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# PROCUREMENT PRACTICES OF COMMERCIAL EGG USERS AND HANDLERS IN JOHNSTOWN AND WILLIAMSPORT, PENNSYLVANIA

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# Procurement Practices of Commercial Egg Users and Handlers in Johnstown and Williamsport, Pennsylvania

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## Purpose of Study

The objective of this study is limited to exploring some demands--in terms of services provided by the supplier--that will be put on the egg marketing system of the future. To reach this objective, owners or management personnel of retail and wholesale grocery outlets, restaurants, bakeries, dairies, plant cafeterias, hospitals, and schools were interviewed in Williamsport and Johnstown. Information was obtained on the nature of the present egg procurement policies, with emphasis placed on the reasons for these methods.

The information on sources of eggs and the reasons for present buying methods then were used as a basis for projecting probable egg procurement policies of the future. In using this information, consideration was given to expected future trends in retail and production operations.

## Expected Relationships

The following hypotheses as to buyer-seller relationships were formulated to help guide the study.

1. The major source of supply for the Williamsport area is the local producer. This is explained in terms of the area being self-sufficient in egg production.
2. The major source of supply for the Johnstown area is the middleman (wholesaler or assembler-distributor). This

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is explained in terms of the area being deficient in egg production.

3. The major factor determining the buyer's satisfaction with his source of supply is the quality of the product received.

4. Little importance is attached to the extra service of cartoning, replacing eggs which are not sold in one week, free advertising, and similar services. The buyer is not accustomed to these services, therefore, he does not consider them important.

5. In the retail grocery operation, eggs are a small portion of the total business, thus decreasing the operator's concern about eggs.

## Methodology

### Areas sampled

The populations of the areas included in the study were 49,869 and 110,475 for Williamsport and Johnstown, respectively.2/

The reasons for selecting the two sample areas were: 1) Lycoming County, in which Williamsport is located, is apparently a self-sufficient egg producing area while Cambria County is a deficit egg producing area. This makes possible a comparison of differences in egg procurement systems that may exist between an apparent deficit area and an apparent self-sufficient area. 2) Both communities are considered rather typical of the medium size market areas found in Pennsylvania.

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2/U.S. Bureau of Census, 1960 Census of Population, Preliminary Reports.

Selection of sample

In Williamsport a complete enumeration was made of independent retail and wholesale grocers, restaurants, dairies, bakeries, plant cafeterias, schools, and hospitals. A 20 per cent sample of bars and taverns was taken. Because of the large number of bars and taverns and the small quantity of eggs handled by them, a 20 per cent sample was assumed adequate to represent this segment of the market. The same schedule was used for bars or taverns and restaurants. A total of 153 schedules was taken--81 retail grocery stores, 52 restaurants (including bars and taverns), 8 bakeries, 4 dairies, 3 plant cafeterias, 2 wholesalers, 2 hospitals, and 1 school system.

In Johnstown, a 100 per cent enumeration was made of wholesale grocers, restaurants, bakeries, plant cafeterias, schools, and hospitals. Once again, because of the large number of bars and taverns and small quantity of eggs they handled, a 20 per cent sample was taken. Also, due to the large number of retail grocery stores (over 200), a 50 per cent sample was taken. It was assumed this would be an adequate representation of various channels used for eggs. None of the dairies serving the area handled eggs. A total of 203 schedules was taken--103 retail grocery stores, 81 restaurants (including bars and taverns), 9 bakeries, 4 wholesale grocers, 3 hospitals, 2 school systems and 1 plant cafeteria.

A table of random numbers was used to select the sample of retail grocery stores in Johnstown and the taverns and bars in Williamsport and Johnstown. Each establishment was given a number and plotted on a city map. Then, using the table of random numbers, 50 per cent of the

retail stores in each borough or city in the Johnstown area were selected. The same procedure was followed in selecting the bar and tavern sample except a 20 per cent sample was chosen in this case. Additional numbers were taken to be used as substitutes if schedules could not be obtained from the original sample.

Data collection

Information was obtained by direct interviews with owners or managerial personnel of independent retail grocery stores, wholesale grocers, restaurants, bakeries, dairies, plant cafeterias, hospitals, and schools. The senior author interviewed all retail and wholesale grocers, dairies, hospitals, and schools, and another interviewer obtained the information for restaurants, bakeries, and plant cafeterias.

Methods of analysis

The purposes of this study necessitated sorting the outlets in the sample into three groups as follows: (1) area, (2) type of supplier and (3) size of store in the case of retail grocery stores. Averages and proportions were then computed where applicable. Where a test of significance was appropriate the chi-square technique was used. The five per cent level of confidence was chosen as the one at which the relationships being tested were accepted as significant.

In the analysis, bars and taverns were included with the restaurants in both Williamsport and Johnstown.

## Survey Findings

### Total supply of eggs

The total volume of eggs moving through Williamsport and Johnstown in 1960 was estimated to be 1,877,599 dozen and 2,992,031 dozen, respectively, Table 1. Because of the high standard deviation obtained from the volume data of retail stores in Johnstown--a standard deviation of 43.24 dozen around a mean of 38.42 dozen--total volume in Johnstown was estimated by using the estimated 1960 national average per capita consumption.[3] Data were used from another study presently being conducted to estimate the volume of eggs handled by chain stores, independent stores, and the volume purchased directly from producers.[4]

The above study indicated that consumers in Johnstown purchased 51 per cent of their eggs from producers, 14 per cent from independent retail grocers, and 35 per cent from chain stores. On the basis of these percentages and the estimated national per capita consumption, the volume of eggs handled in Johnstown by chain and independent grocery stores and the volume sold directly by producers in both Johnstown and Williamsport was estimated. The volume of eggs handled by all other sources was computed from the volume data obtained in the study.

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3/U.S. Department of Agriculture, The Poultry and Egg Situation, Agricultural Marketing Service, November 1960.

4/Harry Krueckeberg, unpublished data, Pennsylvania State University.

Table 1. Estimated Volume and Proportion of Eggs Handled by Various Sources in Williamsport and Johnstown, 1960.

| Source | Williamsport | | Johnstown | |
|---|---|---|---|---|
| | (dozen) | (per cent) | (dozen) | (per cent) |
| Independent retail stores | 221,040 | 11.8 | 352,433 | 11.8 |
| Chain retail stores | 390,000 | 20.8 | 881,081 | 29.4 |
| Restaurants | 76,700 | 4.1 | 101,192 | 3.4 |
| Bars and taverns | 52,260 | 2.8 | 129,220 | 4.3 |
| Bakeries | 377,832 | 20.1 | 151,164 | 5.1 |
| Hospitals | 17,160 | .9 | 88,400 | 3.0 |
| Schools | 17,940 | .9 | 3,900 | .1 |
| Plant cafeterias | 3,380 | .2 | 780 | -- |
| Producer to consumer | 698,020 | 37.2 | 1,283,861 | 42.9 |
| Friends, neighbors, and relatives | 23,267 | 1.2 | -- | -- |
| Total | 1,877,599 | 100.0 | 2,992,031 | 100.0 |

Where eggs purchased

Forty-six per cent of the shell eggs used by all Williamsport market organizations included in the study were purchased from producers, 24 per cent from assembler-distributors,[5/] 23 per cent from hucksters,[6/] 4 per cent from city wholesalers,[7/] 2 per cent from dairies, and 1 per cent from retailers,[8/] Table 2.

Although Johnstown is located in a deficit egg producing county, producers in Bedford and Somerset counties are located close enough to the Johnstown market to serve it directly. Sixty-five per cent of the shell eggs used by all market organizations included in the study were purchased from producers, 24 per cent from city wholesalers, 7 per cent from an assembler-distributor, 3 per cent from retailers, and 1 per cent from hucksters, Table 3.

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5/An assembler-distributor is arbitrarily defined in this paper as a business which assembles, grades, packs and resells eggs. The operation is of a larger scale and covers a larger geographic area than does that of a huckster.

6/A huckster is arbitrarily defined in this paper as an individual who buys eggs on a farm route and resells them. His operation is small scale and confined to a small local area.

7/A wholesaler is arbitrarily defined in this paper as a business which buys eggs and resells them. However, the business does not pick up eggs on the farm.

8/The term "retailer" or "retail grocery store" as used in this study refers only to non-chain retailers (unless otherwise indicated).

Table 2. Sources of Supply of Shell Eggs for Williamsport: Outlets, Sources, Proportion of Outlets Using Sources, and Proportion of Volume Obtained from Various Sources, 1960.

| Source | Retail grocery store | | Restaurant | | Bakery | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Outlets | Volume | Outlets | Volume | Outlets | Volume | Outlets | Volume |
| | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) |
| Producer | 70 | 56 | 43 | 40 | 33 | 20 | 60 | 46 |
| Assembler-distributor | 1 | 16 | -- | -- | -- | -- | 2 | 24 |
| Huckster | 32 | 19 | 32 | 44 | 16 | 20 | 32 | 23 |
| Wholesaler | 9 | 6 | 8 | 7 | 34 | 30 | 9 | 4 |
| Dairy | 2 | 3 | -- | -- | 17 | 30 | 2 | 2 |
| Retailer | -- | -- | 17 | 9 | -- | -- | 5 | 1 |
| Total | 114 1/ | 100 | 114 1/ | 100 | 100 | 100 | 110 1/ | 100 |

1/Totals of more than 100 per cent are due to outlets using more than one source.

Table 3. Sources of Supply of Shell Eggs for Johnstown Market: Outlets, Sources, Proportion of Outlets Using Supplier, and Proportion of Volume Obtained from Various Sources, 1960.

| Kinds of source | Retail grocery store | | Restaurant | | Bakery | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Outlets | Volume | Outlets | Volume | Outlets | Volume | Outlets | Volume |
| | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) |
| Producers | 82 | 50 | 81 | 80 | 50 | 50 | 80 | 65 |
| Wholesalers | 19 | 33 | 14 | 13 | 50 | 50 | 23 | 24 |
| Assembler-distributor | 1 | 14 | -- | -- | -- | -- | 1 | 7 |
| Retailer | 3 | 1 | 9 | 7 | -- | -- | 5 | 3 |
| Huckster | 2 | 2 | -- | -- | -- | -- | 1 | 1 |
| Total | 107 1/ | 100 | 104 1/ | 100 | 100 | 100 | 110 1/ | 100 |

1/Total over 100 per cent are due to outlets using more than one source.

Volume and supply source information for retail grocery stores, restaurants, and bakeries in Williamsport and Johnstown is presented in Tables 2 and 3, respectively.

Volume per outlet

Approximately one third of the retail grocery stores in both Williamsport and Johnstown used less than 15 dozen eggs a week. Another third used between 15 dozen and 30 dozen a week, and the final third used over 30 dozen a week. The average number of eggs used per restaurant was under the number used per independent grocer. Sixty-five per cent of the Johnstown restaurants and 46 per cent of the Williamsport restaurants used less than 15 dozen.

The volume of eggs handled by independent retail grocers and institutions did not appear to influence their decision on the type of supplier. However, more of the high egg volume restaurants purchased eggs from wholesalers and hucksters than from producers.

As would be expected, the volume of eggs handled by each retail grocery store was positively related to the gross retail dollar volume of sales, Table 4.

Number of suppliers per outlet and length of time present supplier used as egg source

Approximately 90 per cent of all interviewees in both Williamsport and Johnstown purchased eggs from one supplier. The retail dollar volume of the retail stores had little effect on the number of suppliers used.

There was little difference in length of time Williamsport and Johnstown retail grocers had been buying from present suppliers. In both

Table 4. Proportion of Volume of Eggs Handled Per Week Per Store; by Gross Retail Dollar Volume of Sales, Williamsport and Johnstown, 1960.

| Dozen per week | Monthly gross sales per store: Up to $1,000 | $1,001-5,000 | $5,001 and over |
|---|---|---|---|
| | (per cent) | (per cent) | (per cent) |
| 0-15 | 72.1 | 24.7 | 3.3 |
| 16-30 | 26.2 | 34.2 | 16.7 |
| 31-60 | 1.7 | 31.5 | 40.0 |
| 61-150 | -- | 6.8 | 30.0 |
| Over 150 | -- | 2.8 | 15.0 |
| Total | 100.0 | 100.0 | 100.0 |

areas, approximately 45 per cent of the stores had been buying from the present suppliers for more than five years. However, only one third of the restaurants and institutions had been buying from present suppliers for longer than five years.

There was little relationship between the size of retail grocery stores and the period of time they had been buying eggs from present suppliers. However, the length of time outlets had been obtaining eggs from the three major sources of supply differed. This was especially true of restaurants. Those buying from a wholesaler or huckster had been buying from their present supplier longer than the outlets buying from a producer, Table 5.

Uses of shell and frozen eggs and egg solids by restaurants and institutional users

Approximately 90 per cent of the restaurants and 70 per cent of the other institutions used shell eggs. Most eggs were used by restaurants,

Table 5. Proportion of Retail Grocery Stores and Restaurants Buying Eggs from Specific Producers, Wholesalers, or Hucksters for Given Periods of Time, Williamsport and Johnstown, 1960.

| Number of years | Source | | | | | |
|---|---|---|---|---|---|---|
| | Producer | | Wholesaler | | Huckster | |
| | Stores | Restaurants | Stores | Restaurants | Stores | Restuarants |
| | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) | (per cent) |
| 0-2 | 30.4 | 46.5 | 50.0 | 16.7 | 14.8 | 35.3 |
| 2.1-5 | 23.7 | 24.4 | 5.0 | 25.0 | 25.9 | 23.5 |
| More than 5 | 45.9 | 29.1 | 45.0 | 58.3 | 59.3 | 41.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

in order of importance, in serving, cooking, and baking. The major egg dishes served were fried, scrambled, boiled, poached, and salads in that order. The greatest use of eggs in hospitals and Williamsport schools was in serving. However, most eggs in plant cafeterias and Johnstown schools were used in cooking. Obviously, all eggs used by bakeries were used in baking.

Only three of the 133 restaurants used frozen eggs, and they used them in baking only. A majority of the restaurant personnel interviewed said they were not familiar with frozen eggs. Of those who were familiar with them, more than one half said frozen eggs were not a good substitute for shell eggs.

The only other outlets using frozen eggs were the bakeries. Sixty-two per cent of the bakeries in Williamsport and 89 per cent of the bakeries in Johnstown used frozen eggs. Only two bakery operators said frozen eggs were not a good substitute for shell eggs. Of the ones

who said frozen eggs were a good substitute for shell eggs, 36 per cent said convenience was the reason for liking frozen eggs, 28 per cent liked the final product obtained, and 36 per cent didn't know why they considered them a good substitute.

None of the restaurant operators interviewed used egg solids and a majority were not familiar with them. A majority of those who said they were familiar with egg solids did not consider them a good substitute for shell eggs, because they believed that the final product obtained had a bad flavor and odor.

Thirty-seven and 11 per cent of the bakeries in Williamsport and Johnstown, respectively, used egg solids. A majority of all bakeries did not consider them a good substitute for shell eggs because the final product was inferior in quality. The exception was a large commercial bakery in Williamsport which used a large quantity of egg solids.

Services provided by suppliers

In both Williamsport and Johnstown, the majority of all outlets were receiving delivery of eggs once a week. The type of supplier had no effect on the frequency of delivery. Larger stores were receiving delivery of eggs more often than the smaller stores.

Approximately 90 per cent of all outlets paid for their eggs upon delivery. Hospitals, schools, and outlets buying from a wholesaler were the major outlets buying eggs on account.

Approximately 93 per cent of all outlets buying from producers and hucksters paid upon delivery, while slightly less than 60 per cent of all outlets buying from wholesalers paid upon delivery. The size of the retail stores was not related to date of payment for eggs.

Only 19 per cent of all eggs delivered to independent retail grocery stores were cartoned ready for sale. Twenty per cent of the stores buying eggs from a wholesaler, 19 per cent of those buying from a producer, and seven per cent of those buying from a huckster received eggs in dozen cartons ready for resale.

The size of store influenced the kind of container within which eggs were delivered. Thirty-eight per cent of the large stores received eggs in one-dozen cartons, while only 16 per cent of the small ones received eggs in one-dozen cartons, Table 6.

Table 6. Proportion of Stores Receiving Eggs in Specified Containers; by Size of Store, Williamsport and Johnstown, 1960.

| Type of container | Monthly gross sales per store | | |
|---|---|---|---|
| | Up to $1,000 | $1,001-5,000 | $5,001 and over |
| | (per cent) | (per cent) | (per cent) |
| 30 dozen case | 64.5 | 80.8 | 62.5 |
| 3 x 4 carton | 11.3 | 6.4 | 21.9 |
| 2 x 6 carton | 4.8 | 7.7 | 15.6 |
| Basket or box | 19.4 | 5.1 | -- |
| Total | 100.0 | 100.0 | 100.0 |

Eighty-one per cent of the stores in Williamsport and 66 per cent of the ones in Johnstown sold eggs as "Not Classified." A larger percentage of stores buying eggs from a wholesaler handled Grade "A" eggs than stores buying from any other source. Also, more of the large than small stores sold Grade "A" eggs.

The replacing of eggs by the supplier when they became a week old or older was seldom practiced in either Williamsport or Johnstown.

Only two outlets had a supplier who followed this practice, and in both instances the supplier was a producer.

Only five per cent of the stores in Williamsport and 11 per cent of the ones in Johnstown included eggs in their advertising. A higher percentage of the large stores advertised eggs than did the small stores. However, none of the advertising was paid for by the supplier.

Seventy-five per cent of the stores in Williamsport and 66 per cent of the stores in Johnstown displayed eggs within the store. The type of supplier was not related to method of displaying eggs. More of the large than of the small stores displayed eggs.

Factors giving indications of future service expectations

Seventy-eight per cent of the outlets in Williamsport and 63 per cent of the outlets in Johnstown had had no suppliers, other than the present one, in the past two years. More of the retail grocery store and restaurant operators who bought eggs from hucksters had no other supplier in the past two years than similar organizations which bought from either producers or wholesalers. Also, a higher percentage of the large than small retail grocery stores had one or more suppliers, other than their present one, in the past two years.

More than 40 per cent of the interviewees had not changed the source from which they purchased eggs during the time which the outlet had been in business. Of the ones who had changed the source of supply, the most important reason for changing was that their previous supplier had gone out of business. A higher percentage of small than the large stores had never changed egg suppliers.

In support of the hypothesis that little importance is placed upon extra services such as cartoning, advertising at the supplier's expense, and replacing old eggs, more than 98 per cent of the retail grocery stores and restaurants, and 90 per cent of the institutions reported satisfaction with the present source of egg supply. Also, in support of the hypothesis that quality was the major factor determining the buyer's satisfaction, 75 per cent of all interviewees gave good eggs as a reason for being satisfied with their present source of supply.

A majority of all sample operators said that they would buy eggs from a producer if their present source should stop handling eggs. The major reason given was their ability to get fresh eggs.

In Williamsport 70 per cent and in Johnstown 75 per cent of the grocery store operators said they received no customer complaints about eggs. Eggs with blood spots was the major complaint received by those who did receive complaints. Stores buying from a producer received the fewest customer complaints. Those buying from hucksters received the most complaints.

The sale of eggs accounted for less than five per cent of the total sales in 72 per cent of the Williamsport stores and 85 per cent of the Johnstown stores. The small stores sold proportionally more eggs than did the larger stores.

## Expected Trends During the Next Ten Years

During the ten-year period from 1948 to 1958, the total number of retail grocery stores in Pennsylvania declined 35 per cent. During this same period the number of stores with payrolls decreased 18 per cent.

Of the 9,100 stores that went out of business only 1,806, or approximately 20 per cent, were large enough to have a payroll.

Obviously this trend cannot continue indefinitely. There appears to be little reason to assume that the decrease in the next ten years will be less than the 18 per cent decline in stores with payrolls from 1948 to 1958. Of this 18 per cent, between 14 and 15 per cent likely will be the smaller or family run stores. Or, as in the 1948 to 1958 period, 80 per cent of the stores going out of business will be those not large enough to have a payroll.

A reduction in the number of egg producing flocks and an increase in the size of flocks has occurred during the past decade. This trend will probably continue for the next ten years mainly because of the large number of small flocks of less than 100 birds still in existence. Many of these will discontinue egg production.

There likely will be no significant change in the number of dealers--wholesale food handlers, hucksters, cooperatives and assembler-distributors--in the next ten years. The number of dealers presently in the market areas is small compared to producers and retailers and there appears to be no logical reason for the number to become much smaller. Even though wholesale food handlers may decrease in number, this decrease will probably be offset by an increase in the number of assembler-distributors.

## Implications for Future Demand

Present procurement policies of retailers, restaurants, and institutions, as well as the trends in the various outlets and sources of supply, were used to project egg procurement policies and demands of the egg marketing system of the future.

Procurement policies of independent retail grocery stores, restaurants, and institutions likely will change very little during the next ten years. Although the numbers of retail grocery stores and producers are decreasing, the average size of producer flocks is becoming larger, making it possible for more of the larger retailers to obtain eggs directly from producers.

Also, the uniqueness of quality control of eggs makes it possible for the producer to process as high a quality product on the farm as can be processed at a central plant. In most cases, eggs packed and delivered directly by the producer may be of higher quality since less time is needed to move them through market channels.

Over 95 per cent of the owners and managers interviewed in Williamsport and Johnstown said they were satisfied with their present source of supply. The majority of these indicated that they would buy eggs from a similar source if their present supplier should go out of business.

A majority of the buyers in both areas had been buying from the same supplier for many years, indicating either their lack of concern about eggs, or their satisfaction with their source. They had few complaints about such services as delivery, cartoning, grading, and regrading. Most of the store managers indicated that they had no customer complaints or only a few now and then. Also, only three per cent of all interviewees said they were considering changing egg suppliers.

With the apparent satisfaction of the buyers, it is not likely that they will change their egg procurement policies greatly during the

coming years. Also, the study indicated that little importance was attached to the extra services of advertising, replacing old eggs, extending credit, and similar services. Thus, it can also be assumed these services will not be demanded by these outlets in the near future.

However, cartoning has been growing in importance among the larger stores. Since retail stores are becoming larger, future years will probably find more stores demanding that eggs be delivered in dozen cartons ready for sale. This may be the major change in the egg marketing system of areas studied in the coming ten years.