	--	--	--	--	4.3	7.6
Four to five times per month	6.1	3.5	4.4	5.7	11.2	4.8	4.2	2.1	4.7	5.4	8.6	2.3	6.3	4.3	3.7
One to three times per month	24.2	9.3	13.3	24.3	11.3	15.4	16.7	17.0	9.3	10.7	7.9	13.6	10.4	4.3	16.5
Never	68.7	82.7	81.3	70.0	75.0	79.8	79.1	80.9	86.0	83.9	83.5	84.1	83.3	87.1	72.2

[a]Expressed as per cent of household members.

weekdays and/or weekends did so at home. Most individuals eat breakfast at home four to five times per week and almost always on weekends.

When the respondents were asked to list what each household member usually had for breakfast during the week sixty-six per cent included eggs. In addition, the number of females that eat eggs at breakfast was higher than that of the males. Bread/toast/biscuits and cold/dry cereal were the second most mentioned weekday breakfast food items, with approximately 45 per cent of all household members eating them. Juice or fruit were the next highest mentioned items at 32 per cent (Table 43).

Weekend egg consumption at breakfast increased by approximately seven percentage points, whereas, the bread/toast/biscuits and cold/dry cereal incidence decreased by a like amount. Other items showing a significant increase for weekend use over weekday use were bacon/ham/sausage and pancakes/waffles/french toast, both up approximately 20 per cent. Food items that showed a substantial decrease on the weekend vs. weekday use were cold/dry cereal, down 21 percentage points, and juice or fruit, down 5 percentage points (Table 43).

Looking at percentage of household members eating eggs at breakfast during weekdays by age and sex reveals that eggs are most popular among adult males in the 50 year and over age group and among males in the over 15 age group.

Table 43. What is Eaten for Breakfast on Weekdays and Weekends[a]

Food	Weekdays	Weekends
	Total Number of Household Members	Total Number of Household Members
Eggs	66.5	73.2
Coffee/tea	16.6	14.6
Bread/toast/biscuits	42.5	33.7
Juice/fruit	32.1	27.6
Bacon/ham/sausage	22.1	42.5
Cold/dry cereal	44.5	23.0
Hot cereal	2.7	1.0
Pancakes/waffles/french toast	10.9	31.9
Milk/hot chocolate	9.7	10.8
Rolls/muffins/donuts	0.8	0.7
Instant breakfast	1.3	0.1
Other	9.2	6.1

[a]Expressed as per cent of household members.

In contrast, adult females in the 35-49 age category consumed more eggs than any other adult female category with 55.2 per cent indicating consumption. Furthermore, girls in the 6-10 age group consumed more eggs than any other category among teenage girls (80.5%) and more than any other age group no matter which sex (Table 44).

The popularity of egg consumption at breakfast during the weekend increases in all age categories except the girls in the 6-10 year category and the boys over 15 years of age category, which did not change. However, egg consumption became most popular among adult males in the 35-49 age group, boys 11-14 age group, and adult females less than 35 age category during weekend breakfast (Table 45).

The incidence of convenience foods eaten at breakfast during the week and weekend was too low to suggest any relationship between different age or sex categories. However, as indicated by Table 44, convenience breakfast foods were most popular among girls and boys in the over 15 age category, and among adult males in the less than 35 age group.

Table 44. What is Eaten for Breakfast on Weekdays by Various Age Groups[a]

Food	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Eggs	53.5	55.2	54.4	50.0	61.7	61.8	61.5	80.5	54.8	63.9	53.2	46.7	66.7	70.6	62.2
Coffee/tea	20.8	29.9	31.6	15.3	28.4	38.2	--	--	--	1.4	--	--	--	7.4	24.4
Bread/toast/ biscuits	42.6	40.2	57.0	33.3	30.9	52.9	38.5	34.1	28.6	41.7	29.0	4.0	37.3	50.0	48.9
Juice/fruit	29.7	34.5	42.1	16.7	29.6	37.3	21.2	41.5	21.4	34.7	22.6	31.1	52.9	32.4	40.0
Bacon/ham/ sausage/ steak	19.8	16.1	17.5	20.8	32.1	20.6	17.3	41.5	19.0	23.6	11.3	13.3	25.5	22.1	20.0
Cold dry cereal	36.6	33.3	28.9	36.1	34.6	32.4	55.8	78.0	78.6	43.1	58.1	73.3	64.7	36.8	51.1
Pancakes/ waffles/ french toast	8.9	6.9	5.3	6.9	12.3	4.9	21.2	12.2	14.3	12.5	4.8	17.8	17.6	14.7	4.5
Milk/hot chocolate	7.9	2.3	4.4	4.2	1.2	4.9	19.2	12.2	4.8	15.3	24.2	6.7	15.7	2.9	11.1
Rolls/muffins donuts	1.0	3.4	2.6	--	1.2	2.9	3.8	--	9.5	2.8	--	--	--	1.5	--
Instant breakfast	1.0	1.1	--	2.8	2.5	1.0	--	--	2.4	2.8	1.6	--	--	2.9	--
Hot cereal	3.0	2.3	3.5	1.4	--	3.9	7.7	--	2.4	--	4.8	2.2	--	2.9	6.7
Other	16.8	18.4	1.1	12.5	17.3	12.7	3.8	2.4	2.4	19.4	6.5	--	--	10.3	15.6

[a]Expressed as per cent of household members.

Table 45. What is Eaten for Breakfast on Weekends by Various Age Groups[a]

Food	Respondent			Husband			Girls				Boys				
	Age <35 N=99	Age 35-49 N=86	Age 50+ N=113	Age <35 N=70	Age 35-49 N=80	Age 50+ N=104	Age 1-5 N=48	Age 6-10 N=47	Age 11-14 N=43	Age 15-19 N=56	Age 1-5 N=58	Age 6-10 N=44	Age 11-14 N=48	Age 15-19 N=47	Other Adults
Eggs	78.2	66.7	64.9	77.8	79.0	69.6	78.8	80.5	69.0	79.2	69.4	66.7	74.5	70.6	77.8
Coffee/tea	12.9	27.6	28.1	15.3	22.2	30.4	--	--	--	2.8	--	2.2	--	4.4	20.0
Bread/toast/ biscuits	29.7	37.9	47.4	26.4	30.9	50.0	15.4	29.3	38.1	50.0	24.2	20.0	23.5	44.1	40.0
Juice/fruit	18.8	27.6	35.1	12.5	25.9	30.4	17.3	21.9	31.0	34.7	16.1	20.0	35.3	20.6	22.2
Bacon/ham/ sausage/ steak	47.5	37.9	33.3	50.0	46.9	46.1	30.8	68.3	38.3	37.5	32.3	37.8	39.2	47.1	48.9
Cold/dry cereal	15.8	14.9	17.5	9.7	18.5	20.6	25.0	24.4	23.8	19.4	24.2	31.1	33.3	22.1	26.7
Pancakes/ waffles/ french toast	41.6	25.3	15.8	37.5	34.6	18.6	34.6	46.3	40.5	30.6	25.8	40.0	35.3	29.4	37.8
Milk/hot chocolate	6.9	--	4.4	9.7	1.2	4.9	15.4	24.4	14.3	12.5	16.1	13.3	5.9	7.4	6.7
Rolls/ muffins donuts	1.0	--	6.1	2.8	1.2	4.9	3.8	--	7.1	--	--	2.2	--	7.4	--
Instant breakfast	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--	--
Hot cereal	--	1.1	1.8	--	--	1.9	7.7	--	2.4	--	1.6	2.2	--	--	--
Other	11.9	10.3	6.1	8.3	9.9	9.8	3.8	12.2	4.8	12.5	9.7	6.7	--	7.4	15.6

[a]Expressed as per cent of household members.

CHAPTER V

CONSUMER IMAGE OF EGGS

The purpose of Chapter IV was to examine household and per capita egg consumption and usage patterns in terms of socioeconomic characteristics, in order that the poultry industry may aim future shell egg merchandising and promotional efforts at consumers who consume eggs less frequently. However, the industry should not begin promotional efforts to alter consumer use patterns until they appraise consumer attitudes toward eggs as a separate entity, as well as in relation to foods that are similar in nutrition and perishability.

This chapter deals with consumer attitudes toward eggs and evaluates the effectiveness egg advertisements have had on altering egg use patterns. Advertisements are analyzed in terms of socioeconomic characteristics as well as the style factors which are most likely to alter consumer egg use patterns. The chapter provides insights into product development and other activities associated with the processing and sale of shell eggs.

Chapter V is divided into six sections in order that the variance in consumer attitudes toward eggs may be reported. Aspects of consumer attitudes that will be

evaluated are: (1) consumer likes and dislikes of preparing and serving eggs, (2) consumer attitudes toward eggs related to selected foods, (3) consumer attitudes toward eggs related to convenience breakfast foods, (4) consumer agreement to statements about eggs, (5) consumer attitudes toward the value of selected foods, and (6) consumer reaction to egg advertisements.

Likes and Dislikes of Serving and Preparing Eggs

Nutrition was the most frequent response (54%) given as a reason for liking eggs. The second most frequent response, reported in Table 46, was that eggs taste good. While approximately three per cent indicated there was nothing they liked about eggs, nearly 70 per cent could not articulate any dislike. The most frequent dislike expressed by those answering was that eggs are high in cholesterol. This occurred only 12 per cent of the time.

Numerous like (taste good, fast/quick, inexpensive, high in protein, nutritious, prepare variety of ways) and dislike (high in cholesterol, stick to pan, greasy/messy, dislike taste, dislike smell) response categories were subjected to chi-square tests of independence with respondent's age, educational level, ethnic group, and total household income to determine if any significant relationship existed between them. No significant patterns or relationships were found. However, it was obvious that

Table 46. Likes and Dislikes of Preparing and Serving Eggs[a]

Attitude	Per Cent of Respondents
Likes:	
Taste Good	46.0
Prepare variety of ways	17.9
Fast/Quick	15.8
Inexpensive	8.6
High in Protein	22.9
Nutritious/Good for you	31.4
Nothing liked	3.3
Convenient	7.7
Dislikes:	
Nothing Disliked	66.9
High in Cholesterol	12.6
Stick to Pan	1.3
Greasy/Messy	2.6
Dislike Smell	1.0
Yolks Break too Easy	1.3
Dislike Taste	6.0
Other	10.0

[a]Multiple responses possible.

consumers attached positive health characteristics to eggs despite accusations by various news media that eggs and heart disease may be correlated.

Consumer Attitudes of Eggs Related to Selected Foods

Respondents were questioned to obtain attitudes toward eggs in relation to foods similar in nutrition and perishability. In answering, the respondent was instructed to rank four foods (meat, eggs, cheese, and fish) from 1 through 4 according to how well each of six statements described the four foods (Table 47). A food receiving a number one ranking for a particular statement indicated the respondent felt that food was better described by the statement than were the remaining three food categories. A number two ranking implied the statement described another food category better, and so forth.

Eggs were reported as being more economical relative to meat, cheese, and fish and were more likely to be kept on hand. Eggs were perceived as a nutritious and convenient food; however, meat was ranked number one the majority of the time concerning nutrition and cheese was given the number one ranking most often concerning convenience (Table 47). Further, these data show that eggs possess no strongly negative attributes as related to the six statements. In fact, eggs received the number four ranking less often for each of the six statements than any other food category.

Table 47. Phrase Descriptions Relating to Four Foods[a]

Phrase	First Mention				Second Mention				Third Mention				Fourth Mention				No Mention
	Meat	Eggs	Cheese	Fish	Meat	Eggs	Cheese	Fish	Meat	Eggs	Cheese	Fish	Meat	Eggs	Cheese	Fish	
A very convenient food	13.9	27.8	57.0	1.7	11.9	57.0	23.2	7.6	47.4	11.9	13.2	27.2	26.8	3.3	6.3	63.2	0.9
A most nutritious food	42.1	26.8	10.9	19.9	21.9	29.5	23.2	24.8	19.9	33.1	26.5	18.5	15.6	9.9	38.7	36.1	2.8
An economy food	4.3	60.6	10.6	23.8	5.6	30.5	38.1	24.8	15.2	7.3	39.4	36.8	73.8	1.0	10.9	13.6	3.7
A food I always keep on hand	22.5	57.6	17.5	1.0	27.2	29.8	38.7	3.0	41.4	10.3	34.8	12.3	7.6	1.0	7.6	82.8	4.9
Something I like to serve	74.8	8.0	8.0	6.0	9.3	36.4	33.1	19.9	9.6	40.4	32.1	16.6	5.0	12.9	24.5	56.3	5.2
Something to prepare in numerous ways	50.7	39.4	8.9	1.3	23.2	37.4	31.1	8.3	21.5	18.9	39.7	19.5	4.6	4.3	20.2	70.9	

[a] Expressed as per cent of household members.

Chi-square tests of independence were applied to the response rankings of each food category for each of the six statements with respondent's age, educational level, and total household income. Tests showed that only statements: a very convenient food, a most nutritious food, and an economy food were significant at the .05 level, and then not all socioeconomic characteristics were significant for each statement (Table 48). The statement "a very convenient food" and income proved to be significantly dependent when it came to the ranking of eggs; that is, as income increased the number ranking eggs number one increased (Appendix B). Although age and educational level were not significantly related with the above statement, they did have a positive relationship as did income.

The rankings which eggs received for the statements "a most nutritious food" and "an economy food" were only significantly related with educational level. In both instances, as educational level increased, the number of respondents that ranked eggs number one increased. None of the socioeconomic characteristics were significantly related with the ranking which eggs received for the statement "a food I always keep on hand." Therefore, since 58 per cent gave eggs a number one ranking for this statement, it is apparent eggs are considered indispensable no matter what the social status of a consumer.

Table 48. Phrase Descriptions Relating to Four Foods in Relation to Socioeconomic Characteristics

Food	Phrase		
	A Very Convenient Food	A Most Nutritious Food	An Economy Food
Meat	Significant with: 1. Education 2. Income 3. Age	Significant with: 1. Education	
Eggs	Significant with: 1. Income	Significant with: 1. Education	Significant with: 1. Education
Cheese	Significant with: 1. Education 2. Income 3. Age		
Fish		Significant with: 1. Income 2. Education	

Eggs vs. Convenience Breakfast Foods

Convenience breakfast food products have been implicated as the major factor causing per capita egg consumption to decline in general and specifically at the breakfast meal (Consumer Attitudes, 1958). The intent of this section is to evaluate consumer attitudes toward eggs in relation to convenience breakfast food products. However, before responding to the question, the respondent was informed that convenience breakfast foods included pop tarts, instant breakfast, special morning, and breakfast squares, etc., and did not include cereal or toast.

Nearly three-quarters of the respondents reported that eggs have a higher nutrient value than do convenience breakfast food products; and over half indicated eggs are more healthful in every aspect (Table 49). Approximately 70 per cent indicated convenience breakfast foods are easier to prepare and take less time to prepare; however, the nutritional aspect was apparently looked upon as being more important. Only 1.3 per cent of total household members ever used convenience foods during weekdays and only 1% used them on weekends (Table 48). Therefore, according to these data, convenience breakfast foods are not the major factor causing per capita egg consumption to decline, at least in the Phoenix area.

The eight statements in Table 49 were subjected to chi-square tests of independence with respondent's age,

Table 49. Comparison of Eggs and Convenience Breakfast Foods[a]

Phrase	Eggs	Convenience Breakfast	No Difference	Don't Know	No Response
Higher in Nutritional Value	73.5	8.9	5.4	11.9	0.3
Higher in Vitamin Content	57.3	18.9	3.0	20.9	
Higher in Calorie Level	24.2	54.0	3.0	18.9	
Higher in Protein Content	83.4	3.6	2.6	10.3	
More Time Saving	18.2	69.2	7.9	4.6	
Easier to Prepare	17.9	71.9	6.6	3.6	
A Better Buy	77.5	5.6	4.0	12.9	
Better for You	84.1	5.0	4.3	6.6	

[a]Expressed as per cent of respondents.

educational level, ethnic group, and total household income. Only income and age showed any significant relationship with any of the eight statements comparing eggs and convenience breakfast foods. Income was significant at the .05 level with the following statements: higher in vitamin content, higher in calorie level, and more time savings (Appendix B). Specifically, as income increased a higher proportion reported that the phrase "higher in vitamin content" described eggs rather than convenience breakfast foods. However, as income increased so did the number indicating that the phrases "higher in calorie level" and "more time saving" described convenience breakfast foods rather than eggs.

Respondent's age proved to be significantly related with all of the statements concerning shell eggs and convenience breakfast foods. In the case of statements: higher in nutritional value, higher in vitamin content, higher protein content, a better buy, and better for you, age was positively related. However, age was negatively related to the statements: higher in calorie level, more time saving, and easier to prepare (Appendix B). Therefore, shell egg promotional efforts should be aimed at the younger homemaker with emphasis on the nutritional and economical aspects of eggs.

Agreement to Statements About Eggs

Households responded to the eight point agreement scale, question 13 in Appendix C, concerning use of eggs in the following manner: 87 per cent reported that eggs were not strictly a breakfast food, 88 per cent viewed eggs as not being for special occasions, and almost all agreed that eggs could be used for a quick meal (Table 50). Concerning the usefulness of eggs, nearly all households indicated eggs were very nutritious and nearly 80 per cent said eggs were one of the few real economy foods available. In addition, 85 per cent indicated that in a health sense eggs are as good for adults as for children and a like amount viewed eggs as one of nature's almost perfect foods. Eggs were also viewed as a food that does not cost the same as five years ago.

The following socioeconomic characteristics: total household income, age, and educational level of respondent as well as the agreeability categories were aggregated as shown in Tables 51 and 52. Chi-square tests of independence were performed. These chi-square tests indicated that of all the statements concerning household's attitudes toward eggs, only the statement "eggs are strictly a breakfast food" showed significant relationship toward total household income and educational level (Tables 51 and 52). Respondent's age was independent with all of the statements. Therefore, since eggs were viewed as a versatile food by

Table 50. Household Attitudes Regarding the Use and Usefulness of Eggs[a]

Statement	Agree	Strongly Agree	Disagree	Strongly Disagree	No Opinion
Use:					
Eggs are strictly a breakfast food	9.3	3.6	44.7	42.4	--
Eggs are for special occasions	9.3	2.3	48.0	40.4	--
Eggs are great for a quick meal	56.6	41.4	2.0	--	--
Usefulness:					
Eggs are very nutritious	54.3	45.0	0.3	--	0.3
Eggs are one of the few real economy foods available today	55.3	23.5	16.6	2.6	2.0
In a health sense, eggs are as good for adults as for children	56.0	29.1	10.9	1.3	2.6
Eggs are one of nature's almost perfect foods	60.6	23.3	9.3	1.0	6.0
Eggs are one food item that actually costs about the same as five years ago	29.1	4.6	40.4	18.9	7.0

[a]Expressed as per cent of respondents.

Table 51. Response to Statement "Eggs are Strictly a Breakfast Food" in Relation to Total Household Income[a]

Income Level	Some Degree of Agreeability	Some Degree of Disagreeability
Less than $5,000	20.7	79.3
$5,000-$9,999	16.2	83.8
$10,000-$14,999	13.7	86.3
$15,000 and over	5.4	94.6

[a]Expressed as per cent of respondents.

Table 52. Response to Statement "Eggs are Strictly a Breakfast Food" in Relation to Educational Level of Respondent[a]

Educational Level	Some Degree of Agreeability	Some Degree of Disagreeability
Some high school or less	28.8	71.2
High school graduate/some college	9.0	91.0
College graduate	10.0	92.0

[a]Expressed as per cent of respondents.

all age, educational, and income categories, the versatility of eggs should not be part of promotional efforts.

Money's Worth of Four Foods

The majority of respondents (84.1%), when asked about eggs, indicated they at least received value for their money and nearly 7 per cent reported they received more than their money's worth (Table 53). More than sixty per cent reported they at least received value for their money with the purchase of cheese; however, nearly 70 per cent of the sample households indicated they did not receive their money's worth when purchasing beef. This response to beef was to be expected since beef prices had increased significantly prior to the interviews.

Table 53. Money's Worth of Four Foods[a]

Food	More than Your Money's Worth	Money's Worth	Not Getting Your Money's Worth	No Opinion
Fish	3.3	58.3	26.8	11.6
Beef	2.0	26.8	69.9	1.3
Eggs	6.6	77.5	14.9	1.0
Cheese	3.0	60.3	36.4	0.3
Pork	1.0	32.8	51.0	15.2

[a]Expressed as per cent of respondents.

Chi-square tests of independence were performed on the respondents' attitudes and the following socioeconomic characteristics of sample households: age and educational level of respondent, and total household income. The results indicated these socioeconomic characteristics were not related to the attitudes of households.

Reaction to Egg Advertisements

Starting approximately two months prior to and ending three months after this study egg advertisements were started on T.V., radio, and in newspapers in the Phoenix area dealing with various aspects of egg use. It is the intent of this section to disclose what the consumer thought of these advertisements and what, if any, effect they had on consumption and/or use of eggs.

Only 72 of the 302 households questioned in this study indicated they had read or heard an egg advertisement in the previous two months. However, of those who had heard or read an egg advertisement the majority (86%) indicated they liked it. When the respondents were asked what they liked about the advertisements, the most frequent response was it was informative, with the second popular answer being it was "cute." Other responses were that the advertisements were simple and direct, and that they were cleverly done. Reasons expressed for not liking the egg advertisements, in descending order of occurrence were: it

was just a commercial, childish, and it was non-educational. All 72 respondents indicated the advertisements had no effect whatsoever on their use or consumption of eggs.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The poultry industry in the United States has been faced with declining per capita consumption of shell eggs. This trend has, in part, been caused by changes in consumer tastes and preferences, cholesterol implications in human health, and difficulties in the preparation and clean-up of eggs. It is not known if these national trends adequately reflect changes in shell egg consumption in Arizona since no recent studies have been completed in Arizona other than the one reported herein.

In view of the above problem, the purposes of this study were:

1. To examine consumption and use patterns for shell eggs.
2. To analyze attitudes of consumers toward shell eggs.
3. To consider reasons for shell egg consumption and attitude variation by socioeconomic characteristics.

Two hundred ninety-nine households provided consumption and use data on eggs, and 302 contributed data on attitudes. Most households consumed 1 to 12 eggs per week (Table 5). Per capita egg consumption was 5.5 weekly or 286 eggs per year. This compares with a USDA of 261 for 1973.

Eight socioeconomic characteristics of respondents were analyzed in order that consumption and use patterns of eggs could be evaluated. Those eight variables were:

1. Age of respondent.
2. Total household income.
3. Educational level of respondent.
4. Ethnic group of respondent.
5. Number of household members.
6. Total at-home food bill.
7. Total food bill away-from-home.
8. Occupation of household head.

Each of the eight variables were subjected to χ-square tests of independence with average weekly shell egg consumption per household and per capita shell egg consumption.

Average weekly egg consumption per household was positively related to age of respondent, family size, and weekly at-home food bill. A negative relationship existed between average weekly egg consumption per household and educational level of respondent. The other socioeconomic characteristics lacked definite patterns. Per capita egg consumption was independent of total household income, educational level of respondent, family size, and average weekly at-home food bill. Non-whites had the highest level of per capita egg consumption (Table 10).

Males in the 15-19 age category and females in the 6-10 age category consumed eggs more frequently than any

other age groups. Females consumed eggs more frequently than males during week days, except at the over 11 and the 35-49 age categories. Females also consumed eggs more frequently during weekends, except at the 11-14 and the 35 and over age categories. Scrambled eggs were the most popular form in which eggs were consumed with fried eggs being second.

The number of respondents reporting the receipt of physicians' advice against egg consumption because of cholesterol for a family member was negligible. Only 1.8 per cent of all household members had received such advice, and egg consumption among those individuals did not differ significantly from consumption among individuals who had not received such advice.

Consumer attitudes toward eggs as a separate entity and in relation to three foods (meat, cheese, and fish) indicated eggs had a favorable image. Eggs were considered higher priced than five years ago but were a good value for the money. Attitudes toward eggs in relation to meat, cheese, and fish were related to educational level of respondent and total household income (Table 47). Further, attitudes toward eggs in relation to convenience breakfast food products was significantly related to age of respondent and total household income. That is, as income increased so did the number reporting that the phrase "higher in vitamin content" described eggs. However, as income

increased, so did the number indicating that the phrases "higher in calorie level" and "more time saving" described convenience breakfast foods.

Respondents' age was significantly related with all statements concerning shell eggs and convenience breakfast foods. Age was negatively related to statements: higher in calorie level, more time saving, and easier to prepare concerning eggs; and positively related to statements: higher in nutritional value, higher in vitamin content, higher protein content, a better buy, and better for you.

This study has several implications for shell egg producers, processors, retailers, and researchers. Within the outline of the previously stated objectives, some rather broad, general conclusions can be drawn in addition to a limited number of specific conclusions. However, as explained in footnote 1 page 16, the scope of the inferences has not been verified.

1. Consumers have favorable attitudes toward eggs.
2. Eggs were viewed as a meat substitute.
3. On the average, consumers used 13 eggs per week as a main dish and 8 as a cooking ingredient.
4. Younger housewives did not consider eggs to be as economical (getting value for their money) a food buy as did older housewives.
5. Eggs were thought of as not being strictly a breakfast food by ninety per cent of the respondents,

however, eggs were only used for lunch or the evening meal by seventy per cent of the households.

6. Eggs were used for breakfast by more household members than any other food item.
7. The majority of respondents failed to articulate any dislike of preparing and/or serving eggs.
8. A very high percentage of consumers considered eggs to be one of nature's almost perfect foods and a beneficial food which is very nutritious.

Respondents indicated there are many favorable aspects associated with shell eggs. The poultry industry should stress these favorable attributes in their promotional efforts. However, there are some attributes that can be considered as problems and need to be examined by the industry.

Based on the results of this study, it is the opinion of the author that the poultry industry edify adults to the dietary advantages of eggs and teach children the value of eggs in a manner such that their attitudes will carry over into adult life. In addition, information should be made available on convenient ways of using shell eggs since time is often of prime importance to a homemaker when planning a meal. Also, young housewives should be informed to the merits of eggs. Overall, a promotional program that is mature and educational in nature is needed

with the nutritional and low cost aspects of eggs being stressed.

APPENDIX A

SOCIOECONOMIC CHARACTERISTICS OF HOUSEHOLDS

Table 54. Age Distribution of Respondents in Sample Households

Age	Number	Per Cent
<20	8	2.6
21-34	91	30.1
35-49	86	28.5
50-59	50	16.6
60+ years	63	20.9
No answer	4	1.3

Table 55. Occupation of Respondent and Household Head

Occupation	Respondent		Household Head	
	Number	Per Cent	Number	Per Cent
Top managerial/major professional	3	1.0	42	13.9
Executive Administrative	2	0.7	15	5.0
Owner small business	--	--	14	4.6
Technical/minor administrative/low supervisor	19	6.3	37	12.3
White collar/clerical	21	7.0	34	11.3
Skilled/semi-skilled	14	4.6	79	26.2
Unskilled/housewife	227	75.2	9	3.0
Farmer	--	--	3	1.0
Unemployed	11	3.6	33	10.9
Not ascertained	5	1.7	36	11.9
Total	302	100.0	302	100.0

Table 56. Educational Level of Respondent and Head of Household

Educational Level	Respondent		Household Head	
	Number	Per Cent	Number	Per Cent
Some high school or less	59	19.5	40	13.2
High school graduate	98	32.5	68	22.5
Some college	80	26.5	48	15.9
College graduate	45	14.9	73	24.2
College post-graduate	15	5.0	33	10.9
Not ascertained	5	1.7	40	13.3

Table 57. Total Household Income

Amount of Income	Number of Families	Percentage
$3,000	2	0.7
Under $3,000	9	3.0
Over $3,000	16	5.3
$5,000	1	0.3
Under $5,000	2	0.7
Over $5,000	69	22.8
$10,000	7	2.3
Under $10,000	4	1.3
Over $10,000	2	0.7
$15,000	3	1.0
Under $15,000	64	21.2
Over $15,000	3	1.0
$20,000	4	1.3
Under $20,000	57	18.9
Over $20,000	44	14.6
Not ascertained	15	5.0

Table 58. Observed Ethnic Group of Respondents

Ethnicity	Number	Per Cent
Anglo	282	93.4
Negro	5	1.6
Mexican-American	12	4.0
Oriental	--	--
Other	3	1.0

Table 59. Family Size of Sample Households

Number in Family	Number	Percentage
1	20	6.6
2	99	32.8
3	56	18.6
4	54	17.8
5	32	10.6
6	22	7.3
7	12	4.0
8	6	2.0
9	1	0.3

$\bar{x}$ = 3.4/household.

APPENDIX B

SIGNIFICANT CHI-SQUARES

Table 60. Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
2	Frequency of preparation	: Number in Household	9.608	4	9.488
5	Frequency of preparation	: Average At-Home Food Bill	37.036	24	36.415
8	Average Weekly Household & Per Capita Egg Consumption	: Age of Respondent	19.159	6	12.592
11	Average Weekly Household & Per Capita Egg Consumption	: Ethnic Group of Respondent	30.867	6	12.592
12	Average Weekly Household & Per Capita Egg Consumption	: Number in Household	46.648	9	16.919
13	Average Weekly Household & Per Capita Egg Consumption	: Weekly Food Bill At-Home	32.949	18	28.869

Table 60.--Continued Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
48	A Very Convenient Food "Meat"	: Educational Level of Respondent	21.994	6	12.592
48	A Very Convenient Food "Meat"	: Total Household Income	17.023	9	16.919
48	A Very Convenient Food "Meat"	: Age of Respondent	14.321	6	12.592
48	A Very Convenient Food "Eggs"	: Total Household Income	18.438	9	16.919
48	A Very Convenient Food "Cheese"	: Educational Level of Respondent	16.712	6	12.592
48	A Very Convenient Food "Cheese"	: Total Household Income	32.392	9	16.919
48	A Very Convenient Food "Cheese"	: Age of Respondent	23.540	6	12.592

Table 60.--Continued Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
48	A Most Nutritious Food "Meat"	: Educational Level of Respondent	15.900	6	12.592
48	A Most Nutritious Food "Eggs"	: Educational Level of Respondent	12.866	6	12.592
48	A Most Nutritious Food "Fish"	: Educational Level of Respondent	21.583	6	12.592
48	A Most Nutritious Food "Fish"	: Total Household Income	20.247	9	16.919
48	An Economy Food "Eggs"	: Educational Level of Respondent	19.005	6	12.592
49	Eggs or Convenience Breakfast Foods "Higher in Vitamin Content"	: Total Household Income	12.902	6	12.592

Table 60.--Continued Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
49	Eggs or Convenience Breakfast Foods "Higher in Calorie Level"	: Total Household Income	12.685	6	12.592
49	Eggs or Convenience Breakfast Foods "More Time Saving"	: Total Household Income	17.662	6	12.592
49	Eggs or Convenience Breakfast Foods "Higher in Nutritional Value"	: Age of Respondent	16.101	4	9.488
49	Eggs or Convenience Breakfast Foods "Higher in Vitamin Content"	: Age of Respondent	16.100	4	9.488

Table 60.--Continued Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
49	Eggs or Convenience Breakfast Foods "Higher in Protein Content"	: Age of Respondent	21.220	4	9.488
49	Eggs or Convenience Breakfast Foods "A Better Buy"	: Age of Respondent	17.731	4	9.488
49	Eggs or Convenience Breakfast Foods "Better for You"	: Age of Respondent	10.412	4	9.488
49	Eggs or Convenience Breakfast Foods "Higher in Calorie Level"	: Age of Respondent	13.772	4	9.488

Table 60.--Continued Chi-Squares with an .05 Level of Significance

Table which Variables are from	Variables		Calculated χ^2	Degrees of Freedom	Critical χ^2
49	Eggs or Convenience Breakfast Foods "More Time Saving"	: Age of Respondent	9.531	4	9.488
49	Eggs or Convenience Breakfast Foods "Easier to Prepare"	: Age of	16.693	4	9.488
51	"Eggs are Strictly a Breakfast Food"	: Total Household Income	8.174	3	7.815
52	"Eggs are Strictly a Breakfast Food"	: Educational Level of Respondent	15.914	2	5.991

APPENDIX C

EGG STUDY QUESTIONNAIRE

EGGS

Part I.

Good morning/afternoon/evening. Is Mrs. (Mr.)_____at home? I'm Ms._____calling for the College of Agriculture at the University of Arizona. We're conducting a study about nutrition and eating habits and would like to ask your help in our study.

Q.-1. Do you use fresh eggs in cooking or prepare them for your family?

1. No (skip to Q.-8)
2. Yes

Q.-1A. How frequently would you say that you prepared eggs or use them in your cooking? Read responses.

1. every day
2. every other day
3. two days/week
4. 1 day/week
5. other (specify)_____

Q.-2. Tell me everything you LIKE about eggs.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

EGGS

Q.-2A. Tell me everything you DISLIKE about eggs.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Q.-3. Does your household consume more, less, or the same amount of eggs than they did two years ago?

1. more

   why?_____

   _____

2. less

   why?_____

   _____

3. same

Q.-4. Do you ever prepare eggs for your household or a household member for lunch or the evening meal?

1. no (skip to Q.-5)

2. yes

Q.-4A. How many times a week for lunch?_____

How many times a week for the evening meal?_____

Q.-5. Do you ever prepare eggs as a substitute for some other food?

1. no (skip to Q.-6)

2. yes

what foods?_____

why?_____

Q.-6. Of all the fresh eggs that you use, about what portion are used in cooking recipes? (like cookies, cakes, and puddings.)

1. _____

2. do not know

3. don't use eggs in cooking (skip to Q.-7)

Q.-6A. When you use them as a cooking ingredient, what foods do you use them in? Probe for more than one answer.

1. _____

2. _____

3. _____

Q.-6B. In what ways do you most often prepare eggs? (probe for more than one answer. Examples are fried, scrambled, and boiled.)

1. _____

2. _____

3. _____

Q.-7. The last time you purchased fresh eggs, how many did you buy?

1. _____

Q.-7A. How many days ago was that purchase?

1. _____

2. does not remember.

EGGS

Q.-7B. What was the size of the eggs you bought? (don't read list, but give examples if respondent doesn't remember.)

1. small
2. medium
3. large
4. x-large
5. other (specify)_____
6. don't remember

Q-7C. Do you remember what grade they were? (read list if respondent needs help in remembering.)

1. Grade A
2. Grade AA
3. Grade B
4. Other (specify)_____
5. Don't know

Q.-7D. How did you decide what size and grade to buy?

Size_____

_____

Grade_____

_____

Q.-7E. In the last six months, have you changed the SIZE of eggs you buy?

1. no (skip to Q.-8)
2. yes

why?_____

_____

EGGS

Q.-8. Including yourself, how many people are living in your household?_____ (If more than "1", skip to Q.-9)

NOTE: If respondent is living alone, ask their age, circle their sex and continue to Q.-8A. (If Q.-2 to Q.-7 weren't answered, skip to Q.-8B.)

1.

Sex		Age
M	F	

Q.-8A. Do you limit fresh egg consumption?

1. no (skip to Q.-8B)
2. yes

Why?_____

_____

Q.-8B. How often do you eat breakfast at home and away from home during the weekdays?

1.

At Home	Away From Home

Q.-8C. During an average month, how often do you eat breakfast at home and away from home during the weekends?

1.

At Home	Away From Home

EGGS

Q.-8D. What do you usually eat for breakfast during the weekdays and weekends? (List food items.)

	Weekdays	Weekends
1.		
2.		
3.		
4.		
5.		
6.		

NOTE: If respondent lives alone, skip to Q-10 after Q-8D!!

CODE

H = Husband	FIL = Father-in-law	BRO = Brother
W = Wife	MIL = Mother-in-law	MR = Male roommate
D = Daughter	DIL = Daughter-in-law	FR = Female roommate
S = Son	SIL = Son-in-law	O = other (specify)
F = Father	C = Cousins	_____
M = Mother	SIS = Sister	

Q.-9. Would you please tell me the relationship of each member to you and their ages, starting with your age. (If questions 2-7 weren't answered, skip to Q.-9C after Q.-9.)

(Continued next page.)

EGGS

Relation to Respondent Respondent's Sex (Circle) M F	Age
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	

Q.-9A. Which household members do not eat fresh eggs and why?

1. all eat (skip to Q.-9B.)
2. doesn't eat eggs (use code for relation to respondent).

A. _____(relation to respondent)

why?_____

B. _____(relation to respondent)

why?_____

C. _____(relation to respondent)

why?_____

EGGS

D. _____(relation to respondent)

why?_____

E. _____(relation to respondent)

why?_____

F. _____(relation to respondent)

why?_____

G. _____(relation to respondent)

why?_____

H. _____(relation to respondent)

why?_____

I. _____(relation to respondent)

why?_____

J. _____(relation to respondent)

why?_____

K. _____(relation to respondent)

why?_____

L. _____(relation to respondent)

why?_____

Q.-9B. Which household members <u>limit</u> fresh egg consumption and why?

1. none limit (skip to Q.-9C.)
2. limits consumption (use code for relation to respondent).

A. _____(relation to respondent)

why?_____

B. _____(relation to respondent)

why?_____

C. _____(relation to respondent)

why?_____

D. _____(relation to respondent)

why?_____

E. _____(relation to respondent)

why?_____

F. _____(relation to respondent)

why?_____

G. _____(relation to respondent)

why?_____

H. _____(relation to respondent)

why?_____

I. _____(relation to respondent)

why?_____

J. _____(relation to respondent)

why?_____

K. _____(relation to respondent)

why?_____

L. _____(relation to respondent)

why?_____

EGGS

Q.-9C. Including yourself, how often does each member of your household eat breakfast at home and away from home during the weekdays?

Relation to Respondent (use code)	At Home	Away From Home
1. Respondent		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

Q.-9D. During an average month, how often do you and EACH member of your household eat breakfast at home and away from home during the weekends?

Relation to Respondent	At Home	Away From Home
1. Respondent		
2.		

EGGS

Relation to Respondent	At Home	Away From Home
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

Q.-9E. Including yourself, what is usually eaten for breakfast by each member of your household during the weekdays and weekends?

Relation to Respondent	Weekdays	Weekends
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

Relation to Respondent	Weekdays	Weekends
10.		
11.		
12.		

Q.-10. Let's compare eggs and convenience breakfast foods. Which would you say is (read phrase), or would you say there is no difference? (circle response)

NOTE: Convenience breakfast is, pop tarts, instant breakfast, special morning and breakfast squares. Does not include dry cereal. Accept "don't know" readily and move to next phase.

	eggs	convenience breakfast	no difference	don't know
higher in nutritional value	1	2	3	4
higher in vitamin content	1	2	3	4
higher in calorie level	1	2	3	4
higher in protein content	1	2	3	4
more time saving	1	2	3	4
easier to prepare	1	2	3	4
a better buy	1	2	3	4
better for you	1	2	3	4

EGGS

Q.-11. I am going to read you a phrase. Would you please rank them, in the 1, 2, 3, 4 order in which the following foods are best described by the phrase. (The foods are meat, fresh eggs, cheese and fish.) (Force ranking.)

	Meat	Fresh Eggs	Cheese	Fish
a very convenient food				
a most nutritious food				
an economy food				
a food I always keep on hand				
something I like to serve				
something to prepare or serve in numerous ways				

Q.-12. For the following products, do you feel that you are getting value for your money's worth, more than your money's worth, or not getting your money's worth? (Circle response.)

	Money's worth	More than your money's worth	Not getting your money's worth	No Opinion (don't read)
Fish	1	2	3	4
Beef	1	2	3	4
Eggs	1	2	3	4
Cheese	1	2	3	4
Pork	1	2	3	4

EGGS

Q.-13. Do you strongly agree, agree, disagree, or strongly disagree with the following?

	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
eggs are strictly a breakfast food	1	2	3	4	5
eggs are very nutritious	1	2	3	4	5
eggs are one of the few real economy foods	1	2	3	4	5
in a health sense, eggs are as good for adults as well as for children	1	2	3	4	5
eggs are for special occasions	1	2	3	4	5
eggs are one of nature's almost perfect foods	1	2	3	4	5
eggs are one food item that actually costs about the same as five years ago	1	2	3	4	5
eggs are great for a quick meal	1	2	3	4	5

Q.-14. If eggs were the main course in a T.V. dinner, would you buy it?

1. no

2. yes

Q.-15. Have any of your household members been on a weight reduction diet in the last three (3) months?

1. no (skip to Q.-16.)

2. yes

Who?_____

EGGS

Q.-15A. What was included in the diet? (What foods.)

1. _____

2. _____

3. _____

4. Don't know.

Q.-15B. What was not included in the diet? (What foods.)

1. _____

2. _____

3. _____

4. Don't know.

Q.-16. Have you seen or heard any egg advertisements in the paper, on television or on the radio in the last month?

1. no (skip to Q.-17)

2. yes

Q.-16A. Did you like it?

1. no

why?_____

2. yes

why?_____

Q.-16B. Has it affected your fresh egg consumption or egg purchases?

1. no (skip to Q.-17)

2. yes (ask Q.-16C.)

Q.-16C. In what way?

1. _____

EGGS

Q.-17. On an average week, how much would you say you spend for food at home and away from home? (NOTE: If respondent doesn't know, ask her (him) to estimate.)

1. At home $_____

2. Away from home $_____

Part II.

Finally, I would like to ask you just a few questions for classification purposes.

Q.-18. Is your entire family's income?

start here and check blanks as you go

Over 20,000_____
or
Under 20,000_____

Over 15,000_____
or
Under 15,000_____

Over 10,000_____
or
Under 10,000_____

Over 5,000_____
or
Under 5,000_____

Over 3,000_____
or
Under 3,000_____

NOTE: If respondent lives alone, skip to Q.-20.

Q.-19. Who is the major wage earner in your household?

1. _____

EGGS

Q.-19A. What kind of work does he (she) do?

(nature of tasks performed)_____

_____

Q.-19B. What is the last grade of school he (she) attended?

1. _____

Q.-20. What kind of work do you do?

(nature of tasks performed)_____

_____

Q.-20A. What is the last grade of school you attended?

1. _____

NOTE: If respondent lives alone, skip to Q.-22.

Q.-21. Do you or any of your household members have a farm background?

1. no (skip to Q.-23.)
2. yes

who?_____(skip to Q.-23.)

Q.-22. Do you have a farm background?

1. yes
2. no

Q.-23. What is your race? (don't read, and circle response.)

1. Anglo
2. Negro
3. Mexican-American
4. Oriental
5. Other (specify)_____

EGGS

For Interviewer Only

Q.-24. Degree of respondent's cooperation

1. excellent
2. good
3. fair
4. poor
5. very poor

Q.-25. Degree of respondent's sincerity in answering the questions.

1. very sincere
2. moderately sincere
3. not sincere

Q.-26. Interviewer's name_____

Q.-27. Phone number called:_____

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