A STUDY OF CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES IN PERRY AND AND BRISTOW, OKLAHOMA

By

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A STUDY OF CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES IN PERRY AND BRISTOW, OKLAHOMA

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CHAPTER I

INTRODUCTION

Scope and Procedure

During March and April of 1955 a survey of consumer preferences for dairy products and services was conducted in Oklahoma City, Oklahoma.[1] That study was the initial step of a two year marketing research project on consumer preferences for dairy products and services in Oklahoma milk markets. It was the first study on consumer preferences for milk in Oklahoma and was indicative of consumption patterns and preferences of consumers in the larger cities.

The present study was conducted to determine consumption patterns and preferences of consumers in the smaller cities of Oklahoma and is the final phase of the two year project. The cities of Perry and Bristow, Oklahoma, were selected for this phase of the project. These cities were selected because of similar population and income structures. Both cities had populations of 5,000 to 10,000 persons, which represented

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[1] L. D. McMullin, A Study of Consumer Preferences for Dairy Products and Services in Oklahoma City, Oklahoma, 1955, Stillwater: Oklahoma A. and M. College, Master of Science Thesis, and Leo V. Blakley, L. Don McMullin, and Kenneth B. Boggs, Consumer Preferences for Dairy Products and Services in Oklahoma City, Stillwater: Oklahoma A. and M. Experiment Station Bulletin B-464, November, 1955.

industrial and agricultural consuming groups. Approximate incomes per household in Perry and Bristow were judged to be about the same.[2] In addition, each city was geographically located at the periphery of a major milkshed. These locations insured that estimates of dairy product consumption patterns and preferences for households in smaller cities would be available for milk distributors serving the small city markets.

The objectives of this study were: first, to determine present purchases of milk and milk products as related to family size and family income; second, to obtain opinions of consumers on the richness of milk used for drinking; and third, to determine consumer preferences for the types of services attached to fluid milk.

The personal interview method was selected in this study, as it was in the Oklahoma City study, because it was one method of combining questions on actual purchases, questions on actions under possible future conditions, and questions on the reasons why certain preferences existed. The difficulty of securing meaningful answers to all these types of questions was recognized. Many of the answers relative to reasons for preferences or actions under hypothetical situations can only be considered tentative or indicative of direction of change.

The procedure used in this study was largely the same as that established for the Oklahoma City study. The content of the questionnaires used in the Perry and Bristow surveys was essentially the same as that in Oklahoma City questionnaire, with slight modifications. Copies of the questionnaires are in Appendix A.

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[2] Analysis of survey data revealed that average incomes may have been five to seven percent higher in Perry than in Bristow.

The questionnaire was designed to show quantities consumed in the seven day period just preceding the interview, preferences, reasons for preferences, and family characteristics. Family characteristics included: the number, age, and sex of adults and children; family income; and educational level of adults.

Questions on consumption required direct estimates of the interviewee based on recall. There is some bias in the consumption estimates obtained by this technique. In a Central New York Study it was found that estimates of milk purchases reported by respondents based on recall exceeded the amounts shown on the dealer records by 13.5 percent.[3] The study also indicated that the proportion of persons overstating purchases exceeded the proportion understating purchases and those who overstated tended to do so by a greater amount than those who understated. The time of day or day of the week on which the interview was made had no effect on the respondent's answer. Furthermore, the data obtained from the interview questionnaire are often subject to immeasurable biases. It is probable that some of these same type of biased estimates are present in the data in this study concerning the consumption of Perry and Bristow households.

The types of questions on opinions were: yes, no, or don't know; open end; and scales. These types of questions were developed and refined by pretesting approximately 40 Stillwater, Oklahoma households prior to the initial Oklahoma City survey and by experience gained in the Oklahoma City survey. Since the analysis was to be made with the use of IBM punch cards, answers to the open end questions were coded.

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[3] Joseph F. Metz, "Accuracy of Response Obtained in a Milk Consumption Study," Methods of Research in Marketing Paper Number 5, Cornell University Agricultural Experiment Station, Ithaca, N. Y. (July 1956).

For this study, Perry and Bristow were defined as those areas included within the corporate city limits of the respective cities. The sampling procedures were slightly different for the two cities.

The city of Perry was divided into three natural units. A general field survey was then made to assure that there were at least 5 households in each possible sample block in each unit, using city blocks where possible. A household for interview purposes was defined as synonymous with a dwelling unit as defined by the Bureau of Census. This definition was:

> A group of rooms or a single room, occupied or intended for occupancy as separate living quarters by a family or other groups of persons living together or by a person living alone. A group of rooms, occupied or intended for occupancy as separate living quarters, is a dwelling unit if it has separate cooking equipment or a separate entrance. A single room, occupied or intended for occupancy as separate living quarters, is a dwelling unit if it has separate cooking equipment or if it constitutes the only living quarters in the structure. Also, each apartment in a regular apartment house is a dwelling unit even though it may not have separate cooking equipment. Excluded from the dwelling unit count are large rooming houses, institutions, dormitories, and transient hotels and tourist courts.[4]

Each standardized block was assigned a number and a sample of blocks from each unit was drawn. Of the 78 blocks in unit one, 28 blocks were drawn at random. Of the 33 blocks in unit 2, 12 blocks were drawn at random. Ten of the 28 blocks in unit 3 were drawn at random.

From a table of random numbers, beginning house numbers were selected for each block, starting in the northwest corner and proceeding clock wise around the block. About five households or dwelling units were

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[4] U. S. Department of Commerce, Bureau of Census, U. S. Census of Housing: Block Statistics, 1950, p. 1.

interviewed in each of the sample blocks in Perry. A total of 251 schedules were obtained for analysis from the Perry study.

In Bristow, as in Perry, a general field survey was made to determine the approximate number of households in each block within the city limits. For Bristow, blocks were standardized at some number of households between 7 and 15 by adding small city blocks or by dividing large city blocks into north and south sections. The city was divided into three units (west, northeast and southeast) and a random number of blocks was selected from each unit. The households were numbered within a sample block by starting at the northwest corner and proceeding in a clockwise direction. The beginning household was selected on the basis of a toss of a coin. Thereafter, every other household was interviewed in that block. Usually about 5 to 7 households per block were interviewed in Bristow. A total of 282 schedules were obtained for analysis from the Bristow survey.

Practically all of the interviewing was conducted by local people in the respective cities. These enumerators were carefully selected and thoroughly briefed. They were not assigned quotas, but worked on an hourly basis with accuracy and completeness of schedules as criteria for enumeration. Each enumerator was given a separate set of "blocks" to interview. The sample blocks, the beginning household, and the number of households to be interviewed had been predetermined for the enumerator. The time of interview was arranged by the enumerator and the respondent. If the enumerator could not contact a respondent in the household within three calls another household in that block was selected at random.

CHAPTER II

CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES IN PERRY, OKLAHOMA

Consumption of Milk and Cream

Fresh Fluid Milk

Over 95 percent of the households interviewed in Perry used fresh fluid milk. These households consumed an average of 8.7 quarts of fresh fluid milk in the seven day period preceding the interview. The consumption for all families in Perry (users and non-users) averaged 8.3 quarts per week (Table I).

Consumption per family varied directly with income. For all families with incomes below $1000, consumption averaged 2.7 quarts per week (Table I). Consumption increased with increasing income up through the $4800 to $6000 income group where about 12.9 quarts were consumed per week. Thereafter, consumption declined with additional income. For families with incomes above $6000, consumption averaged 11.7 quarts per week. A part of this reduction in consumption reflected the fact that there were no households with 7 or more members. Additional incomes for families with 4, 5 and 6 members did result in additional consumption of fresh fluid milk.

Practically all households in each income group used fresh fluid milk except in Group I, the families with less than $1,000 annual income. Only 75 percent of the households in this income group consumed fresh fluid milk. This reflected the lower per capita consumption of

TABLE I

AVERAGE QUANTITY OF FRESH FLUID MILK AND CREAM CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
			Fresh Fluid Milk (Quarts)				
1	2.4	2.8	2.8	6.0	--	--	2.6
2	2.9	4.4	8.3	4.5	7.6	6.3	5.6
3	3.0	6.1	8.2	8.9	10.2	8.6	8.2
4	5.0	16.0	7.3	12.6	12.8	13.8	12.5
5 and 6	--	12.3	18.5	12.8	22.5	25.7	17.6
7 and over	6.0	4.0	6.3	22.5	36.0	--	13.8
Average*	2.7	5.4	9.9	9.7	12.9	11.7	8.3
			Fresh Fluid Cream (Half Pints)**				
1	0.1	0.0	0.3	0.0	--	--	0.1
2	0.4	0.3	0.0	0.4	0.5	0.1	0.3
3	3.0	0.3	0.7	1.0	0.2	0.3	0.5
4	0.0	4.5	0.0	0.1	0.3	0.2	0.4
5 and 6	--	0.0	0.1	0.2	0.7	0.0	0.2
7 and over	0.0	0.0	0.0	1.0	4.0	--	0.8
Average*	0.3	0.4	0.1	0.4	0.5	0.2	0.3

*Average quantity consumed per household for all households in that group.

**Half and half, coffee cream, and whipping cream.

Source: Survey data from consumers in Perry (September, 1955).

older age persons as well as the limited financial resources available for purchasing fresh milk.

Consumption of milk was also related to the family size of consumers. Consumption increased from 2.6 quarts per week for one member families to a maximum of 17.6 quarts per week for families with 5 and 6 members. For larger families, 7 or more members, weekly consumption decreased to 13.8 quarts. As stated previously, there were no households in this family size with incomes of $6,000 or more; consequently, this explains a part of the reduced consumption for the largest family sizes. However, most of the reduction was caused by the substitution of other milk products for fresh milk because of the lower per capita incomes of the large families.

Per capita consumption of the various income groups and family sizes was estimated on the basis of the number of families in each group, the average size of those families, and the aggregate consumption of fresh fluid milk. On this basis the average per capita consumption for all uses was 0.8 pint per day or 2.8 quarts per week.

The relation of income to per capita consumption was similar to that for family consumption. Per capita consumption increased with increasing income. For the lowest income group per capita consumption averaged only 1.8 quarts per week as compared with 3.7 quarts per week for families with annual incomes of $4800 to $6000. By family sizes, per capita consumption at 3.1 to 3.2 quarts per week was largest for families with 4, 5, and 6 persons which reflected the higher consumption rates of children. Family size 7 and over had the lowest per capita consumption (1.7 quarts per week) but the reason was primarily lower income per person. Family sizes 1, 2, and 3 had per capita consumption of 2.6 to 2.8 quarts

per week which reflected, in part, the older average ages of the family members.

Prices. For higher milk prices, about 59 percent of all milk users said they would not consume less milk, even if the price increased by 9 cents a quart. About half the families in income groups 1 through 5 said they would not use less and over 75 percent of the families in income group 6 said they would not use less milk because of higher prices of milk. In other words, the lower income groups were more willing to use less milk at higher prices than the higher income groups.

By family sizes, the smaller families made up the majority of those who would not change consumption because of price increases. These families indicated that they were able to continue buying the relatively small amounts consumed whereas the larger families replied that they would use less milk in the case of higher prices because of income restrictions.

About 41 percent of the households said they would buy less milk with price increases of 1 cent to 9 cents per quart. At a 3 cent per quart price increase, about 7 percent of the families said they would buy less milk. At a 5 cent per quart increase, about 10 percent of the families said they would buy less milk.

For lower milk prices about 78 percent of all the households would not buy additional milk even if the price were reduced by 9 cents a quart. These people were satisfied with their present supply of milk; that is, over three-fourths felt that currently, their present requirements for milk were being fulfilled regardless of income and family size. Only 22 percent would use more milk if prices were reduced from 1 cent to 9 cents a quart. About 4 percent of the families said they would

increase consumption for a 3 cent price reduction and 8.5 percent said they would increase consumption for a 5 cent price reduction.

Opinion on Richness. Most of the households were satisfied with the richness of the milk they were using. The 6.2 percent who were not satisfied, in most cases, preferred more butterfat in their milk. Generally, these people were in the low income groups and smaller size families. Most of those preferring more butterfat said they were willing to pay extra for it. However, if whole milk were made richer about 2.8 percent of all households said they would use more milk, 68.9 percent said they would consume the same amount, and 11.6 percent said they would use less whole milk (Table II).

About 56 percent of the respondents thought that the butterfat content should be marked on the outside of the milk container. Apparently this was based on the desire to know the butterfat content since most of these people were satisfied with the present richness of milk (Table III). About 28 percent of the respondents did not want or were actually indifferent as to whether or not the fat content was marked on the container.

Approximately 67 percent of all interviewees felt that fresh whole milk was fattening. About 25 percent felt that whole milk was not fattening, and 7 percent made qualified answers. Practically all (94 percent) of the interviewees who believed that whole milk was fattening were satisfied with the present richness of milk.

Fresh Fluid Cream

Fresh fluid cream was used by only 14 percent of the households in Perry. Whipping cream and half and half were most popular. About 6.8 percent of the households used an average of 2.2 half pints of whipping cream per week. For half and half, 5.6 percent of the households used

TABLE II

CONSUMERS WHO WOULD USE MORE, ABOUT THE SAME, OR LESS MILK IF BUTTERFAT CONTENT WERE INCREASED, PERRY

Income Group	More		Same Amount		Less		Others*	
	No.	Pct.**	No.	Pct.**	No.	Pct.**	No.	Pct.**
1	1	2.5	20	50.0	6	15.0	13	32.5
2	1	1.8	37	66.6	7	12.6	11	19.6
3	1	2.3	32	72.6	3	6.8	8	18.2
4	3	6.3	35	73.5	6	12.6	3	6.4
5	0	0.0	28	78.4	3	8.4	5	13.9
6	1	3.6	21	75.6	4	14.4	2	7.1
Total	7		173		29		42	
Percentage of all households		2.8		68.9		11.6		16.7

* "Don't know" and no response

** Percentage of total number of households in each response group.

Source: Survey data from consumers in Perry (September, 1955)

TABLE III

CONSUMERS DESIRING OPPORTUNITY TO BUY MILK WITH BUTTERFAT CONTENT MARKED ON BOTTLE CAP OR CARTON, PERRY

Income Group	Yes		No	Don't know and others
	No.	Pct.*	No.	
1	19	47.5	13	8
2	32	57.6	15	9
3	20	46.0	15	9
4	34	71.4	9	4
5	20	56.0	11	5
6	15	54.0	7	6
Total	140		70	41
Percentage of all households		55.8	27.9	16.3

* Percentage of total number of households in each response group.

Source: Survey data from consumers in Perry (September, 1955).

an average of 2.6 half pints per week. Only 2 percent of the households used coffee cream.

Based on all households in the survey, consumption averaged 0.3 half pint per week for the total of whipping cream, coffee cream, half and half (Table I). There was no significant relation between income level and total cream consumption. Moreover, there was no consistent relation between family size and cream consumption even though the smallest size family consumed the least amount and the largest size family consumed the greatest amount of cream. The relatively large average cream consumption estimates in Table I for certain family size-income level classifications resulted from the limited number of families (1 to 2 households) in these classifications.

Buttermilk

Over one-third of the households in Perry used buttermilk. An average of 1.5 quarts per week was consumed by those families using buttermilk. For all households this was an average consumption of 0.6 quart per week (Table IV). The consumption rate of buttermilk was about the same for all income groups. Family size 7 and over consumed the greatest amount of buttermilk. Almost three-fourths of all buttermilk was used for drinking.

Chocolate Milk

Chocolate milk was used by about 10 percent of the households in Perry. These households used 1.3 quarts per week. For all households in Perry this represented an average consumption of 0.1 quarts per week.

Consumption of chocolate milk tended to vary directly with income and family size. Income group 6 used the largest amount of chocolate milk while income group 1 used the smallest. Families with 4 members

TABLE IV

AVERAGE NUMBER OF QUARTS OF BUTTERMILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
			Buttermilk				
1	0.4	0.9	0.5	3.0	--	--	0.6
2	0.6	0.4	0.7	0.4	0.7	1.1	0.6
3	1.0	0.8	0.2	0.8	0.7	0.6	0.7
4	0.0	0.5	1.0	0.7	0.8	0.3	0.6
5 and 6	--	0.3	0.4	0.0	0.2	0.3	0.2
7 and over	6.0	0.0	0.8	0.5	0.0	--	1.1
Average*	0.6	0.6	0.6	0.5	0.6	0.6	0.6

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry (September, 1955).

used the most chocolate milk while 2 member families used the smallest amount.

Canned Milk

Over half the households (55.8 percent) used canned milk. These households used about 2.4 cans during the week prior to the interview. For the users, the consumption rate tended to be greater as the family size increased. Income did not appear to be related to the use of canned milk except that consumption by users was greatest for the highest income group.

For all households in the survey, the total use of canned milk increased with family size even though per capita use declined. Consumption increased from 0.7 can for family size 1 up to 3.6 cans for family size 7 and over (Table V).

Income was significantly related to the use of canned milk by large size families. Consumption was greatest in the lower income levels for family size 7 and over. A similar tendency was evident for family size 5 and 6. However, in the aggregate, consumption averaged greater for the highest income group which reflected the large consumption of one family in family size 3.

About half of all canned milk used was filled milk or Milnot. Filled milk was used by families of all sizes and income levels. However, filled milk consumed as a percentage of all canned milk consumed was smallest for family size 7 and over.

About 16 percent of all canned milk was used for drinking. Low cost and other reasons (including use for baby formulas) were the reasons given for using canned milk for drinking.

TABLE V

AVERAGE QUANTITY OF CANNED MILK AND POWDERED MILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
Canned Milk (14 Ounce Cans)							
1	0.8	0.6	0.5	0.0	--	--	0.7
2	1.1	1.4	0.6	1.2	0.8	0.4	1.0
3	1.0	1.2	2.8	1.2	0.5	5.4	2.0
4	0.0	0.5	0.7	1.2	1.1	1.1	1.0
5 and 6	--	3.0	1.6	3.2	1.3	0.0	2.0
7 and over	3.0	10.0	4.7	1.0	0.0	--	3.6
Average*	0.9	1.4	1.4	1.6	0.9	2.0	1.4
Powdered Milk (Quarts Equivalent)							
1	0.5	0.0	0.0	0.0	--	--	0.5
2	1.4	0.7	0.3	0.1	0.4	0.4	0.6
3	1.0	0.8	0.2	0.1	0.2	0.3	0.4
4	0.0	0.0	0.3	0.7	0.4	0.5	0.5
5 and 6	--	1.3	0.0	0.0	0.0	0.0	0.1
7 and over	8.0	3.0	5.3	0.5	0.0	--	3.5
Average*	0.9	0.7	0.5	0.2	0.3	0.4	0.5

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry (September, 1955).

About 21 percent of all canned milk was used for cereals and coffee. About 63 percent was used for cooking and other purposes. The most important reasons given for using canned milk for these purposes were low cost and substitute for cream which together accounted for 47 percent of the reasons given (Table VI). The next important reasons were recipes called for it, convenience, and ease of storage or use as a reserve.

Powdered Milk

Almost one-fourth the households used powdered milk. Use of powdered milk by these households averaged 2.2 quarts equivalent per week. The largest absolute amounts of powdered milk were used by lower income-smaller size families but the highest rate of use was for the largest family size. The users of powdered milk in family size 7 and over consumed an average of 5.6 quarts equivalent in the seven day period compared with about 2.0 quarts equivalent for other users.

For all households in Perry, consumption averaged 0.5 quart equivalent (Table V). Family size appeared to have no effect on aggregate consumption except for the largest family size with an average consumption of 3.5 quarts equivalent per week. Income appeared to be inversely related to powdered milk consumption. Families with annual incomes below $1000 used an average of 0.9 quart equivalent per week. Use by families with incomes of $1000 to $2400 averaged 0.7 quart equivalent. Families with annual incomes above $2400 used from 0.2 to 0.5 quart equivalent per week.

One out of every three families using powdered milk used it for drinking. Low cost and fewer calories were the more important reasons given for preferring powdered milk over fresh whole milk. These reasons represented 77 percent of the reasons given for this preference (Table VII).

TABLE VI

REASONS GIVEN FOR PREFERRING CANNED MILK BY SAMPLE HOUSEHOLDS, PERRY

Reasons	Preference of Canned Milk for:	
	Drinking	Other Uses
Low cost	3	41
Convenience	1	19
Taste	0	10
Storage and Reserve	0	18
Easy to Use	0	5
Substitute for Cream	0	38
Recipes Call for It	0	21
Other	3	17
Total	7	169

Source: Survey data from consumers in Perry (September, 1955).

TABLE VII

REASONS GIVEN FOR PREFERRING POWDERED MILK OVER FRESH FLUID MILK PRODUCTS FOR DRINKING BY SAMPLE HOUSEHOLDS, PERRY

Reason	Preference of Powdered Milk Over:	
	Whole Milk	Skim Milk
Low Cost	8	8
Convenience	0	4
Taste	1	2
Storage and Reserve	2	1
Fewer Calories	9	2
Easy to Use	0	4
Other	2	2
Total	22	23

Source: Survey data from consumers in Perry (September, 1955).

When asked why they preferred powdered milk over fresh skim milk, the principal reasons given were: low cost, convenience and easy to use.

About 69 percent of all powdered milk was used for purposes other than drinking. Low cost was the most frequent reason given for preferring powdered milk for these uses.

When users of powdered milk were questioned about relative nutritional values, 38 percent thought powdered milk had less protein and mineral value than whole milk, 29 percent thought it had the same value, and 33 percent did not know. For the non-users, 25 percent thought powdered milk had less protein and mineral value than whole milk, 20 percent thought it had the same value, while 55 percent did not know. The major difference between the users and the non-users in this case was in the percentages that did not know the nutritional values. The ratio of opinions of less nutritive value to the same nutritive value was similar for the users and the non-users.

About 56 percent of the users of powdered milk and 33 percent of the non-users had no objections to using powdered milk. Of those households expressing objections, about 45 percent objected because of taste. This was the same for both users and non-users. Other objections expressed were mixing problems, inconvenient, looks thin, and less nutritional value.

Total Milk

There can be less variation in total milk consumption than in fresh fluid milk consumption because of the possibility of substituting lower cost dairy products for the fresh milk. This substitution did occur in Perry households. Canned milk and powdered milk were used in relatively large amounts by the lower income families to supplement their limited purchases of fresh milk.

An estimate of total milk consumption was obtained by adding the consumption of fresh fluid milk, fresh fluid cream, buttermilk, canned milk, and powdered milk for each family size-income level classification. On this basis, Perry households consumed an average of 11.1 quarts equivalent per week (Table VIII).

Total milk consumption at 5.4 quarts equivalent was lowest for the families with less than $1,000 annual income. Consumption increased with increasing income up to $4,800 annual income, then leveled out.

Consumption consistently increased as the family sizes were larger. For one member families, consumption averaged 4.5 quarts equivalent. For families with 7 or more members, consumption averaged 22.8 quarts equivalent per week. There was some evidence that per capita consumption declined as the family sizes became larger.

On the basis of estimates by type of product consumed, about 60 percent of the total milk consumption was used for drinking. Separate estimates of glasses of milk drunk per day by individuals were also obtained in order to analyse consumption by age and sex of household members.

Since the size of glasses varied between families and sometimes within families, a procedure was adopted whereby estimates were obtained of the number of 5 1/3 ounce glasses drunk by each individual.

Both age and sex were related to the number of glasses drunk per day (Figure 1). For males consumption increased with age through 20 years. Consumption increased about .09 glass for each year past one year of age. From ages 21 to 39, males drank a little over 2.0 glasses per day. After age 40, consumption varied from 1.2 to 1.9 glasses per day.

TABLE VIII

AVERAGE NUMBER OF QUARTS EQUIVALENT OF ALL MILK CONSUMED BY SAMPLE HOUSEHOLDS*, PERRY

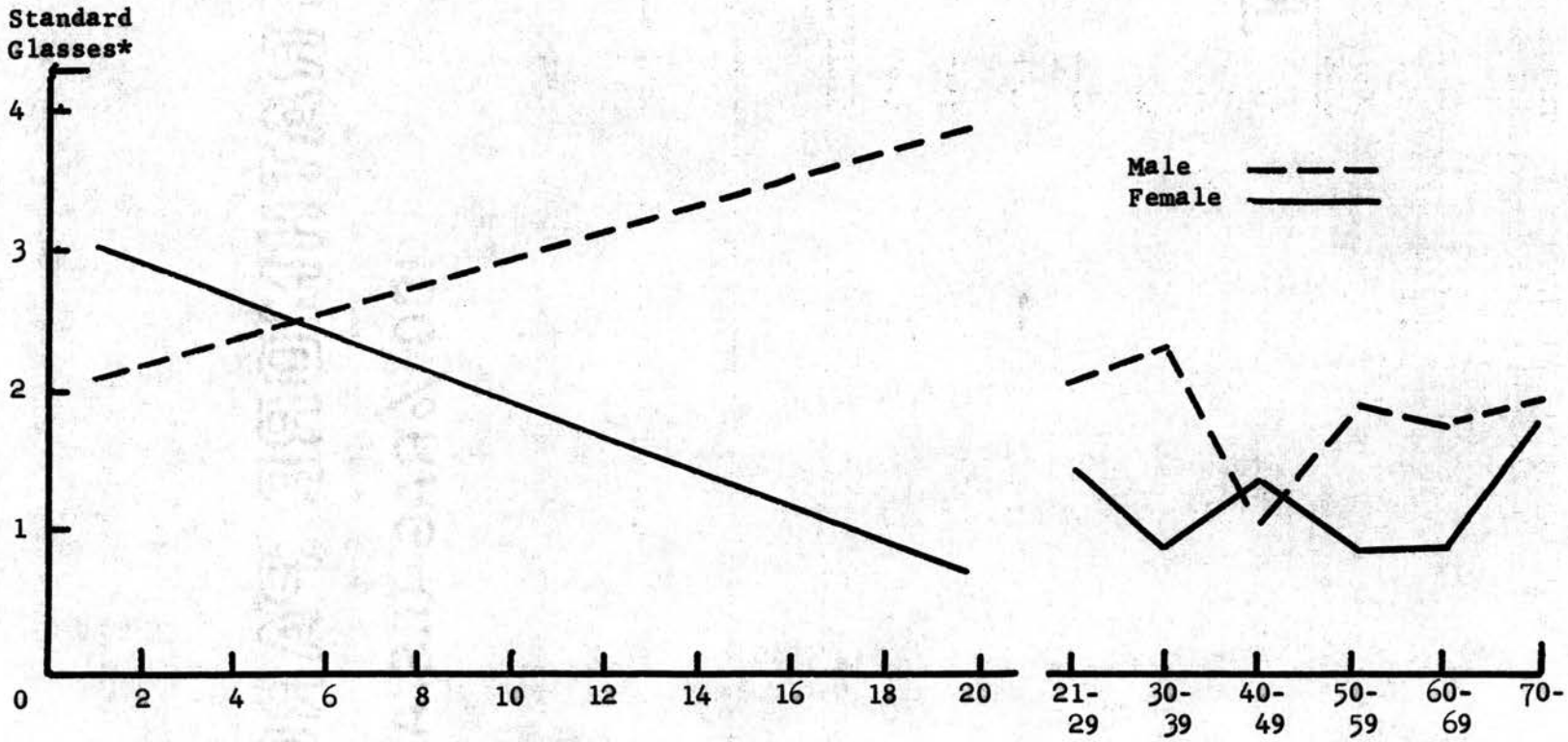
Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average**
1	4.2	4.3	4.1	9.0	--	--	4.5
2	6.4	7.2	9.9	6.6	10.0	8.3	8.1
3	9.0	9.2	12.1	12.0	11.8	15.2	11.8
4	5.0	22.0	9.3	15.3	15.4	15.9	15.0
5 and 6	--	16.9	20.6	16.2	24.7	26.0	20.1
7 and over	23.0	17.0	17.1	25.5	40.0	--	22.8
Average**	5.4	8.5	12.5	12.4	15.2	15.1	11.1

* Consists of fresh fluid milk, canned milk, cream, powdered milk and buttermilk.

** Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry (September, 1955).

Figure 1. Standard Glasses of Milk Drunk Daily
by Perry Consumers (September, 1955)



* A standard glass is equivalent to 5 1/3 ounces.

Source: Survey data from consumers in Perry, Oklahoma (September, 1955).

For females, consumption declined with age. At age 1 females drank 3.1 glasses per day as compared with only 1.1 glasses per day at age 20. After age 20, females drank from 0.8 to 1.5 glasses per day until age 70 when consumption increased to 1.8 glasses per day.

Consumption of Selected Products

Cottage Cheese

About three-fourths of the households used cottage cheese. During the 7 day period prior to the survey, these households used an average of 1.6 twelve ounce cartons per week (Table IX). Consumption of cottage cheese varied directly with income, increasing through income group 4 and leveling off with additional income thereafter. For family sizes, consumption varied directly per household with increasing family size through family size 3 and varied indirectly for large families. Consuming the smallest amount of cottage cheese were families of 1 member and those in income group one.

Frozen Desserts

During the week prior to the interview, Perry households consumed about 2.1 quarts of frozen desserts (ice cream, ice milk, and mellorine) per household or 0.7 quart per capita. This rate is expected to be higher than the yearly average consumption because this study was conducted during early September, a warmer part of the year. More ice milk (56.6 percent) was consumed than ice cream (30.4 percent) and mellorine (12.9 percent) combined. Income did not appear to influence purchases to any great extent. The larger families consumed more ice milk and mellorine than ice cream.

Almost half of the households used ice cream. They used an average of 3.0 pints during the week prior to the survey. For all the households

TABLE IX

WEEKLY CONSUMPTION OF SELECTED MILK PRODUCTS AND SUBSTITUTES BY SAMPLE HOUSEHOLDS, PERRY

	Users		Total Quantity	Average Consumption by Users	Average Consumption by all Households
	No.	Pct.*			
Cottage Cheese**	186	74.1	295	1.6	1.2
Ice Cream	107	42.6	317 pts.	3.0 pts.	1.3 pts.
Ice Milk	95	37.8	296 qts.	3.1 qts.	1.2 qts.
Mellorine	24	9.6	67 qts.	2.8 qts.	0.3 qts.
Butter	67	26.7	51 lbs.	0.8 lbs.	0.2 lbs.
Oleomargarine	207	82.5	241 lbs.	1.2 lbs.	1.0 lbs.

* Percentage of all households in the survey.

** 12 ounce containers.

Source: Survey data from consumers in Perry (September, 1955).

this represented an average consumption of 1.3 pints per week. Consumption of ice cream varied directly with income with the exception of income group 4 where only one-third of the households used ice cream. Consumption increased for family sizes 1 through 4 and then decreased for larger families. Income group 6 and family size 3 used the most ice cream. Income group 1 and family size 1 used the smallest amount of ice cream. Per capita rates were similar.

Mellorine was used by about 10 percent of the households in Perry. Consumption of those using mellorine averaged 2.8 quarts per week or 0.3 quart per week for all households (Table IX). Consumption varied directly with family size. For income groups, consumption increased with increasing income through income group 4, and then decreased with additional income. Most of the mellorine was used by families in income group 4 and by families with seven or more members. Mellorine was used least by families in income group 2 and by families of one member.

About 38 percent of the households used an average of 3.1 quarts of ice milk during the week prior to the survey (Table IX). For all households this represented 1.2 quarts per week. Families in income group 4 used the greatest amount and families in income group 1 used the least amount of ice milk. The larger family sizes consumed relatively more ice milk than smaller family sizes. Consumption increased with income to a maximum of 1.7 quarts per household for families with incomes of $3600 to $4800. Thereafter consumption decreased with added income to 1.0 and 0.8 quarts for income groups 5 and 6 respectively. About three times as much ice milk as mellorine was used by households in Perry.

Table Spreads

During the week prior to the survey about 83 percent of tablespreads used for all purposes consisted of oleomargarine; the remainder was

butter. Butter was used by about 27 percent of all households. Oleomargarine was used by about 83 percent. Approximately 36 percent of the families in Perry used both butter and oleomargarine.

About 83 percent of the households consumed an average of 1.2 pounds of oleomargarine per household using oleomargarine and 1 pound for each household in the study (Table IX). Income group 6 consumed the greatest quantity of oleomargarine, but households in group 5 used the most proportionally of any group. Income group 6 also had the largest per capita consumption rate but was followed closely by all other groups.

Family size was directly correlated with use of oleomargarine. Family size 7 and over used oleomargarine entirely but had the lowest per capita consumption rate. Family sizes 4 and 2 consumed the most oleomargarine per capita. Perry residents consumed about 4 times more oleomargarine than butter.

About 27 percent of the households consumed an average of 0.75 pounds or 3 quarter pounds of butter per week (Table IX). Butter consumption varied somewhat indirectly with family size and income. Consumption by households in income groups 1 through 5 varied inversely with income but increased to the higher rate for income group 6. Relatively high consumption by income group 1 may be due to the use of commodity butter, rather than a function of income. The largest consumers of butter by households as related to income were in this order: income group 6, income group 2 and income group 1. On a per capita basis butter consumption was the highest in income group 1, next highest in income group 2, and third highest in income group 6. Family size 3 was the largest consumer of butter. However, on a per capita basis, it ranked third behind one and two member families. Families with 7 or more members did not use butter.

Preferences for Services Attached to Fresh Fluid Milk

Place of Purchase

About 65 percent of all Perry households preferred to purchase milk at the grocery store (Table X). The most frequent reasons given in favor of purchases at the grocery store were: quantity of milk used and convenience or opportunity to buy milk while shopping (Table XI). In general, purchases at the grocery store were preferred by smaller income families, smaller size families and very large families. The only exception is for the highest income families which prefer the grocery store primarily because of smaller (and presumably more irregular) purchases of fresh fluid milk for home consumption.

Almost one-fourth (23.1 percent) of the households preferred to receive their milk by route delivery. Those preferring route delivery were higher income groups and medium family sizes. The biggest reason for preferring route delivery was convenience, which represented 75 percent of all reasons given by those who prefer route delivery. Freshness, better taste and quality were also important reasons (Table XI).

The remaining consumers (9.6 percent) preferred to get their milk from farmers and other sources.

Not necessarily all households used the particular method they preferred. Of those preferring the delivery route, only about 75 percent actually used it while 25 percent used the grocery store. Practically all who preferred the grocery actually purchased their milk at the grocery store.

Consumers on route delivery responded in the following manner to a hypothetical price reduction at the grocery: 25 percent would not change for any price reduction, these were small family sizes and low

TABLE X

CONSUMER PREFERENCES FOR PLACE OF PURCHASE OF FRESH FLUID MILK, PERRY

Family Size	1 Under $1000	2 $1000 2400	3 $2400 3600	4 $3600 4800	5 $4800 6000	6 Over $6000	Total	1/	2/
Prefer Store Purchase									
1	16	7	2	0	--	--	25	15.2	60.9
2	5	21	13	12	8	4	63	38.4	71.5
3	1	7	6	5	5	8	32	19.5	68.0
4	1	2	3	4	3	4	17	10.4	48.5
5 and 6	--	3	4	5	5	3	20	12.2	62.5
7 and over	1	1	3	2	0	--	7	4.3	87.5
Total	24	41	31	28	21	19	164		
1/	14.6	25.0	18.9	17.1	12.8	11.6	--	100	--
2/	60.0	73.2	70.4	59.5	58.3	67.8	--	--	65.3
Prefer Home Delivery									
1	5	1	2	1	--	--	9	15.5	21.9
2	1	7	1	2	1	2	14	24.1	15.9
3	0	4	0	3	4	0	11	18.9	23.4
4	0	0	0	6	6	6	18	31.0	51.4
5 and 6	--	0	3	1	1	0	5	8.6	15.6
7 and over	0	0	0	0	1	--	1	1.7	12.5
Total	6	12	6	13	13	8	58		
1/	10.3	20.7	10.3	22.4	22.4	13.7	--	100	--
2/	15.0	21.4	13.6	27.6	36.1	28.5	--	--	23.1

1/ Percentage of the total number of households preferring to purchase milk at the place of purchase.

2/ Percentage of the total number of households in this income group or family size.

Source: Survey data from consumers in Perry (September, 1955).

TABLE XI

CONSUMERS REASONS FOR PREFERENCE OF PLACE OF PURCHASE OF FRESH FLUID MILK, PERRY

Reasons	Delivery	Store
Low cost	1	4
Convenience	44	66
Taste, Freshness, or Quality	9	3
Quantity Used	3	69
Brand, Container, or Service	1	0
Unsatisfactory Delivery Time	0	7
At the Store Anyway	0	32
Habit	0	5
Other	4	12
Total	62	198
Respondents	58	164

Source: Survey data from consumers in Perry (September, 1955).

income groups who did not consume much milk; 75 percent would change for some price reduction. About 17 percent said they would change to the store for a 2 cent per quart further reduction at the store, 17 percent would change for a 3 cent reduction, 7.5 percent for a 4 cent reduction, and 12.5 percent for a 5 cent reduction. It would take a reduction of 5 cents per quart or more at the store to interest 20 percent of the consumers in changing from route to store purchases. Cumulatively, 33 percent of those now purchasing milk on route delivery said they would switch to the store for a reduction in the store price of 3 cents per quart and a total of 55 percent said they would switch if the store price were reduced 5 cents per quart.

Frequency of Purchase

About 28 percent of the households preferred to get milk three times a week because of convenience, quantity used, taste, freshness and quality (Table XII). These households were mostly medium to high income and medium to large families. About 25 percent preferred to get milk daily because of taste, freshness, quality, quantity used, storage facility, and convenience. These were medium income groups and medium to large families. Purchasing milk every other day was preferred by about 14 percent because of convenience and the quantity used by these lower income groups. The 6 percent preferring milk once a week because of quantity used were lower income and smaller family groups. About 11 percent, consisting of small families and low income groups, preferred milk twice a week. The remaining households preferred times of purchase other than those above.

Practically all households were purchasing milk at the frequency they preferred except that about 32 percent of those preferring daily

TABLE XII

REASONS FOR PREFERENCE FOR FREQUENCY OF PURCHASE OF FRESH FLUID MILK, PERRY

Reasons	Daily	Every Other Day	Three Times a Week	Two Times a Week	Once a Week
Convenience	11	13	33	9	2
Taste, Freshness, or Quality	26	4	6	0	0
Storage Facilities	12	1	3	1	0
Quantity Used	21	13	28	19	14
At Store Anyway	1	0	2	3	0
Habit	4	1	6	0	1
Other	3	0	2	0	0
Total	78	32	80	32	17
Respondents	63	35	70	27	15
Percent of all Households	25.1	13.9	27.9	10.7	6.0

Source: Survey data from consumers in Perry (September, 1955).

purchase were not following that pattern. Those 32 percent were using three times a week and other patterns and they were medium to high income groups and medium to large families.

Type of Container

Glass containers were used by 97.8 percent of the households purchasing milk on the delivery route; the remainder were paper containers. When milk was purchased at the store 94.3 percent of the consumers used paper containers.

When asked what type container they preferred if their milk were delivered, consumers were about equally divided in preferring paper and glass. About 47 percent of all households preferred paper because they did not like to handle bottles and believed that paper cartons were more convenient and more sanitary than glass (Table XIII). About 44 percent preferred glass containers if their milk were delivered because of taste, sanitation and visual inspection purposes. There was more preference for glass among the higher income groups and the smaller families. Five percent had no particular preference for either paper or glass.

If milk were not delivered, 68 percent would prefer paper because of no bottles to handle, more convenient and more sanitary (Table XIII). Glass would be preferred by 26.3 percent, if milk were not delivered, because of taste, more sanitary, and visual inspection.

Size of Container

If milk were not delivered, 44.2 percent of the households would prefer quart containers (Table XIV). These were mostly lower income groups and smaller size families. Quarts were preferred because of amount used (52 percent of all reasons given for quart preference), convenience (28 percent) and storage facility (9 percent).

TABLE XIII

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR TYPE OF CONTAINER, PERRY

Reasons	When Milk is Delivered		When Milk is not Delivered	
	Paper Carton	Glass Bottle	Paper Carton	Glass Bottle
Convenience	22	7	33	6
Taste-keeps better	2	35	3	23
Storage Facilities	5	1	7	2
Amount Used	2	1	1	0
More Sanitary	16	26	16	16
No Bottles to Handle	94	0	140	0
Visual Inspection	0	10	0	10
Other	1	10	6	4
Habit	2	9	3	4
Number of Respondents	118	110	170	66
Percentage of all Households	47.0	43.8	67.7	26.3

Source: Survey data from consumers in Perry (September, 1955).

TABLE XIV

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR CONTAINER SIZE WHEN MILK IS NOT DELIVERED, PERRY

Reasons	Quart	One-half Gallon	Gallon
Low Cost	0	4	0
Convenience	34	48	0
Taste, Freshness, or Quality	6	2	0
Storage Facilities	11	45	1
Amount Used	63	59	0
Other	2	1	1
Habit	6	5	0
Respondents	111	125	2
Percentage of all Households	44.2	49.8	0.8

Source: Survey data from consumers in Perry (September, 1955).

The one half gallon size container was preferred by 49.8 percent of all households if milk were not delivered. These households were in medium to high incomes or had larger size families. Reasons given for the half gallon container preference were: amount used (36 percent) convenience (29 percent) and storage (27 percent). Gallon and miscellaneous sizes were preferred by 0.8 percent.

If milk were delivered the preferences for quart containers and half gallon containers were reversed. The container size most preferred for milk on delivery was the quart (50.6 percent). The half gallon container was preferred by 42.6 percent of the households. Half gallon containers were preferred by medium-high income groups and medium size families while the quart containers were preferred mostly by low income and small size families. The reasons given for preferring the different sizes were about the same for store purchases as for purchases from delivery routes.

CHAPTER III

CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES IN BRISTOW, OKLAHOMA

Consumption of Milk and Cream

Fresh Fluid Milk

About 91 percent of the households interviewed in Bristow used fresh fluid milk. The users consumed an average of 8.8 quarts per week. The average for all households was 8.0 quarts per week (Table XV).

Consumption per family varied directly with income. Households with incomes below $1000 consumed 3.2 quarts per week. Consumption increased with increasing income up through the $3600 to $4800 income group where consumption averaged about 12.3 quarts per week. Consumption was lower for families with incomes above $4800. Those with incomes of $4800 to $6000 used 9.7 quarts per week and those with incomes above $6000 consumed 11.2 quarts per week. The lower consumption of these two groups was partially due to income group 5 having a smaller number of large families than income group 4, and income group 6 having no consumers in family size 1.

Practically all households in each income group consumed fresh fluid milk except for families with less than $1000 income. Only 73 percent of the households in this group used fresh fluid milk. This reflected the lower per capita consumption of older age persons as well as the limited

TABLE XV

AVERAGE QUANTITY OF FRESH FLUID MILK AND CREAM CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
			Fresh Fluid Milk (Quarts)				
1	2.6	3.7	4.5	0.0	3.3	--	2.9
2	3.0	5.1	7.4	5.1	5.7	5.9	4.9
3	3.3	7.0	8.3	9.4	10.0	9.0	8.1
4	9.0	4.0	11.1	12.8	9.3	17.8	11.8
5 and 6	4.0	8.5	15.7	17.6	16.0	15.3	15.3
7 and over	12.0	4.0	16.0	21.7	23.0	17.0	18.2
Average*	3.2	5.5	9.6	12.3	9.7	11.2	8.0
			Fresh Fluid Cream (One-Half Pints)				
1	0.3	0.7	0.3	0.0	1.0	--	0.4
2	0.2	0.2	0.2	0.3	1.1	0.3	0.3
3	0.0	0.3	0.3	0.0	0.0	0.5	0.2
4	0.0	0.0	0.1	0.2	0.0	2.1	0.4
5 and 6	0.0	0.0	0.2	0.2	0.0	1.5	0.3
7 and over	0.0	0.0	0.0	0.0	0.0	2.0	0.4
Average*	0.2	0.2	0.2	0.2	0.4	1.0	0.3

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Bristow (April, 1956).

financial resources available for purchasing fresh fluid milk.

Consumption of milk was also related to family size of consumers. Consumption increased from 2.9 quarts per week for one member families to a maximum of 18.2 quarts per week for families with 7 or more members.

Per capita consumption of the various income groups and family sizes was estimated on the basis of number of families in each group, the average size of those families, and the aggregate consumption of fresh fluid milk. On this basis the average per capita consumption for all users was .8 pint per day or 2.7 quarts per week.

Per capita consumption for income groups varied directly with income. Those with incomes less than $1000 consumed 1.8 quarts per week per person. Per capita consumption increased to 3.1 quarts per person for those with incomes of $3600 to $4800 and over $6000. Those with incomes of $4800 to $6000 consumed 2.8 quarts per person weekly because of a smaller number of large families.

Per capita consumption among family sizes varied by only 0.6 quart. Family sizes 1 and 4 consumed the most milk per capita (2.9 quarts per person). This was partially due to the relatively high per capita income of family size 1. Family sizes 1 and 2 had the highest per capita incomes but family size 2 had proportionally more low income families than did family size 1. Family size 4 had more children than the smaller family sizes and had sufficient income per capita to purchase milk which the very large families could not provide. Family size 7 or more had the lowest per capita consumption, 2.3 quarts per week, primarily because of lower income per person.

Prices. For higher milk prices, about 73 percent of all milk consumers in Bristow said they would not use less milk, due to cost, even

if the price increased 9 cents per quart. Over half of the families in income groups 1 through 5 said they would not use less and about 85 percent of the families in income group 6 said they would not use less milk because of higher prices of milk. The higher income groups were not as willing to use less milk at higher prices as the lower income groups. About 15 percent of all the households said they would buy less milk with price increases of 1 cent to 9 cents per quart. At a 4 cent increase per quart about 7 percent of the families said they would buy less milk.

By family sizes, the smaller families made up the majority of those who would not change consumption because of price increases. These families indicated that they were able to continue buying the relatively small amounts they consumed, whereas the large families replied that they would use less milk in the case of higher prices because they could not afford it.

For lower milk prices, about 76 percent of all the households would not buy additional milk even if the price were reduced by 9 cents a quart. These people were satisfied with their present consumption of milk; that is, over three-fourths felt that their present requirements for milk were currently being fulfilled, regardless of income and family size. Only 24 percent would use more milk if prices were reduced from 1 cent to 9 cents a quart. About 12 percent of the families would buy additional milk with a 5 cent reduction in price.

Opinions on Richness. Most of the households were satisfied with the richness of the milk they were using. The 21 percent who were not satisfied preferred more butterfat in their milk. Most of those preferring more butterfat said they were willing to pay extra for it. If whole milk

were made richer 5.3 percent of all present consumers said they would use more, 76.2 percent said they would consume the same amount, and 3.5 percent said they would use less whole milk (Table XVI).

About 45.4 percent of the respondents thought that the butterfat content should be marked on the outside of the container (Table XVII). Apparently this was based on the desire to know the butterfat content since most of these people were satisfied with the present richness of milk. About 40 percent of the respondents answering the question "no" or "did not know" were actually indifferent as to whether or not the fat content was marked on the container.

Approximately 66 percent of all interviewees felt that fresh whole milk was fattening. About 31 percent said that whole milk was not fattening, and about 3 percent made qualified answers. Practically all (90 percent) of the interviewees who said that the whole milk was fattening were satisfied with the present richness of milk.

Fresh Fluid Cream

Fresh fluid cream was used by only about 15 percent of the households in Bristow. Whipping cream and half and half were the most popular. About 4.6 percent of the households used 1.8 half pints of whipping cream per week. Half and half was consumed by 6 percent of the households at the rate of 2.5 half pints per week. About 4 percent of the households used 1.9 half pints of coffee cream weekly.

Based on all households in the survey, consumption averaged 0.3 half pint per week for the total of whipping cream, coffee cream, and half and half (Table XV). For households in income groups 1 through 4 cream consumption was about the same at 0.2 half pint per household. Cream consumption increased to 0.4 half pint for income group 5 and to 1.0 half

TABLE XVI

CONSUMERS WHO WOULD USE MORE, ABOUT THE SAME, OR LESS MILK IF BUTTERFAT CONTENT WERE INCREASED, BRISTOW

Income Group	More		About Same		Less		Others*	
	No.	Pct.**	No.	Pct.**	No.	Pct.**	No.	Pct**
1	3	4.8	39	62.0	2	3.2	19	30.1
2	5	8.8	42	73.7	0	0.0	10	17.5
3	3	6.9	29	67.5	5	11.6	6	13.9
4	2	3.9	46	90.2	0	0.0	3	5.9
5	1	2.4	36	85.7	2	4.8	3	7.1
6	1	3.8	23	88.5	1	3.8	1	3.8
Total	15		215		10		42	
Percentage of all Households	5.3		76.2		3.5		14.19	

* "Don't know's" and no response
** Percentage of total number of households in each response group.

Source: Survey data from consumers in Bristow (April, 1956).

TABLE XVII

CONSUMERS DESIRING OPPORTUNITY TO BUY MILK WITH BUTTERFAT CONTENT MARKED ON BOTTLE CAP OR CARTON, BRISTOW

Income Group	Yes		No	Don't know and Other
	No.	Pct.*	No.	
1	18	28.6	17	28
2	27	47.4	16	14
3	18	41.6	16	9
4	29	56.9	14	8
5	21	50.3	14	7
6	15	57.7	8	3
Total	128		85	69
Percentage of all Households		45.4	30.1	24.5

* Percentage of households in that group.

Source: Survey data from consumers in Bristow (April, 1956).

pint per household for families with incomes above $6000. There was no direct relation between family size and consumption of cream, except that more single member families and two member families used cream than the larger families.

Buttermilk

Over one-third of the households in Bristow used buttermilk. An average of 1.9 quarts per week were consumed by those families using buttermilk. For all households this was an average consumption of 0.7 quart per week (Table XVIII). Consumption of buttermilk increased more or less with increasing income. Income group 2 averaged consuming 0.4 quart per week, and consumption increased to 1.0 quart per week for families with incomes above $6000. Family sizes 4 and 7 and over consumed the highest average quantity of buttermilk (0.9 quart per week). About 60 percent of all buttermilk was used for drinking.

Chocolate Milk

About 3 percent of the households in Bristow used chocolate milk. These households used 1.5 quarts per week. For all households in Bristow this would be an average consumption of 0.04 quart per week. Family sizes 1, 2, and 7 and over did not use chocolate milk. For families with 3, 4, 5 and 6 members consumption varied directly with size. Consumption also varied directly, more or less, with the household income in that income group 4 used the largest amount of chocolate milk per household and income group one consumed the smallest amount.

Canned Milk

Over half of the households (58.9 percent) used canned milk. These households consumed an average of about 3.4 cans during the week prior to the interview. For the users, the consumption rate increased with

TABLE XVIII

AVERAGE NUMBER OF QUARTS OF BUTTERMILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
1	0.2	1.0	0.8	7.0	0.3	--	0.5
2	0.8	0.2	1.2	0.5	1.3	1.2	0.6
3	0.5	0.8	0.2	0.5	1.0	0.8	0.6
4	0.0	0.0	1.7	0.4	0.6	2.0	0.9
5 and 6	2.0	0.3	1.0	0.7	0.5	0.3	0.7
7 and over	4.0	0.0	0.0	1.3	0.7	0.0	0.9
Average*	0.5	0.4	0.8	0.7	0.9	1.0	0.7

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Bristow (April, 1956).

increasing family size. The medium income groups had about the same rate of use of canned milk per household, but the consumption rate was highest for income group 1 at 4.1 cans and lowest for income group 6 at 2.5 cans per household per week.

For all households in the survey the total use of canned milk increased with family size (Table XIX). Per capita use was about the same for all family sizes. The consumption of canned milk tended to vary inversely with income. Families with less than $1000 income averaged consuming 2.5 cans weekly per household and the highest income group averaged 1.0 can weekly per household. However, the high income larger families used more canned milk than the low income large families. Most of the smaller families in the lower income groups consumed more canned milk than those in the higher income groups.

Half of all canned milk used was filled milk or Milnot. Filled milk was used by households in all family sizes and income levels. Although consumption per household increased with family size, per capita use remained about the same throughout. Consumption of filled milk was highest for income groups 1, 2 and 3 and declined thereafter with additional income.

About 15 percent of all canned milk was used for drinking. Low cost and other reasons (including use for baby formulas) were the reasons given for using canned milk for drinking.

About 20 percent of all canned milk was used for cereals and coffee. About 65 percent was used for cooking and other purposes. The most important reason given for using canned milk for these purposes were low cost and a substitute for cream which together accounted for 64 percent of the reasons given (Table XX). The next important reasons were recipes called for it and ease of storage or use as a reserve.

TABLE XIX

AVERAGE QUANTITY OF CANNED MILK AND POWDERED MILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
			Canned Milk (14 Ounce Cans)				
1	0.8	0.2	0.0	0.0	0.0	--	0.6
2	1.6	1.2	0.6	0.3	1.1	0.3	1.1
3	3.1	3.3	2.1	1.6	1.3	1.6	2.1
4	36.0	2.0	0.9	1.8	1.4	2.0	3.3
5 and 6	3.0	5.8	5.3	3.6	4.0	1.0	3.9
7 and over	3.0	7.0	2.0	5.7	6.7	0.0	4.5
Average*	2.5	1.9	1.9	2.2	1.8	1.0	2.0
			Powdered Milk (Quarts Equivalent)				
1	0.6	0.0	0.0	0.0	0.7	--	0.4
2	1.0	0.9	2.0	0.0	0.9	0.1	0.8
3	3.7	1.9	0.1	0.5	0.6	0.0	0.9
4	0.0	3.0	0.0	0.3	0.9	0.4	0.5
5 and 6	3.0	2.2	0.5	2.0	0.8	0.8	1.5
7 and over	3.0	4.0	4.0	1.0	2.0	4.0	2.1
Average*	1.1	1.2	0.4	0.8	0.9	0.4	0.9

* Average quantity consumed per household for all households in this group.

Source: Survey data from consumers in Bristow (April, 1956).

TABLE XX

REASONS GIVEN FOR PREFERRING CANNED MILK BY SAMPLE HOUSEHOLDS, BRISTOW

Reasons	Preference of Canned Milk for:	
	Drinking	Other Uses
Low Cost	5	73
Convenience	0	7
Taste	2	3
Storage and Reserve	3	30
Fewer Calories	0	1
Easy to Use	0	6
Substitute for Cream	0	84
Recipes Call for it	0	32
Other	4	8
Total	14	244

Source: Survey data from consumers in Bristow (April, 1956).

Powdered Milk

About one-fourth of the households in Bristow used powdered milk. An average of 3.2 quarts per household was consumed by these families during the week prior to the interview. For those using powdered milk, the larger families consumed more quarts per household but less per capita than the smaller families. Family sizes 5, 6, and 7 and over used about 3.4 to 4.0 quarts weekly while family sizes 1 and 2 used 2.5 to 2.9 quarts. By income level, the rate of consumption was about the same for low and medium income families. Families in income group 6 had the lowest consumption rate and the smallest number of people using powdered milk. Income group one had the most people using powdered milk.

For all households in Bristow, consumption averaged 0.9 quart per week (Table XIX). Family sizes with more than 4 members consumed the greatest amounts. Family sizes 5 and 6 and 7 and over consumed 1.5 and 2.1 quarts per household respectively. For families of 4 members and less there was no direct relationship between family size and consumption. Income appeared to be inversely related to powdered milk consumption. Families with annual incomes of less than $2400 used 1.1 to 1.2 quarts per week. Families with incomes above $2400 consumed from 0.4 to 0.9 quarts of powdered milk weekly.

Almost half of the families using powdered milk used some for drinking. Low cost and fewer calories were the more important reasons given for preferring powdered milk over fresh whole milk. These reasons represented 58 percent of the reasons given for this preference (Table XXI). When asked why they preferred powdered milk over fresh skim milk, the principle reasons given were: never used skim milk, low cost and fewer calories.

TABLE XXI

REASONS GIVEN FOR PREFERRING POWDERED MILK OVER FRESH FLUID MILK PRODUCTS FOR DRINKING BY SAMPLE HOUSEHOLDS, BRISTOW

Reasons	Preference of Powdered Milk Over:	
	Whole Milk	Skim Milk
Low Cost	18	10
Taste	2	4
Storage and Reserve	6	4
Fewer Calories	11	7
Easy to Use	1	1
Never Used Skim	0	18
Other	12	7
Total	50	51

Source: Survey data from consumers in Bristow (April, 1956).

About 68 percent of all powdered milk was used for purposes other than drinking. Low cost and storage and reserve were the most frequent reasons given for preferring powdered milk for these users.

When users of powdered milk were questioned about the relative nutritional values, 28 percent thought that powdered milk had less protein and mineral value than fresh whole milk, 26 percent thought it had the same value and 46 percent did not know. For the non-users, 24 percent thought powdered milk had less proteins and mineral value than whole milk, 17 percent thought it had the same value and 59 percent did not know. The opinions on nutritional value are about the same for users and non-users although apparently fewer non-users thought they knew the nutritional value of powdered milk.

About 72 percent of the users and 46 percent of the non-users had no objections to using powdered milk. Taste was the most frequent reason for objection to powdered milk by users and non-users. Other objections expressed were mixing problems, looks thin like water, and less nutritive value.

Total Milk

The total milk consumption and the consumption of fresh fluid milk are similar for Bristow. Although more powdered milk and canned milk were used by the lower income families this did not raise their consumption rates to those of the higher income groups who consumed greater amounts of fresh fluid milk, buttermilk, and cream.

An estimate of total milk consumption was obtained by adding the consumption of fresh fluid milk, fresh fluid cream, buttermilk, powdered milk and canned milk for each family size - income level classification. On this basis, Bristow households consumed an average of 11.9 quarts equivalent per week (Table XXII).

TABLE XXII

AVERAGE NUMBER OF QUARTS EQUIVALENT OF ALL MILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS*, BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average**
1	4.5	5.6	5.6	7.0	5.3	--	4.8
2	6.6	7.6	11.4	6.2	10.1	7.8	7.7
3	10.6	13.3	11.0	12.0	12.9	11.9	11.9
4	45.0	9.0	13.8	15.5	12.2	24.3	16.9
5 and 6	12.0	16.8	22.7	24.1	21.3	18.9	21.7
7 and over	22.0	15.0	22.0	29.7	32.4	23.0	26.3
Average**	7.5	9.2	12.9	16.2	13.7	14.6	11.9

* Consists of fresh fluid milk, canned milk, cream, powdered milk, and buttermilk.

** Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Bristow (April, 1956).

Total milk consumption, both per household and per capita, increased with increasing income. Families with less than $1000 annual income consumed 7.5 quarts equivalent. The consumption rate increased with additional income up to 16.2 quarts for families with incomes of $3600 to $4800 and then dropped to 13.7 and 14.6 for income groups 5 and 6 respectively. There are fewer children in income groups 5 and 6 than in income group 4.

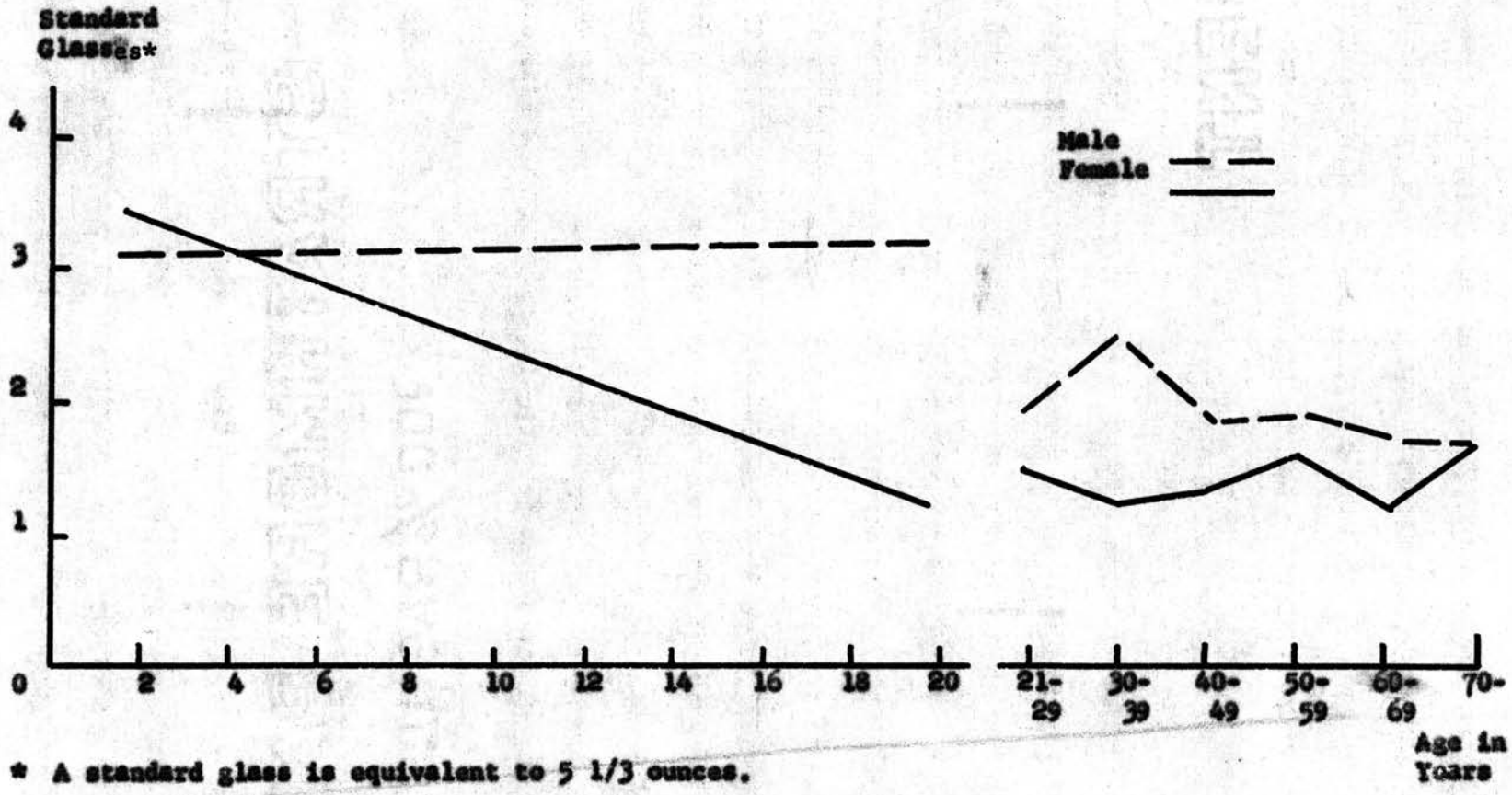
Consumption consistently increased as the family sizes became larger. For one member families consumption averaged 4.8 quarts equivalent. For families with 7 or more members consumption averaged 26.3 quarts equivalent per week. Per capita consumption was highest for the one member families but was almost as high for larger size families.

On the basis of estimates by type of product consumed, about 61 percent of the total milk consumption was used for drinking. Separate estimates of glasses of milk drunk per day by individuals were also obtained in order to analyze consumption by age and sex of household members. The same procedure was used in the Bristow estimates as in the Perry estimates to obtain the number of 5 1/3 ounce glasses drunk by each individual.

Both age and sex were related to the number of glasses drunk per day (Figure 2). For males, consumption was practically unchanged at 3.1 glasses per day from 1 year to 20 years of age. From ages 21 to 39, males drank about 2.3 glasses per day. After age 39, through age 70, males drank about 1.6 glasses per day.

For females, consumption of milk declined regularly with age. At age 1 females drank 3.5 glasses per day as compared with only 1.2 glasses per day at age 20. After age 20 females drank from 1.2 to 1.6 glasses

Figure 2. Standard Glasses of Milk Drunk Daily by Bristow Consumers (April, 1956)



* A standard glass is equivalent to 5 1/3 ounces.

Source: Survey data from consumers in Bristow, Oklahoma, (April, 1956).

per day. At age 70 consumption was 1.7 glasses per day.

Consumption of Selected Products

Cottage Cheese

One half of the households used cottage cheese at the average rate of 1.8 twelve ounce cartons during the week prior to the survey. (Table XXIII). Consumption increased with income for income groups 1 through 3. Income group 4 had relatively low consumption and income group 5 had a consumption rate about the same as for income group 3. Income group 6 had the highest rate of consumption per household. For family sizes, consumption increased per household as family size increased. However, per capita rates decreased as families became larger than 3 members.

Frozen Desserts

During the week prior to the interview, Bristow households consumed about 1.3 quarts of frozen desserts (ice cream, ice milk, and mellorine) per household or 0.4 quart per capita. This consumption rate is expected to be lower than the yearly average because the survey was conducted during the semi-cool month of April. More quarts of ice cream were used (43 percent) than either ice milk (18 percent) or mellorine (39 percent). Consumption of frozen desserts varied directly with the family size. Family size 1 used 0.4 quart per week and family size 7 and over used 2.4 quarts per household. For income groups, consumption increased with increasing income through group 5 and then decreased for group 6. Income group 1 used 0.8 quarts per household, group 5 used 2.0 quarts, and group 6 used 1.5 quarts per household weekly.

TABLE XXIII

WEEKLY CONSUMPTION OF SELECTED MILK PRODUCTS AND SUBSTITUTES BY SAMPLE HOUSEHOLDS, BRISTOW

Product	Users		Total Quantity	Average Consumption by Users	Average Consumption by all users
	No.	Pct.*			
Cottage Cheese**	143	50.7	253	1.8	0.9
Ice Cream	91	32.3	306 pts.	3.4	1.1
Ice Milk	26	9.2	64 qts.	2.5	0.2
Mellorine	63	22.3	138 qts.	2.2	0.5
Butter	105	37.2	91.3 lbs.	0.9	0.3
Oleomargarine	194	68.8	240 lbs.	1.2	0.8

* Percentage of all households in the survey.

** 12 ounce containers

Source: Survey data from consumers in Bristow (April, 1956).

About one-third of the households used ice cream. They used an average of 3.4 pints during the week prior to the survey (Table XXIII). For all households this was an average consumption of 1.1 pints. The income groups in order of the highest to lowest consumption rates were; groups 5, 6, 1, 4, 2, 3. The three highest income groups consumed the largest amount per household. However income group 1 used as much ice cream as income group 4, and more than group 2 and 3. Consumption increased with family size from family size 1 (0.2 quart) through family size 3 (0.8 quart) and then decreased for family sizes 4 (0.5 quart) and 5 (0.5 quart) and increased to the highest rate for family size 7 and over (1.2 quarts).

Mellorine was used by 22 percent of the households in Bristow. Consumption of those using mellorine averaged 2.2 quarts per week or 0.5 quart for all households. Consumption varied directly with family size through 5 and 6 member families and then decreased for family size 7 and over. For income groups, consumption increased with additional income from 0.2 quart per week for income group 1 to 0.7 quarts per week for income group 5 and then decreased to 0.5 quart for families in income group 6.

About 9 percent of the households used an average of 2.5 quarts of ice milk during the week prior to the survey (Table XXIII). For all households this would be a consumption rate of 0.2 quarts per week. With the exception of family sizes 2 and 7 and over, consumption varied directly with family size. Family size 5 used the highest rate at 0.5 quarts per household and family size 2 the smallest amount at 0.1 quart per household. Income was directly related to ice milk consumption. Consumption increased from 0.1 quarts per week for income group 1 up to 0.5 quarts per week for income group 5.

Table Spreads

About 72 percent of table spreads used for all purposes was oleomargarine; the remainder was butter. Oleomargarine was used by 69 percent of the households and butter was used by 37 percent (Table XXIII). About 22 percent of the households in Bristow used both butter and oleomargarine. Bristow households used 2 1/2 pounds of oleomargarine for every pound of butter consumed.

The families using oleomargarine consumed about 1.2 pounds weekly per household. For all households this rate would be 0.8 pounds per week. Consumption of oleomargarine varied directly with family size. Family size one used about 1/4 pound per week and family size 7 and over used almost 2 pounds per week. Consumption per household increased with income level through income group 4 and then leveled off. Income group 6 consumed less oleomargarine than either income group 4 or income group 5.

Households consuming butter (37 percent) used an average of 0.9 pound per week. This is an average of 0.3 pound for all households. Consumption of butter varied directly with the family size, except that 4 member families used slightly less than 3 member families.

The higher income and lower income families in Bristow used the greatest quantities of butter. The relatively high consumption in the lower income groups reflects, in part, the use of Commodity Credit Corporation surplus butter. Income groups 1 and 2 consumed 1.1 and 1.9 quarter pounds per week respectively. Income groups 5 and 6 consumed from 1.5 to 1.8 quarter pounds per week. Income groups 3 and 4 both used less than one quarter pound per week.

All income groups used more oleomargarine than butter.

The consumption of both tablespreads, butter and oleomargarine combined, increased with additional income through income group 5. Income group 1 averaged 3.3 quarter pounds weekly per household of oleomargarine and butter combined and income group 5 averaged 6.1 quarter pounds weekly. Consumption of both tablespreads also varied directly with family size. Family size 1 used 2.0 quarter pounds per week and family size 7 and over used 10.0 quarter pounds weekly.

Preferences for Services Attached to Fresh Fluid Milk

Place of Purchase

Almost one half (46 percent) of all Bristow households preferred to purchase milk at the grocery store (Table XXIV). The most frequent reasons given in favor of purchases at the grocery store were: convenience or opportunity to buy milk while shopping and the quantity of milk used (Table XXV). In general, purchases at the grocery store were by smaller income families, smaller size families and very large families.

About one-third (33 percent) of the households preferred to receive their milk by route delivery (Table XXIV). Those preferring route delivery were the higher income groups and medium and large family sizes. The most frequent reason given for preferring route delivery was convenience. Taste, freshness and service were also important reasons.

The remainder of the households (21 percent) consisted of families preferring to get milk from farmers or from other unspecified sources, and of households not using milk. Practically all households were actually using the places of purchase they preferred.

Consumers on route delivery were asked how much the price reduction at the grocery store would have to be to cause them to switch from the route to the store. About 52 percent would not change to the grocery as

TABLE XXIV

CONSUMER PREFERENCES FOR PLACE OF PURCHASE OF FRESH FLUID MILK, BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000 2400	3 $2400 3600	4 $3600 4800	5 $4800 6000	6 Over $6000	Totals	1/	2/
Prefer Store Purchase									
1	13	3	2	0	2	--	20	15.3	44.4
2	10	17	5	6	5	5	48	36.6	53.3
3	2	5	9	5	4	3	28	21.4	44.5
4	1	1	3	6	1	1	13	9.9	32.5
5 and 6	0	3	4	6	2	1	16	12.2	48.5
7 and over	1	1	0	3	1	0	6	4.6	54.6
Total	27	30	23	86	15	10	131		
1/	20.6	22.9	17.6	19.8	11.5	7.6		100	
2/	42.9	52.6	53.5	51.0	35.9	38.5			46.5
Prefer Home Delivery									
1	9	2	2	0	0	--	13	14.0	28.8
2	1	6	5	1	5	4	22	23.7	24.4
3	2	3	4	5	5	2	21	22.6	33.3
4	1	0	0	5	8	4	18	19.4	45.0
5 and 6	0	0	1	8	2	3	14	15.1	42.4
7 and over	0	0	1	0	2	2	5	5.4	45.5
Totals	13	11	13	19	22	15	93		
1/	14.0	11.8	14.0	20.4	23.7	16.1		100	
2/	20.6	19.3	30.1	37.3	52.7	57.7			33.0

1/ Percentage of the total number of households preferring to purchase milk at that place of purchase.

2/ Percentage of the total number of households in this income group or family size.

Source: Survey data from consumers in Bristow (April, 1956).

TABLE XXV

CONSUMERS REASONS FOR PREFERENCE OF PLACE OF PURCHASE OF FRESH FLUID MILK, BRISTOW

Reasons	Delivery	Store
Low Cost	0	2
Convenience	82	58
Taste, Freshness or Quality	13	2
Storage Facilities	1	0
Quantity Used	4	33
Brand, Container or Service	20	4
Unsatisfactory Delivery Time	0	11
At Store Anyway	0	37
Habit	4	4
Other	8	35
Total	132	186
Respondents	93	131

Source: Survey data from consumers in Bristow (April, 1956).

a place of purchase for any price reduction; these were medium size families and the larger income groups who had sufficient income to continue their purchaser preference. About 14 percent said they would change for a 2 cent per quart further reduction at the store, 14 percent would change for a 3 cent reduction, 6 percent for a 4 cent reduction and 11 percent for a 5 cent reduction. The remaining 7 percent would change for a price reduction greater than 5 cents. Cumulatively, 28 percent of those now on delivery route would change to the store for a reduction of 3 cents per quart and a total of 45 percent said they would switch if the store price were reduced 5 cents per quart.

Frequency of Purchase

About 36 percent of the households preferred to get their milk three times a week because of quantity used, convenience, taste, freshness and quality (Table XXVI). These households were mostly in the medium-high income groups and the medium size family groups. About 21 percent preferred to get milk daily because of taste, freshness, quantity used, and convenience. Preference for daily purchase increased with family size and income level. Purchasing milk every other day was preferred by 10.6 percent because of quantity used, convenience, and taste or freshness. Every other day purchase was most preferred by medium size families and households in income groups 3 and 6. The 10.9 percent who preferred to purchase milk twice a week because of quantity used were in the smaller families and lower income groups. About 9 percent, consisting of small families and low income groups, preferred to purchase milk once a week. The remaining households either preferred to purchase milk at times other than those stated above or were not users of milk.

TABLE XXVI

REASONS FOR PREFERENCE FOR FREQUENCY OF PURCHASE OF FRESH FLUID MILK, BRISTOW

Reasons	Daily	Every Other Day	3/Week	2/Week	1/Week
Low Cost	0	0	1	0	0
Convenience	14	10	39	6	6
Taste, Freshness or Quality	38	7	13	1	0
Storage Facilities	7	2	9	3	0
Quantity Used	17	16	49	21	18
Brand, Container or Service	0	0	6	0	0
At Store Anyway	8	2	2	3	0
Habit	3	0	6	0	0
Other	2	3	2	2	1
Total	89	40	127	36	25
Respondents	59	30	102	31	24
Percentage of all Households	20.8	10.6	36.1	10.9	8.5

Source: Survey data from consumers in Bristow (April, 1956).

Practically all households were purchasing milk at the frequency they preferred except that about 30 percent of those preferring daily purchase were not following that pattern. These families were using three times a week and every other day purchase. They were large family and medium to high income groups.

Type of Container

About 96 percent of the households used glass containers when purchasing on the delivery route; the remainder were paper containers. When milk was purchased at the store 87 percent of the consumers used paper containers and the remainder glass.

When asked what type container they preferred if their milk were delivered, 32 percent of all households preferred paper cartons and 50 percent preferred glass bottles. About 7 percent had no particular preference. Paper cartons were preferred over glass because the users did not like to handle bottles and they liked the general convenience of paper cartons (Table XXVII). Households on delivery route preferred glass because of taste, belief that glass is more sanitary, convenience, and visual inspection purposes. More of the smaller families and higher income groups prefered glass containers.

If milk were not delivered, 48 percent would prefer paper primarily because of no bottles to handle and convenience. Glass containers would be preferred by 34 percent of the households because of taste or keeping quality, belief that glass is more sanitary than paper, convenience and visual inspection purposes.

Size of Container

If milk were delivered, 44.7 percent of the households would prefer quart containers because of amount used (56 percent of all reasons given for quart preference), convenience in ease of handling (19 percent) and

TABLE XXVII

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR TYPE OF CONTAINER, BRISTOW

Reasons	When Milk is Delivered		When Milk is not Delivered	
	Paper Carton	Glass Bottle	Paper Carton	Glass Bottle
Low Cost	0	2	0	0
Convenience	13	23	26	17
Taste, Freshness	3	74	3	38
Storage Facility	3	1	0	2
Quantity Used	1	1	0	1
More Sanitary	6	33	4	27
No Bottles to Handle	78	0	123	0
Visual Inspection	0	16	0	11
Habit	1	11	1	6
Other	2	11	4	4
Total	107	172	161	106
Respondents	89	142	135	96
Percentage of all Households	31.6	50.3	47.8	34.0

Source: Survey data from consumers in Bristow (April, 1956).

storage facility (15 percent). Quantity used was the most important reason for quart preference. Preference for quart containers varied inversely with the size of families. Family size 7 and over preferred only half gallon and gallon containers. By income groups, quart preference generally declined for additional income through $4800, and then increased for income groups 5 and 6. In other words the low income groups preferred quart containers because of small amounts of milk used and the high income households preferred quarts because of convenience and the lack of necessity to economize with large containers.

The one half gallon size container would be preferred by 36.7 percent of all households if milk were delivered. The half gallon preference varied directly with family size, except that families of 7 and more members, because of preference for gallon containers, had less preference for half gallons than family sizes 5 and 6. Reasons given for half gallon container preferences were amount used (53 percent) storage facility (16 percent) convenience or ease of handling (13 percent) and lower cost (13 percent). Gallon containers were preferred by 9 percent of the households, who were mostly larger families or higher income families.

For all households, when milk is not delivered, 42.2 percent would prefer the quart size container, 42.9 percent would prefer the one-half gallon size, 2.8 percent would prefer the gallon size and 12.1 percent either expressed no preference or purchased no milk (Table XXVIII). As compared with preferences when milk is delivered there is a significant increase in the preference for half gallon containers at the store and a decrease in the preference for gallon containers.

TABLE XXVIII

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR CONTAINER SIZE WHEN MILK IS NOT DELIVERED, BRISTOW

Reasons	Quart	Half Gallon	Gallon
Low Cost	0	15	1
Convenience	35	27	1
Taste, Freshness or Quality	9	2	0
Storage Facilities	15	25	1
Amount Used	78	79	7
Other	1	7	0
Habit	2	1	0
Total	140	156	10
Respondents	119	121	8
Percentage of all Households	42.2	42.9	2.8

Source: Survey data from consumers in Bristow (April, 1956).

Preference for half gallon containers was related to the amount of milk used and varied directly with family sizes. By income groups, medium and high income families preferred the half gallon container over the quart at the store. Half gallon containers at the store were preferred for about the same reasons as preferences for half gallon containers when milk is delivered.

Preferences for quart containers varied inversely with income through $4800. For families with incomes above $4800 preference for quarts increased but still remained below that for half gallon sizes. For family sizes, quart preference was greatest for family size one and decreased thereafter with increasing size of families. Quart containers at the store were preferred for about the same reasons as when purchased on the delivery route.

CHAPTER IV

CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES FOR THE COMBINED MARKETS OF PERRY AND BRISTOW, OKLAHOMA

The populations of Perry and Bristow had similar consumption patterns for fresh fluid milk and selected dairy products and the preferences for the services accompanying these products were much the same. Therefore, a combination of these two markets will provide a basis for estimating preferences and consumption patterns in the smaller cities served by milk distributors. Also, this information can be used to determine the similarity of consumption patterns and preferences in smaller cities with consumption patterns and preferences established in Oklahoma City.

Consumption of Milk and Cream

Fresh Fluid Milk

About 93 percent of the households interviewed in Perry-Bristow used fresh fluid milk. These households consumed an average of 8.8 quarts of fresh fluid milk during the 7 day period prior to the interview. The consumption for all families in Perry-Bristow (users and non-users) averaged 8.2 quarts per week (Table XXIX).

Practically all households used fresh milk except those with annual incomes of less than $1000 and those in family size 1. Only 74 percent of income group 1 and 83 percent of family size 1 used fresh fluid milk.

TABLE XXIX

AVERAGE QUANTITY OF FRESH FLUID MILK AND CREAM CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY AND BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
			Fresh Fluid Milk (Quarts)				
1	1.6	3.1	3.6	3.0	3.3	--	2.8
2	3.0	4.8	8.1	4.7	6.6	6.1	5.2
3	3.3	6.5	8.3	9.1	10.1	8.8	8.2
4	7.7	12.0	10.2	12.7	10.9	15.1	12.1
5 and 6	4.0	10.0	17.4	15.6	19.9	19.7	16.4
7 and over	9.0	4.0	8.8	22.0	26.2	17.0	16.3
Average*	3.0	5.5	9.8	11.1	11.2	11.5	8.2
			Fresh Fluid Cream (One-half Pints)**				
1	0.2	0.3	0.3	0.0	1.0	--	0.3
2	0.3	0.3	0.0	0.3	0.8	0.3	0.3
3	0.4	0.3	0.4	0.5	0.1	0.3	0.3
4	0.0	3.0	0.1	0.1	0.2	0.9	0.4
5 and 6	0.0	0.0	0.1	0.2	0.4	0.9	0.3
7 and over	0.0	0.0	0.0	0.4	1.0	2.0	0.5
Average*	0.3	0.3	0.2	0.3	0.4	0.6	0.3

* Average quantity consumed per household for all households in that group.

** Coffee cream, whipping cream and half and half.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

However, these groups are similar because one member families constituted 57 percent of the households in income group 1. The smaller number of households in these groups using fresh milk reflects the lower per capita consumption of older age persons as well as the limited money available for purchasing fresh fluid milk.

For all households the consumption of fresh fluid milk varied directly with family size and income. There was a tendency for milk consumption to level out for families with incomes above $4800 per year. By family size consumption reached a maximum for family size 5 and 6. Per capita consumption varied directly with income and was about the same throughout all family sizes except that families with 7 and more members used about one third less than smaller families.

Prices. For higher milk prices, about 66 percent of all milk users said they would not consume less milk, even if the price increased by 9 cents a quart. Over half of the households in income groups 1 through 5 said they would not use less milk because of increased prices. About 81 percent of income group 6 would not use less because of high prices.

The higher income groups were less willing to restrict their milk consumption due to higher prices. Willingness to buy less milk because of higher prices increased with family sizes. About 70 percent of family size 1 would not change, but only 47 percent of family size 7 and over said they would not use less milk at higher prices. Income would not restrict the consumption of the smaller families, whereas it would restrict the ability to buy the large quantities at higher prices needed by larger families.

For lower prices, about 72 percent of all households would not buy additional milk even if the price were reduced by 9 cents a quart. These households, regardless of income or family size, felt that their present

requirements were being fulfilled. Only 28 percent would use more milk if prices were reduced. About 18 percent of the households would use more milk for a 5 cent per quart reduction in price.

Opinions on Richness. Most of the households were satisfied with the richness of the milk they were using. The 8.2 percent who were not satisfied, in most cases, preferred more butterfat in their milk. These households were mostly in the lower income groups except income group 4 which had the highest percentage of dissatisfied households. About one-half of those preferring more butterfat said they were willing to pay extra for it. If whole milk were made richer about 4 percent of the respondents said they would use more milk, 73 percent said they would use about the same amount, and 7 percent said they would use less whole milk (Table XXX).

About 50 percent of the respondents thought that the butterfat content should be marked on the outside of the milk container (Table XXXI). About 29 percent of the respondents did not want or desire the fat content marked on the container.

About 56 percent of all interviewees believed the fresh whole milk was fattening. About 24 percent felt that fresh whole milk was not fattening and 20 percent gave qualified answers. Practically all (92 percent) of the interviewees who felt that whole milk was fattening were satisfied with the present richness of milk.

Fresh Fluid Cream

Fresh fluid cream was used by only 15 percent of the households in the Perry-Bristow survey. Whipping cream and half and half were the most popular. About 6 percent of the households used an average of 2.0 half pints of whipping cream per week. For half and half, 6 percent of

TABLE XXX

CONSUMERS WHO WOULD USE MORE, ABOUT THE SAME, OR LESS MILK IF BUTTERFAT CONTENT WERE INCREASED, PERRY AND BRISTOW

Income Group	More		About Same		Less		Others*	
	No.	Pct.**	No.	Pct.**	No.	Pct.**	No.	Pct.**
1	4	3.9	59	57.3	8	7.8	32	31.0
2	6	5.3	79	69.9	7	6.2	21	18.6
3	4	4.6	61	70.1	8	9.2	14	16.0
4	5	5.1	81	82.7	6	6.1	6	6.1
5	1	1.3	64	82.1	5	6.4	8	10.3
6	2	3.7	44	81.5	5	9.3	3	5.6
Total	22		388		39		83	
Percentage of all Households	4.1		72.7		7.3		15.7	

*"Don't know's" and no response

** Percentage of total number of households in each response group.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

TABLE XXXI

CONSUMERS DESIRING OPPORTUNITY TO BUY MILK WITH BUTTERFAT CONTENT MARKED ON BOTTLE CAP OR CARTON, PERRY AND BRISTOW

Income Group	Yes		No	Don't know and others
	No.	Pct.*	No.	
1	37	35.9	30	36
2	59	52.2	31	23
3	38	43.7	31	18
4	63	64.3	23	12
5	41	52.6	25	12
6	30	55.6	15	9
Total	268		155	110
Percentage of all Households		50.0	29.0	21.0

* Percentage of total number of households in each response group.

Source: Survey data from consumers in Perry and Bristow, September, 1955 and April, 1956 respectively.

the households used an average of 2.6 half pints per week. Only 3 percent of the households used coffee cream.

Based on all households in the survey, consumption averaged 0.3 half pint per week for the total of whipping cream, coffee cream, and half and half (Table XXIX). Cream consumption appeared to increase with income except in income group 3 where less cream was used than in income groups 1 and 2. Income group 1 used 0.3 half pint per week and income group 6 used 0.6 half pint of cream per week. For family sizes, consumption of cream increased with family size except for family size 5 and 6.

Buttermilk

Over one-third of the households in Perry-Bristow used buttermilk. An average of 1.7 quarts per week was consumed by those using buttermilk. For all households this was an average consumption of 0.6 quarts per week (Table XXXII).

The consumption rate for buttermilk was about the same for all income groups and family sizes. Family size 7 and over consumed the largest amount of buttermilk but family size 5 and 6 used the smallest amount. About two-thirds (64 percent) of all buttermilk was used for drinking.

Chocolate Milk

Chocolate milk was used by about 6 percent of the households in the Perry-Bristow surveys. These households used 1.3 quarts per week. For all households in Perry-Bristow this represented an average consumption of 0.1 quart per week.

The consumption of chocolate milk was greater in the higher income groups and larger family sizes. Income group 6 used the most chocolate milk and income groups 1 and 2 used the smallest amounts. Family sizes 4, 5 and 6 consumed the largest quantity of chocolate milk and family sizes 1, 2, and 7 and over used the smallest quantities of chocolate milk.

TABLE XXXII

AVERAGE NUMBER OF QUARTS OF BUTTERMILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY AND BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
1	0.3	0.9	0.7	5.0	0.3	--	0.6
2	0.7	0.3	0.8	0.4	1.0	1.1	0.6
3	0.6	0.8	0.2	0.6	0.8	0.7	0.6
4	0.0	0.3	1.5	0.5	0.7	0.9	0.8
5 and 6	2.0	0.3	0.6	0.4	0.3	0.3	0.4
7 and over	5.0	0.0	0.5	1.0	0.5	0.0	1.0
Average*	0.6	0.5	0.7	0.6	0.7	0.8	0.6

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

Canned Milk

Over half of the households (57.2 percent) used canned milk. These households used about 3.0 cans during the week prior to the interview. For the users consumption increased with family size. Income did not appear to influence the consumption rate except that highest income group consumed the largest amount of canned milk per household.

For all households in the survey, the total use of canned milk increased with family size and the per capita consumption rate decreased only slightly as families became larger. Consumption increased from 0.6 can for family size 1 to 4.1 cans for family size 7 and over (Table XXXIII). The lower income groups used more canned milk per household than the higher income groups. There were no families with 7 and over members using canned milk in income group 6. Consumption was greatest in the lower income levels for family sizes 5, 6, 7 and over. The income groups with the highest consumption per household (1.9 cans) were groups 1 and 4. Income group 1 had three 4 member families averaging 24.0 cans per week, raising that group's average.

About half of all canned milk was filled milk or Milnot. Filled milk was used by families of all sizes and income levels. Filled milk represented the highest percentage of all canned milk consumed for family size two and the smallest percentage for family size 4. Consumption of filled milk for all households varied indirectly with income.

About 16 percent of all canned milk was used for drinking. Low cost, storage and reserve and other reasons (including use for baby formulas) were the reasons given for using canned milk for drinking (Table XXXIV).

About 21 percent of all canned milk was used for cereals and coffee. About 63 percent was used for cooking and other purposes. The most

TABLE XXXIII

AVERAGE QUANTITY OF CANNED MILK AND POWDERED MILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS, PERRY AND BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average*
Canned Milk (14 Ounce Cans)							
1	0.8	0.4	0.3	0.0	0.0	--	0.6
2	1.5	1.3	0.6	0.9	0.9	0.3	1.1
3	2.9	2.2	2.3	1.4	0.9	3.8	2.1
4	24.0	1.0	0.8	1.6	1.3	1.4	2.2
5 and 6	3.0	4.6	3.0	3.4	2.5	0.6	3.0
7 and over	3.0	8.5	4.0	3.8	5.0	0.0	4.1
Average*	1.9	1.7	1.7	1.9	1.4	1.6	1.7
Powdered Milk (Quarts Equivalent)							
1	0.5	0.0	0.0	0.0	0.7	--	0.4
2	1.1	0.8	0.7	0.1	0.7	0.3	0.7
3	3.1	1.3	0.1	0.3	0.4	0.1	0.7
4	0.0	1.0	0.1	0.5	0.7	0.5	0.5
5 and 6	3.0	2.0	0.2	1.1	0.3	0.4	0.8
7 and over	5.5	3.5	5.0	0.8	1.5	2.0	2.7
Average*	1.0	0.9	0.5	0.5	0.6	0.4	0.7

* Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

TABLE XXXIV

REASON GIVEN FOR PREFERRING CANNED MILK, PERRY AND BRISTOW

Reasons	Preference of Canned Milk for: Drinking, Cereal and Coffee	Other Uses
Low Cost	8	114
Substitute for Cream	0	122
Taste	2	13
Convenience	1	26
Storage and Reserve	3	48
Easy to Use	0	11
Recipes Call for it	0	53
Other	7	25
Total	21	412

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

important reasons given for using canned milk for these purposes were low cost and substitute for cream which together accounted for 57 percent of the reasons given (Table XXXIV). The next important reasons were recipes called for it and ease of storage or use as a reserve.

Powdered Milk

One-fourth of the households used powdered milk. These households consumed an average of 2.8 quarts equivalent per week. For the users, consumption of powdered milk varied directly with family size and income, except that consumption decreased for income group 6. Family size 1 used the smallest amount (2.3 quarts) per household and family size 7 and over used the largest amount (4.3 quarts) per household. The consumption rate was smallest in income group 2 (2.5 quarts) and greatest in income group 5 (3.4 quarts).

For all households in Perry and Bristow, consumption averaged 0.7 quarts equivalent per week (Table XXXIII). Family size appeared to have no effect on aggregate consumption except for the largest family size where consumption averaged at least three times greater than for other family sizes. Income appeared to be inversely related to powdered milk consumption. Families with annual incomes below $1000 used an average of 1.0 quarts equivalent per week. This rate decreased with additional income to 0.4 quart equivalent per week for families with incomes above $6000.

Four out of every 10 families using powdered milk used it for drinking. Low cost and fewer calories were the most important reasons given for preferring powdered milk over fresh whole milk. These reasons represented 64 percent of the reasons given for this preference (Table XXXV). When asked why they preferred powdered milk over fresh skim milk, the

TABLE XXXV

REASONS GIVEN FOR PREFERRING POWDERED MILK OVER FRESH FLUID MILK PRODUCTS FOR DRINKING, PERRY AND BRISTOW

Reasons	Preference of Powdered Milk Over	
	Whole Milk	Skim Milk
Low Cost	26	18
Fewer Calories	20	9
Storage and Reserve	8	5
Taste	3	6
Convenience	1	9
Never Use Skim	0	18
Other	14	9
Total	72	74

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

principal reasons given were; low cost, never used skim milk, convenience, and fewer calories.

About 69 percent of all powdered milk was used for purposes other than drinking. Low cost and use as a reserve were the most frequent reasons given for preferring powdered milk for these uses.

When users of powdered milk were questioned about relative nutritional values, 32 percent thought it had less protein and mineral value than whole milk, 28 percent thought it had the same value and 40 percent did not know. For the non-users, 24 percent thought powdered milk had less protein and mineral value than fresh whole milk, 18 percent thought it had the same, and 57 percent did not know. The major difference between users and non-users in this case was the percentage who did not know the nutritional value. The ratio of opinions of less nutritive value to the same nutritive value was similar for the users and the non-users.

About 65 percent of the users of powdered milk and 40 percent of the non-users had no objections to using powdered milk. Of those households expressing objections, about 44 percent objected because of taste. This was the same for both users and non-users. Other objections expressed were mixing problems, inconvenient, looks thin, and less nutritive value.

Total Milk

An estimate of total milk consumption was obtained by adding the consumption of fresh fluid milk, fresh fluid cream, buttermilk, canned milk, and powdered milk for each family size-income level classification for Perry and Bristow. On this combined basis Perry-Bristow households consumed an average of 11.5 quarts equivalent per week. (Table XXXVI).

TABLE XXXVI

AVERAGE NUMBER OF QUARTS EQUIVALENT OF ALL MILK CONSUMED WEEKLY BY SAMPLE HOUSEHOLDS,* PERRY AND BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000-2400	3 $2400-3600	4 $3600-4800	5 $4800-6000	6 Over $6000	Average**
1	3.4	4.7	4.9	8.0	5.3	--	4.7
2	6.6	7.5	10.2	6.4	10.0	8.1	7.9
3	10.3	11.1	11.3	11.9	12.3	13.7	11.9
4	31.7	17.3	12.7	15.4	13.1	18.8	16.0
5 and 6	12.0	16.9	21.3	20.7	23.4	21.9	20.9
7 and over	22.5	16.0	18.3	28.0	34.2	19.0	24.6
Average**	6.8	8.9	12.9	14.4	14.3	14.9	11.5

* Consists of fresh fluid milk, canned milk, cream, powdered milk and buttermilk.

** Average quantity consumed per household for all households in that group.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

The average consumption rates of fresh fluid milk for households in income groups and family sizes for Perry-Bristow combined were less variable than for either Perry or Bristow separately. The consumption of fresh fluid milk in Perry and Bristow combined varied directly with family size and income. However, total milk consumption per household for the lower income groups was increased considerably by the substitution of lower cost dairy products, thus supplementing the smaller amounts of fresh fluid milk available to low income groups because of financial restrictions. Canned milk and powdered milk were used in relatively large amounts by the lower income families.

Total milk consumption at 6.8 quarts equivalent was lowest for the families with less than $1000 annual income. Consumption increased with increasing income up to $4800 annual income level where 14.4 quarts equivalent were consumed. For additional income consumption leveled out or increased slightly. Income group 6 consumed the largest amount with almost 15 quarts equivalent per household.

Consumption consistently increased as family sizes were larger. For one member families, consumption averaged 4.7 quarts equivalent. For families with 7 or more members, consumption averaged 24.6 quarts equivalent per week. Per capita consumption remained about the same for all family sizes.

On the basis of estimates by type of product consumed, about 60 percent of the total milk consumption was used for drinking.

Consumption of Selected Products

Cottage Cheese

Almost two-thirds of all households (61 percent) used cottage cheese.

During the 7 day period prior to the survey, these households used an average of 1.7 twelve ounce cartons per week (Table XXXVII). For all households consumption averaged 1.0 cartons per week. Consumption of cottage cheese tended to vary directly with family size and income level. Income groups 1 and 2 used 0.4 and 0.8 carton respectively. Income groups 3, 5, and 6 consumed 1.4 cartons per household. Family size 7 and over used the largest amounts (1.5 cartons) of cottage cheese per household and family size 1 used the smallest amount (0.4 carton).

Frozen Desserts

During the week prior to the interview, the households in Perry and Bristow consumed about 1.6 quarts of frozen desserts (ice cream, mellorine, and ice milk) per household or 1.2 pints per capita.

About 41 percent of all frozen desserts consumed was ice milk. Ice cream was the next most popular and represented 36 percent of all frozen desserts consumed. Mellorine constituted 23 percent of all frozen desserts consumed.

About one-third of all households used ice cream. They used an average of 3.1 pints per household during the week prior to the survey. For all households this represented an average consumption of 1.2 pints per week. Consumption of ice cream varied directly with income with the exception of income group 4 where less than one-third of the households used ice cream. About one-third of the households in income groups 1 and 2 used ice cream. Income group 5 had the highest consumption rate (1.9 pints per household) but income group 6 had the highest percentage of households using ice cream. For family sizes, consumption generally increased for larger family sizes, but was highest (1.7 pints) for both 3 and 7 and over member families. Family size 1 used 0.4 pint per week.

TABLE XXXVII

WEEKLY CONSUMPTION OF SELECTED MILK PRODUCTS AND SUBSTITUTES BY SAMPLE HOUSEHOLDS, PERRY AND BRISTOW

Product	Users		Total Quantity	Average Consumption by Users	Average Consumption by all Households
	No.	Pct.*			
Cottage Cheese**	329	61.7	548	1.7	1.0
Ice Cream	198	37.1	623 pts.	3.1 pts.	1.2 pts.
Ice Milk	121	22.7	360 qts.	3.0 qts.	0.7 qt.
Mellorine	87	16.3	205 qts.	2.4 qts.	0.4 qt.
Butter	172	32.3	142 lbs.	0.8 lbs.	0.3 lbs.
Oleomargarine	401	75.2	480.5 lbs.	1.2 lbs.	0.9 lbs.

* Percentage of all households in the survey

** 12 Ounce cartons

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

Per capita consumption decreased for families larger than 3 members.

Mellorine was used by 16 percent of the households in Perry-Bristow. Consumption by families using mellorine averaged 2.4 quarts per week or 0.4 quart per week for all households (Table XXXVII). Consumption varied directly with family size. For income groups, consumption increased with increasing income through income group 4 and then decreased with additional income. Families in income group 4 and families consisting of 5, 6 or 7 or more members had the highest consumption rates per household.

About 23 percent of the households used an average of 3.0 quarts of ice milk during the week prior to the survey (Table XXXVII). For all households this was an average of 0.7 quarts per week. Consumption varied directly with family size with the exception of family size 2 which used more per household than 3 and 4 member families. Family size 7 and over had the highest rate of 0.9 quart per household. Family size 1 used only 0.3 quart per household. Per capita rates declined as family size increased. Consumption of ice milk increased with income to a maximum of 0.9 quart for families with incomes of $3600 to $4800. Thereafter, consumption decreased with added income to 0.7 and 0.6 quarts per household for income groups 5 and 6 respectively.

Table Spreads

During the week prior to the survey about 77 percent of the tablespreads used for all purposes consisted of oleomargarine; the remainder was butter. Butter was used by 32 percent of all households. About 28 percent of all Perry-Bristow households used both butter and oleomargarine.

The oleomargarine consuming households used an average of 1.2 pounds per week and the all household average was 0.9 pounds per week. Consumption of oleomargarine by all households varied directly with income.

Income group 1 used one-half pound of oleomargarine per week and income group 6 used almost one and one-quarter pounds per household weekly.

Family size was also directly correlated with the use of oleomargarine. Over 80 percent of all tablespreads used by families with 4 or more members was oleomargarine. Family size 7 and over consumed the highest rate (1 1/2 pounds) of oleomargarine and family size 1 used the lowest rate (1/4 pound) per household. Per capita rates declined for families of 4 or more members in size. Households in Perry-Bristow used tablespreads in the ratio of 4 pounds of oleomargarine to 1 pound of butter.

About 32 percent of the households in Perry-Bristow consumed an average of 0.8 pounds or over three quarter pounds of butter per week. Butter consumption varied directly with family size, except that family size 3 consumed a higher average quantity than 4 and 5 member families. Family size 7 and over used the largest amount per household (1.5 quarter pounds) and family size 1 used the smallest amount of butter (0.7 quarter pound) per household.

For households using butter, income groups 2 and 6 used the largest amounts of butter (1.4 quarter pounds) per household. Income groups 5 and 6 consistently consumed butter at highest rates per household. Income groups 1 and 2 used an average rate of 1.0 to 1.4 quarter pounds of butter per week and income groups 3 and 4 used only 0.7 to 0.8 quarter pounds of butter per household. However, the fact that the two lowest income groups used larger amounts per household than the medium income groups may be due to smaller family sizes and the use of Commodity Credit Corporation surplus butter, rather than being associated with low income.

Preference for Services Attached to Fresh Fluid Milk

Place of Purchase

About 55 percent of all Perry and Bristow households preferred to purchase milk at the grocery store (Table XXXVIII). The most frequent reasons given in favor of purchases at the grocery store were; convenience or opportunity to buy milk while shopping and quantity of milk used (Table XXXIX). In general, purchases at the grocery store were preferred by smaller income families, smaller size families and very large families. Over half of the households in the highest income group also preferred the grocery store primarily because of smaller (and presumably more irregular) purchases of fresh fluid milk for home consumption.

Over one-fourth (28 percent) of all households preferred to receive their milk by route delivery (Table XXXVIII). Those preferring route delivery were the higher income groups and the medium family sizes. The biggest reason for preferring route delivery was convenience, which represented 76 percent of all reasons given by those who prefer route delivery (Table XXXIX). Freshness and taste were also important reasons.

The remaining households using milk (10 percent) preferred to get their milk from farmers and other sources. Practically all households were using the places of purchase that they preferred.

Consumers on route delivery were asked at what price reduction at the grocery store would they change from the route to the store. About 44 percent would not change for any price reduction; these were small family sizes and about the same proportion of households in each income group. About 56 percent of all households would change places of purchase with some price reduction at the store. About 15 percent said they would

TABLE XXXVIII

CONSUMER PREFERENCE FOR PLACE OF PURCHASE OF FRESH FLUID MILK, PERRY AND BRISTOW

Family Size	Income Groups 1 Under $1000	2 $1000 2400	3 $2400 3600	4 $3600 4800	5 $4800 6000	6 Over $6000	Total	1/	2/
Prefer Store Purchase									
1	29	10	4	0	2	--	45	15.3	52.3
2	15	38	18	18	13	9	111	37.6	62.4
3	3	12	15	10	9	11	60	20.3	54.5
4	2	3	6	10	4	5	30	10.2	40.0
5 and 6	0	6	8	11	7	4	36	12.2	55.4
7 and over	2	2	3	5	1	0	13	4.4	68.4
Total	51	71	54	54	36	29	295		
1/	16.9	24.1	18.3	18.3	12.2	9.8		100	
2/	49.5	62.8	62.1	55.1	46.2	53.7			55.3
Prefer Home Delivery									
1	14	3	4	1	0	--	22	13.9	24.4
2	2	13	6	3	6	6	36	23.8	20.2
3	2	7	4	8	9	2	32	21.2	29.1
4	1	0	0	11	14	10	36	23.8	48.0
5 and 6	0	0	4	9	3	3	19	12.6	29.2
7 and over	0	0	1	0	3	2	6	4.0	31.6
Total	19	23	19	32	35	23	151		
1/	12.6	15.2	12.6	21.2	23.2	15.2		100	
2/	18.4	20.4	21.8	32.7	44.9	42.6			28.2

1/ Percentage of the total number of households preferring to purchase milk at that place of purchase.

2/ Percentage of the total number of households in this income group or family size.

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

TABLE XXXIX

CONSUMERS REASONS FOR PREFERENCE FOR PLACE OF PURCHASE OF FRESH FLUID MILK, PERRY AND BRISTOW

Reasons	Delivery	Store
Low Cost	1	6
Convenience	126	124
Taste, Freshness or Quality	22	5
Storage Facility	1	0
Quantity Used	7	102
Brand, Container or Service	21	4
Unsatisfactory Delivery Time	0	18
At Store Anyway	0	69
Habit	4	9
Other	12	47

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

change to the store for a 2 cent per quart further reduction at the store, 15 percent would change for a 3 cent reduction, 6 percent for a 4 cent reduction, and 13 percent for a 5 cent reduction per quart. It would take a reduction greater than 5 cents per quart to interest 8 percent of the consumers in changing from route to store purchase. Cumulatively, 30 percent of those now purchasing milk on route delivery said they would switch to the store for a reduction in the store price of 3 cents per quart and a total of 48 percent said they would switch if the store price were reduced 4 cents per quart.

Frequency of Purchase

About 32 percent of the households in Perry-Bristow preferred to get milk three times a week because of convenience, quantity used, taste, freshness and quality (Table XL). These households were mostly medium-high income and medium-large families. About 23 percent preferred to get milk daily because of taste, freshness, quantity used, convenience, and storage facility. Preference for daily purchase increased with family size and income with the exception of income group 5 which had a low preference for daily purchase and a high preference for purchase three times a week.

Purchasing milk every other day was preferred by about 12 percent because of convenience and the quantity used by these medium income and larger size households. The 11 percent, consisting of small families and low income groups, preferred milk twice a week because of quantity used as did the 7 percent who preferred milk once a week because of quantity used. The remaining households preferred times of purchase other than those above.

TABLE XL

REASONS FOR PREFERENCE FOR FREQUENCY OF PURCHASE OF FRESH FLUID MILK, PERRY AND BRISTOW

Reasons	Daily	Every Other Day	Three Times a Week	Twice a Week	Once a Week
Low Cost	0	0	1	0	0
Convenience	25	23	72	15	8
Taste, Freshness or Quality	64	11	19	1	0
Storage Facilities	19	3	12	4	0
Quantity Used	38	29	77	40	32
Brand, Container or Service	0	0	6	0	0
At Store Anyway	9	2	4	6	0
Habit	7	1	12	0	1
Other	4	3	0	2	1
Respondents	122	65	172	58	39
Percentage of all Households	22.8	12.2	32.2	10.8	7.3

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

Type of Container

Glass containers were used by 96.3 percent of the households in Perry-Bristow purchasing milk on the delivery route; the remainder were paper containers. When milk was purchased at the store 91 percent of the consumers used paper containers.

When asked what type containers they preferred if their milk were delivered, 47 percent of all households preferred glass containers, 38.7 percent preferred paper cartons and 7 percent had no particular preference (Table XLI). If milk were delivered glass containers would be preferred because of taste, keeping quality, more sanitary, more convenient, and visual inspection purposes. There was more preference for glass among the higher income groups and the medium and smaller size families. Paper cartons were preferred because the interviewers did not like to handle bottles and believed that paper cartons were more convenient and more sanitary than glass containers.

If milk were not delivered, 57 percent of all households in Perry-Bristow would prefer paper cartons because of no bottles to handle, more convenient and more sanitary (Table XLI). Glass containers would be preferred by 30 percent of the households if milk were not delivered because taste, keeping quality, more sanitary, convenience, and visual inspection.

Size of Container

If milk were not delivered, 46 percent of all households would prefer one half gallon containers (Table XLII). They were mostly larger size families and medium and high income groups. Half gallon containers were preferred because of amount used (43 percent of all reasons given for half gallon preference) convenience (23 percent) and storage facility (22 percent).

TABLE XLI

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR TYPE OF CONTAINER, PERRY AND BRISTOW

Reasons	When Milk is Delivered		When Milk is Not Delivered	
	Paper Carton	Glass Bottle	Paper Carton	Glass Bottle
Low Cost	0	2	0	0
Convenience	35	30	59	23
Taste, Keeps Better	5	109	6	61
Storage Facilities	8	2	7	4
Amount Used	3	2	0	1
More Sanitary	22	59	20	43
No Bottles to Handle	172	0	263	0
Visual Inspection	0	26	0	21
Habit	3	20	4	10
Other	3	21	10	8
Respondents	207	252	305	162
Percentage of all Households	38.7	47.1	57.0	30.3

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

TABLE XLII

REASONS GIVEN BY CONSUMERS FOR PREFERENCE FOR CONTAINER SIZE WHEN MILK IS NOT DELIVERED, PERRY AND BRISTOW

Reasons	Quart	Half Gallon	Gallon
Low Cost	0	19	1
Convenience	69	75	1
Taste, Keep Better	15	4	0
Storage Facilities	26	70	2
Amount Used	141	138	7
Other	3	8	1
Habit	8	6	0
Respondents	233	246	10
Percentage of all Households	43.5	46.0	1.8

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April, 1956 respectively).

The quart size container was preferred by 43.5 percent of all households if milk were not delivered. Preference for quart containers was highest for households in income group 1 and decreased with additional income except that the highest income group had a higher preference for quart containers than income groups 3, 4, or 5. For family sizes, preference for quart containers decreased with family size. About 76 percent of family size 1 preferred quart containers and only 11 percent of the households in family size 7 and over preferred quarts. Reasons given for the quart containers preferences were: amount used (54 percent of all reasons given for quart preference); convenience (26 percent); and storage facility (10 percent).

If milk were delivered the preferences for quart containers and half gallon containers would be reversed. The container size most preferred for milk on the delivery route was the quart (51.3 percent of all households). The half gallon container was preferred by 42.5 percent of the households. Preference for half gallon containers varied directly with family size with the exception of family size 7 and over, where gallon container preference increased considerably and half gallon preference decreased. By income groups, the preference for half gallon containers increased with increasing income through $4800 to $6000. For the highest income group half gallon preference decreased, partially because of that group's high preference for quart containers. Preference for quart size containers when milk was delivered varied inversely with family size and income except for the highest income groups. The reasons given for preferring the different sizes were about the same for store purchases or for purchases from delivery routes.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study is the final stage of a two year marketing research project on consumer preferences for dairy products and services in Oklahoma milk markets. It is based on a study of the cities of Perry and Bristow, Oklahoma. The Perry survey was conducted during September of 1955 and the Bristow schedules were taken during April, 1956.

The preferences and consumption rates of consumers in Perry and Bristow were quite similar. The major significant difference in consumption of milk products in the two cities was in the consumption of frozen desserts. This difference was accounted for primarily by the differences in the seasons of the year when the surveys were conducted.

About 93 percent of the households in the combined market (96 percent of all Perry households and 91 percent of all Bristow households) used fresh fluid milk. The consumption of all families averaged 8.2 quarts per week.

For all households, consumption of fresh fluid milk varied directly with family size and income. Practically all households used fresh fluid milk except those in the lowest income group and family size 1 where limited income and older age of consumers were the factors limiting the use of fresh milk. One member families constituted 57 percent of the families with incomes of $1000 or less.

About 66 percent of all milk consumers (59 percent in Perry and 73 percent in Bristow) said they would not consume less milk, even if the

price increased by 9 cents per quart. For lower milk prices, about 72 percent of all households in the small city market (79 percent in Perry and 76 percent in Bristow) said they would not buy additional milk even if the price were reduced by 9 cents a quart.

Over 90 percent of the households were satisfied with the richness of the milk they were using. Most of the households who were not satisfield (8.2 percent) were in the lower income groups. These households preferred more butterfat in their milk and about half of them were willing to pay extra for it. About 56 percent of all the interviewees in Perry and Bristow believed that whole milk was fattening. Practically all of the interviewees who felt that fresh whole milk was fattening were satisfied with the present richness of milk. About 63 percent of the respondents thought that the butterfat content should be marked on the outside of the container. The remainder either did not want or were indifferent as to this procedure.

Fresh fluid cream was used by only 14 percent of the households in Perry and Bristow. The consumption of cream tended to increase as family incomes were higher.

Over one-third of the families in Perry and Bristow used buttermilk. Slightly less than 2 quarts per household were used during the week prior to the interview by these households. Neither income nor size of family appeared to influence buttermilk consumption. Only 6 percent of all the households used chocolate milk.

Over half of the households (56 percent in Perry and 59 percent in Bristow) used canned milk. For the users, consumption increased with family size. Income did not appear to influence the consumption rate, except that the highest income group consumed the largest amount per household. For all households, consumption increased with family size,

but decreased with income.

About one-fourth of all the households (24 percent in Perry and 27 percent in Bristow) used powdered milk. These households consumed an average of 2.8 quarts equivalent per week and consumption varied directly with family size and with income up to $6,000 per year. For all households income appeared to be inversely related to consumption. Consumption rates were similar for family sizes 1 through 6 but was higher for 7 and over member families.

An estimate of total milk consumption was obtained by adding the consumption of fresh fluid milk, fresh fluid cream, buttermilk, canned milk, and powdered milk for each family size-income level classification for Perry and Bristow households. On this basis all households consumed an average of 11.5 quarts equivalent per week. Consumption ranged from 11.1 quarts per household in Perry to 11.9 quarts in Bristow. Total milk consumption varied directly with family size and income. About 60 percent of the total milk consumption was used for drinking.

Almost two-thirds of all households used cottage cheese. Consumption of cottage cheese averaged 1.0 twelve ounce carton per week and varied directly with family size and income.

Perry households consumed about 25 percent more frozen desserts than Bristow households because of differences in the season of the year when the respective surveys were conducted. Frozen desserts in order of quantities used were: ice milk (41 percent of all frozen dessert consumed), ice cream (36 percent), and mellorine (23 percent). About one-third of the households used ice cream. Consumption of ice cream varied directly with income and family size and averaged 1.2 pints per week. About one-fourth of the households consumed ice milk and the average

weekly consumption was 0.7 quarts. Mellorine was used by 16 percent of the households and consumption averaged 0.4 quarts per week for all households. The consumption of both ice milk and mellorine increased with family size and income except that mellorine consumption decreased for income groups 5 and 6.

Approximately 77 percent of all tablespreads used for all purposes was oleomargarine; the remainder was butter. Oleomargarine was used by 75 percent of all households and butter was used by 32 percent. About 28 percent of all households used both butter and oleomargarine. Consumption of oleomargarine averaged 0.9 pounds per week and varied directly with family size and income. Consumption of butter averaged 0.3 pounds per week. Butter consumption varied directly with family size and was greatest for both the higher and the lower income groups.

About 55 percent of all households (65.3 percent in Perry and 46.5 percent in Bristow) preferred to purchase milk at the grocery store. Convenience was the most frequent reason given for store purchase. In general, purchases at the grocery store were preferred by smaller income families, smaller size families and very large families.

Over one-fourth of all households (23 percent in Perry and 33 percent in Bristow) preferred to receive their milk by route delivery. These households were the higher income groups and the medium size families. Convenience was the most frequent reason given for preferring route delivery. About 48 percent of all households on delivery route would prefer the store as a place of purchase for a 5 cent per quart price reduction at the store.

About one-third of the consumers (30 percent in Perry and 40 percent in Bristow) preferred to get milk three times a week while 25 percent

preferred to get milk daily. Those households preferring three times a week frequency of purchase were mostly medium to large families and medium income groups. The most frequent reasons given for time of purchase were convenience and quantity used. There was direct correlation between small family size and less frequent purchases.

If milk were delivered, 47 percent of all households would prefer glass containers, 39 percent would prefer paper cartons and 7 percent would have no particular preference. The preference for glass containers was greatest among the higher income groups and the medium and smaller size families. Taste and keeping qualities were the most frequent reasons given for preferring glass containers.

If milk were not delivered to the home, the preferences for glass and paper containers were reversed. Preference for paper containers increased generally with family size. The preference for paper was similar in all income groups except the lowest where the smallest proportion of households would prefer paper. No bottles to handle and convenience were the reasons paper cartons were preferred.

If milk were delivered about half the households would prefer the quart size container. The half gallon container would be preferred by 43 percent of all households. Also, there was more preference for gallon containers on delivery routes than at stores. This was caused primarily by the preference of very large families for gallons on the route and half gallons at the store. Reasons given for preferring particular container sizes were about the same for route delivery as for store purchases.

If milk were not delivered, preference of all households for the half gallon container and the quart container were about equal. Half gallon preference varied directly with family size and income, except the preference decreased for income group 6. Quart preference varied inversely with family size and income, except for income group 6 where the quart container was preferred. Quantity used was the most frequent reason given for the particular container size preferred.

Generally, consumers in the small city markets were satisfied with the services attached to fluid milk products which were available. The types and amounts of services desired by individual families were usually related to size of income and the level of milk consumption within the households. The level of milk consumption, in turn, was directly related to the size of the family and the level of income. Convenience either in the handling of milk or in the use of milk was one of the most important reasons given for the individual preferences for services. The medium and large income families preferred and purchased more services than the smaller income families.

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APPENDIX A

Call
( )
( )
( )

Date and Hour
_____
_____
_____

STILLWATER, OKLAHOMA
STUDY OF CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES
CONFIDENTIAL
(Perry)

Schedule No._____
Interviewer_____

Note: List every person who resides in this dwelling unit

Family Relationship (A)	Sex	Age*	Education Attained (Years)	Occupation (s)	Glasses milk drank Daily	Est. Ern. Last 12 months

* If under one year enter 0.

Do You:

( ) Use fresh milk
( ) Use powdered milk
( ) (a) If not, have you ever tried it?
( ) Used canned milk

(A)
1. Head
2. Spouse
3. Son or Daughter (Inc. in-laws)
4. Father or Mother (Inc. in-laws)
5. Other relatives
6. Roomer or hired help.

(B)
1. Under $1000
2. $1000 to 2400
3. $2400 to 3600
4. $3600 to 4800
5. $4800 to 6000
6. Over $6000

THE FOLLOWING LIST TO BE ASKED IF THEY ARE USERS OF FLUID MILK

II. A. Do you get fresh fluid milk from (1) Delivery route (2) Grocery store (3) Farmer (4) Other - specify_____ ( )
B. Which of these methods do you prefer? ( )
C. Why do you prefer this method? ( )

III. A. (If route delivery) How much of a price reduction at the store would it taketo get you to buy from the store? (0) would not change (1) 1 cent/qt. (2) 2 cent/qt. (3) 3 cent/qt. (4) 4 cent/qt. (5) 5 cent/qt. (6) More than 5 cent/qt. ( )

IV. A. How often do you get fresh fluid milk? (1) daily (2) every other day (3) three times a week (4) twice a week (5) once a week (6) Other_____ ( )
B. How often do you prefer to get fresh fluid milk? ( )
C. Why do you prefer this? ( )

V. A. In what type of container do you get your milk (1) paper (2) glass (3) no choice ( )
B. If your milk were delivered, what type of container would you actually prefer? ( )
C. Why would you prefer this? ( )

VI. A. If your milk were not delivered, what type of container would you prefer? (1) paper (2) glass (3) no choice ( )
B. Why would you prefer this type? ( )

VII. A. In what size container do you get your milk? (1) quart (2) 1/2 gallon (3) gallon (4) other _____ ( )
B. If your milk were delivered what size container would you actually prefer? (1) quart (2) 1/2 gallon (3) gallon (4) other _____ ( )
C. Why would you prefer this size? ( )

VIII. A. If your milk were not delivered, what size of container would you prefer? (1) quart (2) 1/2 gallon (3) gallon (4) other_____ ( )
B. Why would you prefer this size? ( )

****

CODE FOR REASONS

1. Low Cost
2. Convenience
3. Taste-freshness or quality
4. Storage facility
5. Quantity used
6. Brand, container or service
7. Unsatisfactory delivery time
8. At the store anyway
9. Habit
0. Other

1. Low Cost
2. Convenience - easier to handle
3. Taste - keeps better
4. Storage facility
5. Amount used
6. More sanitary
7. No bottles to handle
8. Visual inspection
9. Habit
0. Other
X. Wax and leakage problems

IX. A. How many quarts (equivalent) of milk do you use per week ( )

B. How many quarts are: Homogenized ( )
Past. Whole ( )
Past. Skim ( )
Raw Milk ( )

C. What percent of this weekly supply of milk is used for drinking? ( )

X. A. How much would the price of fresh fluid milk have to go UP up before you would use less fresh milk? (For example, at some higher price you might substitute powdered milk, canned milk or other products for some of the fresh milk you now use)

9cents/qt
8
7
6
5
4
3
2
1

B. How much would the price of fresh milk have to go down before you would use more fresh milk?

Present Price
1
2
3
4
5
6
7
8
Down 9 cents/qt

XI. A. Do you buy cream regularly? ( )

(a) Is it (1) whipping cream (2) coffee cream or (3) half and half ( )

(b) How many half pints do you use per week ( )

(c) What percent of this weekly supply is used for drinking ( )

B. Do you obtain any of your cream supply from the top of your milk supply? (i.e. by pouring, skimming or siphoning it off?) ( )

(a) If yes, do you pour it off of every bottle or if not every bottle, about how many bottles out of every 12? ( )

XII. A. Are you satisfied with the richness (the amount of cream or butterfat) of the milk you are now buying? ( )

(a) If not satisfied, do you prefer (1) more or (2) less butterfat in your milk. ( )

(b) If more, would you be willing to pay more for this additional butterfat? ( )

B. Would you approve a state law which would require that your milk be made richer? ( )

(a) If yes--even if the price of milk had to be increased? ( )

C. If the milk were made richer would you use (1) more milk (2) about the same as now or (3) less milk ( )

D. Do you believe that whole milk is fattening? ( )
(1) yes (0) no (-) don't know (2) qualified

XIII. A. There is a state law which regulates the minimum percent of butterfat in milk sold but it does not require the labeling of the percent of butterfat in the milk. Would you like to have the choice of buying milk where the butterfat content was marked on the bottle cap or on the carton? ( )

XIV. How much of the following products do you usually use in this household during one week?

	Quantity	Percentage used for Drinking or table	Comments on Quality
Chocolate milk (qts)	_____	_____	_____
Buttermilk (qts.)	_____	_____	_____
Cottage Cheese (12 oz)	_____	_____	_____
Ice Cream (pts)	_____	_____	_____
Mellorine (qts)	_____	_____	_____
Butter (1/4 lb)	_____	_____	_____
Oleo (1/4 lb)	_____	_____	_____
Ice Milk (qts)	_____	_____	_____

XV. A. How much powdered milk do you use each week (qt. equiv.) ( )
B. What percent of this was used for drinking ( )
(a) If used for drinking, do you mix it with fresh fluid milk? If mixed what ratio?_____ ( )
(b) Why do you use powdered milk rather than fresh whole milk for drinking? ( )
(c) Why do you use powdered milk rather than fresh skim milk for drinking? ( )
C. Do you believe that powdered milk has (1) more (2) about the same (3) less (4) don't know protein and mineral value as fresh whole milk? ( )
D. If powdered milk is used for other than drinking, why do you prefer powdered milk for these uses? ( )
E. What objections, if any, do you have to using powdered milk? (2) inconvenient (3) taste (4) mixing problems (5) no cream or butterfat (6) less nutritive value (7) looks thin like water (9) none (0) other_____ ( )

XVI. A. How much canned (evaporated) milk do you use each week? (14 oz.) ( )
B. How much milnot do you use each week? ( )
C. What percent of all canned milk is used for drinking? ( )
(a) Why do you use canned milk for drinking? ( )
D. What percent of all canned milk is used for cereal and coffee?_____ ( )
(a) Why do you prefer canned milk to this use? ( )
E. If other uses, why do you prefer the canned milk for these uses? ( )

****

CODE FOR REASONS

1. Low cost
2. Convenience
3. Taste
4. Storage and reserve
5. Diet - fewer calories
6. Never used skim
7. Easy to use
8. Substitute for cream
9. Recipes call for it
0. Other
X. Baby formula

Call Date and Hour

( ) _____
( ) _____
( ) _____

STILLWATER, OKLAHOMA
STUDY OF CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES
CONFIDENTIAL
(Bristow)

Schedule No._____
Interviewer_____

NOTE: List every person who has meals in this household unit.

Family Relationship (A)	Sex	Age*	Education Attained (Years)	Occupation (s)	Glasses milk drank Daily	Est. Ern. Last 12 Months

DO YOU

( ) Use Fresh milk
( ) Use Powdered milk
( ) (a) If not, have you ever tried it?
( ) Used canned milk
( ) Have automobile?
( ) Have radio?
( ) Have Television?
( ) Have library card?
( ) Read News papers?
( ) No. dailies
( ) Read magazines?
( ) No. monthly
( ) Attend Church?
( ) No. monthly
( ) Attend social club meetings?
( ) No. monthly

* If under one year enter 0

(A) 1. Head
2. Spouse
3. Son and Daughter (Inc. inlaws)
4. Father or Mother (Inc. in-laws)
5. Other relatives
6. Roomer or hired help

(B) 1. Under $1000
2. $1000 to 2400
3. $2400 to 3600
4. $3600 to 4800
5. $4800 to 6000
6. Over $6000

II. A. Do you get fresh fluid milk from (1) Delivery route (2) Grocery store (3) Farmer (4) Other - Specify_____ ( )
B. Which of these methods do you prefer? ( )
C. Why do you prefer this method? ( )

III. A. (If route delivery) How much of a price reduction at the store would it take to get you to buy from the store? (0) would not change (1) 1 cent/qt. (2) 2 cent/qt. (3) 3 cent/qt. (4) 4 cent/qt. (5) 5 cent/qt. (6) More than 5 cent/qt. ( )

IV. A. How often do you get fresh fluid milk? (1) daily (2) every other day (3) three times a week (4) twice a week (5) once a week (6) other (specify)_____ ( )
B. How often do you prefer to get fresh fluid milk? ( )
C. Why do you prefer this? ( )

V. A. In what type of container do you get your milk (1) paper (2) glass (3) no choice ( )
B. If your milk were delivered, what type of container would you actually prefer? ( )
C. Why would you prefer this? ( )

VI. A. If your milk were not delivered, what type of container would you prefer? (1) paper (2) glass (3) no choice ( )
B. Why would you prefer this type? ( )

VII. A. In what size container do you get your milk? (1) quart (2) 1/2 gallon (3) gal. (4) other (specify)_____ ( )
B. If your milk were delivered what size container would you actually prefer? (1) quart (2) 1/2 gallon (3) gal. (4) other _____ ( )
C. Why would you prefer this size? ( )

VIII. A. If your milk were not delivered, what size of container would you prefer? (1) quart (2) 1/2 gallon (4) gal. (5) other ( )
B. Why would you prefer this size? ( )

CODE FOR REASONS

1. Low Cost	1. Low Cost
2. Convenience	2. Convenience - easierto handle
3. Taste- freshness or quality	3. Taste - keeps better
4. Storage facility	4. Storage facility
5. Quantity used	5. Amount used
6. Brand, container or service	6. More sanitary
7. Unsatisfactory delivery time	7. No bottles to handle
8. At the store anyway	8. Visual inspection
9. Habit	9. Habit
0. Other	0. Other
	X. Wax and leakage problems

IX. A. How many quarts (equivalent) of milk did you use last 7 days ( )

B. How many quarts are: Homogenized ( )
Past. Whole ( )
Past. Skim ( )
Raw Milk ( )

C. Brand_____

D. What percent of this weekly supply of milk is used for drinking?_____ ( )

X. A. How much would the price of fresh fluid milk have to go up before you would use less fresh milk? (for example, at what higher price of fresh milk would you substitute powdered milk, canned milk or other products for some of the fresh milk you now use.

B. How much would the price of fresh milk have to go down before you would use more fresh milk?

UP cents/qt.
9
8
7
6
5
4
3
2
1
Present Price
1
2
3
4
5
6
7
8
9
DOWN cents/qt.

XI. A. Do you buy cream regularly? ( )
(a) Is it (1) whipping cream (2) coffee cream or (3) half and half ( )
(b) How many half pints do you use per week? ( )
(c) What percent of this weekly supply is used for drinking? ( )

B. Do you obtain any of your cream supply from the top of your milk supply? (i.e. by pouring, skimming or siphoning it off?) ( )
(a) If yes, do you pour it off of every bottle or if not every bottle, about how many bottles out of every 12? ( )

XII. A. Are you satisfied with the richness (the amount of cream or butterfat) of the milk you are now buying? ( )
(a) If not satisfied, do you prefer (1) more or (2) less butterfat in your milk. ( )
(b) If more, would you be willing to pay more for this additional butterfat? ( )

B. Would you vote yes or no for a state law which would require that your milk be made richer? Why_____ ( )

C. If the milk were made richer would you use (1) more milk (2) about the same as now or (3) less milk? ( )

D. Do you believe that whole milk is fattening?
(1) yes (0) No (-) don't know (2) qualified ( )

XIII. A. There is a state law which regulates the minimum percent of butterfat in milk sold but it does not require the labeling of the percent of butterfat in the milk. Would you like to have the choice of buying milk where the butterfat content was marked on the bottle cap or on the carton? ( )

B. Would you (a) simply like to know or (b) do you think you might try different levels of richness? (Circle one) a b

XIV. A. How much of the following products did you use in this household during the past 7 days?

	Percent used for Drinking or Table	7 days	Quantity Usually	Code
Chocolate Milk (qts)	_____	_____	_____	_____
Buttermilk (qts)	_____	_____	_____	_____
Cottage Cheese (12 oz)		_____	_____	_____
Mellorine		_____	_____	_____
Ice Milk		_____	_____	_____
Ice Cream		_____	_____	_____
Oleo	_____	_____	_____	_____
Butter	_____	_____	_____	_____

XV. A. How much powdered milk did you use last 7 days (qt. equiv) ( )

B. What percent of this was used for drinking_____ ( )

(a) If used for drinking, do you mix it with fresh fluid milk? If mixed what ratio? _____ ( )

(b) Why do you use powdered milk rather than fresh whole milk for drinking? ( )

(c) Why do you use powdered milk rather than fresh skim milk for drinking? ( )

C. Do you believe that powdered milk has (1) more (2) about the same (3) less (4) don't know protein and mineral value as fresh whole milk? ( )

D. If powdered milk is used for other than drinking, why do you prefer powdered milk for these uses? ( )

E. What objections, if any, do you have to using powdered milk? (2) inconvenient (3) taste (4) mixing problems (5) no cream or butterfat (6) less nutritive value (7) looks thin like water (9) none (0) other_____ ( )

XVI. A. How much canned (evaporated) milk did you use last 7 days (14 oz. can) ( )

B. How much milnot did you use last 7 days? ( )

C. What percent of all canned milk is used for drinking?___ ( )

(a) Why do you use canned milk for drinking? ( )

D. What percent of all canned milk is used for cereal and coffee?_____ ( )

E. If other uses, why do you prefer the canned milk for these uses? ( )

CODE FOR REASONS

1. Low cost
2. Convenience
3. Taste
4. Storage and reserve
5. Diet - fewer calories
6. Never used skim
7. Easy to use
8. Substitute for cream
9. Recipes call for it
0. Other
X. Baby formula

APPENDIX B

APPENDIX TABLE 1

CONSUMERS IN PERRY SURVEY ACCORDING TO FAMILY SIZE AND INCOME GROUP

Family Size	Income Groups* 1	2	3	4	5	6	Total
1	28	8	4	1	0	0	41
2	9	30	18	14	10	7	88
3	1	12	6	10	10	8	47
4	1	2	3	10	9	10	35
5 and 6	0	3	10	10	6	3	32
7 and over	1	1	3	2	1	0	8
Total	40	56	44	47	36	28	251

*1 = Under $1,000
2 = $1000 to $2400
3 = $2400 to $3600
4 = $3600 to $4800
5 = $4800 to $6000
6 = Over $6000

Source: Survey data from consumers in Perry (September, 1955).

APPENDIX TABLE II

CONSUMERS IN BRISTOW SURVEY ACCORDING TO FAMILY SIZE AND INCOME GROUP

Family Size	Income Groups* 1	2	3	4	5	6	Total
1	31	6	4	1	3	0	45
2	22	34	5	9	11	9	90
3	6	11	18	11	11	6	63
4	2	1	9	13	10	5	40
5 and 6	1	4	6	14	4	4	33
7 and over	1	1	1	3	3	2	11
Total	63	57	43	51	42	26	282

*1= Under $1000
2= $1000-$2400
3= $2400 to $3600
4= $3600 to $4800
5= $4800 to $6000
6= Over $6000

Source: Survey data from consumers in Bristow (April, 1956).

APPENDIX TABLE III

CONSUMERS IN PERRY AND BRISTOW SURVEYS COMBINED ACCORDING TO FAMILY SIZE AND INCOME GROUP

Family Size	Income Groups* 1	2	3	4	5	6	Total
1	59	14	8	2	3	0	86
2	31	64	23	23	21	16	178
3	7	23	24	21	21	14	110
4	3	3	12	23	19	15	75
5 and 6	1	7	16	24	10	7	65
7 and over	2	2	4	5	4	2	19
Total	103	113	87	98	78	54	533

*1 = Under $1000
2 = $1000 to $2400
3 = $2400 to $3600
4 = $3600 to $4800
5 = $4800 to $6000
6 = Over $6000

Source: Survey data from consumers in Perry and Bristow (September, 1955 and April 1956 respectively).

VITA

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Master of Science

Thesis: A STUDY OF CONSUMER PREFERENCES FOR DAIRY PRODUCTS AND SERVICES IN PERRY AND BRISTOW, OKLAHOMA

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