Consumer purchasing behavior: an empirical study of livestock products food

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Abstract. Food consumption is not only measured by the quantity consumed but also by how consumers make decisions in purchasing food. This article studies consumer purchasing behavior in association with socio-economic determinants with respect to selected livestock products foods. In this study, the primary data were collected by the structured questionnaire and conducted to 366 households’ respondent. Simple statistical analysis such as descriptive statistical analysis, frequency distribution, cross tabulation, and analysis of variance analysis was used to assess socio-demographic factor and the consumers’ purchasing decision for beef, chicken, and egg products. Results indicate that a higher income and educational level of consumers influences their decisions on expensive food such as beef while gender and education seems to have no significant impact on common food such as chicken and egg which are most frequently purchased from nearby markets even for chicken with delivery service are preferred by the respondent.

1. Introduction

Livestock products foods such as meat, eggs, and milk have been proven to contain high nutrition [1][2]. Consumption of meat that contains lots of nutrients will be good for health in the long run [3]. Fresh milk consumption based on research can also improve the health of the body [4].

Demand for food depends on characteristics of household since food has large share in total expenditure like in Indonesia. Household size, occupation and location make consumption on food different. Some evidence shows that socio-economic characteristics of households are important determinant of food expenditure.

Consumer behavior is not only related to the amount consumed but also related to the behavior in purchasing these high-value foods. Consumer perceptions of this food affect attitudes in consuming. The results of previous studies indicated that perceptions had a positive effect on milk purchasing attitudes and purchasing levels of broiler chicken meat [5][6].

Economic activities are currently entering an era known as the digital economy era. The growth, integration and sophistication of information and communication technology have led to fundamental changes in economic activity, including the purchase of foods. Consumer behavior in choosing what form of market is the most comfortable to meet their food needs.
Consumer behavior as the activities of individuals who are directly involved in obtaining and using goods and services, including the decision-making process in the preparation and determination of these activities. Consumer behavior will determine the decision making process in purchasing. The decision on purchasing of these foods is influenced by socio-economic characteristics, and psychologies aspects. Therefore, analysing and identifying these factors is meaningful for marketer to attract target buyer.

2. Methods
Data used for this research paper were collected through the survey questionnaire administered. A total of 366 sample consumers were filling out our instrument to know their buying patterns for livestock products food. The product categories under the study was included meat (beef), chicken, egg, in processed and unprocessed form.

The collected data were digitized in an SPSS spreadsheet and a simple statistical analysis to assess the buying behavior which included descriptive statistical analysis, cross-tabulation and frequency distribution was carried out. Analysis of variance (ANOVA) was used to assess whether socio-demographic factors play a significant role in food purchase decisions. To assess the mean rank difference and the importance of product and market attributes, the Friedman test was conducted.

2.1. Consumer profile
Characteristics of consumer surveyed are shown in Table 1. Out of the 366 respondents surveyed, 61 per cent were female. Age composition of the sampled respondents indicate that the surveyed group is matured enough to respond on various food consumption issues. Out of the total surveyed consumers, more than 60 per cent of the respondents were between 18 to 33 years of age. Family size referred to number of family members are all people who are and live in the household.

Table 1. Characteristics of sampled respondent

| Characteristics                  | Response |
|----------------------------------|----------|
| Sample size                      | 366      |
| Gender of household head         |          |
| Male                             | 143      |
| Female                           | 223      |
| Family composition               |          |
| 0-4                              | 238      |
| >5                               | 128      |
| Age composition (year)           |          |
| 18 - 33                          | 229      |
| 34 - 41                          | 24       |
| 42 - 49                          | 48       |
| ≥ 50                             | 66       |
| Educational background           |          |
| Basic-secondary school           | 110      |
| University                       | 217      |
| Postgraduate                     | 39       |
| Monthly income                   |          |
| ≤ Rp 2,000,000.00                | 106      |
| Rp 2,100,000.00 – Rp 6,000,000.00| 161      |
| Rp 6,100,000.00 - Rp 10,000,000.00| 58       |
| > Rp 10,000,000.00               | 40       |
The distribution among illiterate, basic education and high educational levels are presented in Table 1. Most respondents have a basic education level, which corresponds to a senior high school level or equivalent. Only 30 per cent of the respondents are from the secondary level and below. Educational profile of the respondents shows that most of them have graduate level or higher qualifications. Education is usually an indicator of knowledge, i.e., wives in the household as decision maker of food at home with a high education level possess more knowledge about high-value food and the impact of food consumption on health.

Total expenditure as a proxy of income is given which divided household into the low, middle and high group. Sample households falling between the monthly income group of Rp 2,100,000- 6,000,000 dominated, with a 44.1 per cent share. Most of the respondents have moderate income. Income is the main determining factor for a family in buying food products. The income earned will be spent on household food consumption.

2.2. Consumer response on livestock products expenditure

The livestock products consumptions with different socioeconomic variables of the sample respondent are compared in Table 2. It showed that chicken and egg products consumption with respect to household size. The number of household members can affect household expenditure in the food consumption. The ratio of household income to be saved as savings is inversely proportional to the number of family members, meaning that the more family members, the less income is saved.

Some of the food items reached a peak where there were one or two persons in a household. We need to note that there were only three per cent of households with a single person. As to a household with more than four persons, usually the additional member is either a child or an elder family member; reduced per capita consumption is expected since these additional family members usually do not need as much these foods as the two adult members.

| Table 2. Expenditure on beef, chicken, and egg by socio demography (IDR/week) |
|-------------|---------|----------|---------|
| Characteristics | Beef     | Chicken meat | Egg      |
| Gender       |         |           |         |
| Male         | 58,520  | 64,063    | 32,100  |
| Female       | 45,090  | 59,548    | 30,275  |
| t-stat       | 2.929*  | .617      | .499    |
| Household size |         |           |         |
| Less than or equal four | 46,700  | 52,085    | 27,085  |
| More than four  | 55,730  | 77,705    | 38,055  |
| t-stat       | 1.256   | 20.027*** | 17.516*** |
| Education    |         |           |         |
| Primary education | 40,810  | 57,718    | 29,045  |
| Higher education | 54,283  | 62,855    | 31,820  |
| t-stat       | 3.358** | 0.706     | 1.021   |
| Level income |         |           |         |
| Low          | 36,205  | 57,110    | 26,510  |
| Middle       | 57,755  | 63,965    | 34,655  |
| High         | 92,570  | 69,260    | 37,840  |
| F-value      | 13.740*** | 1.382     | 7.194*** |

Consumer preference and choosing to spend food type is influenced by consumer condition and motivation [7]. There is no significant difference in the consumption of beef, chicken, and egg among...
some socioeconomic characteristics of household. The findings of this study also indicate there are significant differences between the three level of income with respect to the average expenditure on beef and egg. Similar with gender, there is no significantly different of chicken and egg expenditure in level education factors.

It is obvious that increased family purchasing power significantly increased the consumption of livestock products foods. The levels of increase expenditure (income) classes were 2-4 times for meat, eggs. This may reflect unequal income distribution patterns among households, and indicates that livestock products as animal protein foods are highly responsive to income level changes. Among livestock products, expenditure for cheaper food was dominated by poor household. For instance, egg consume higher in poor. As increasing income, household changed to expensive food. Higher-income households allocated a larger share of their budget on meat other than egg. These phenomena lead us to focus on the relation between income-consumption and consumer behavior. Differences in socio-economic condition are affected to the consumer behavior in consuming. Consumers with the same economic status will choose product type and its prices in the same level [8].

2.3. Consumer response on purchasing decision

The purchase behavior of the consumers was assessed based on frequency of purchase, monthly expenditure, preferred marketplace, distance to market and food packaging.

The survey results show that eggs are the most frequently purchased products with a mean value of 1.62 and a mode value of 1 (Table 3) which indicates that most of the consumers shop for egg on a daily basis. Similarly, chicken are generally purchased twice a week with a mean value of 2.19 and a mode value of 2. On the other hand, beef, which are most expensive, are less frequently purchased. The analysis reveals that most of the respondents buy grocery products on twice a month. Poultry meat and eggs represent one of the largest potential sources of dietary animal protein in Indonesia, and are acceptable to all ethnic and religious groups.

Table 3. Consumer response on food purchasing decision

| Purchase decision | Products | n  | Mean | Mode | SD  | Friedman test |
|-------------------|----------|----|------|------|-----|--------------|
| Frequency purchasing\(^a\) | Chicken | 423 | 2.19 | 2    | 1.37 | \(\chi^2 = 46.119\) |
|                   | Beef    | 338 | 4.02 | 4    | 2.00 | Sig = 0.00   |
|                   | Egg     | 441 | 1.62 | 1    | 1.22 | df = 2       |
| Monthly expenditure\(^b\) | Chicken | 391 | 1.32 | 1    | 1.15 | \(\chi^2 = 54.798\) |
|                   | Beef    | 213 | 2.08 | 1    | 1.44 | Sig = 0.00   |
|                   | Egg     | 423 | 1.19 | 1    | 1.09 | df = 2       |
| Preferred marketplace\(^c\) | Chicken | 394 | 1.28 | 2    | 0.33 | \(\chi^2 = 300.551\) |
|                   | Beef    | 213 | 1.43 | 1    | 0.49 | Sig = 0.00   |
|                   | Egg     | 427 | 1.54 | 1    | 0.22 | df = 2       |

Notes: \(^a\) Daily – 1, twice a week – 2, Weekly – 3, Twice a month – 4, Monthly – 5; \(^b\) less than Rp. 100,000 – 1, Rp 100 – 150,000– 2, Rp 150,000- 200,000 – 3, more than Rp 200,000– 4; \(^c\) buy to shop– 1, buy with delivery order – 2

Table 3 indicates that most of the consumers prefer buy directly to meet their food consumption requirements. Beef and egg food items are generally purchased from nearby shops or buy directly (74%). Reason consumers choose to shop at offline-markets is the location is easy to reach, complete provide daily necessities, freshness guaranteed, low prices, and bargaining opportunities. They want to do these independently in the process of selecting beef and egg. Shop or supermarkets offer conveniently packaged these food items with choose and pick facilities.
Most of the respondents order chicken from their home. Those who choose to shop at mobile vendors, due to the fast speed of service and ease of access. Buyers don't need any more use transportation services to the location of purchase.

The consumption of chicken meat more frequent than that of beef products [9]. Consumer preference on food consumption can be seen by the frequent consumption, quantity consumed products type, and the place of purchase [10]. The shifting of consumer preferences and behavior in purchasing these food types has resulted in changing marketplace alternatives such as delivery services.

3. Conclusion
The livestock products consumptions, such as beef, chicken and egg, with different socioeconomic variables of the household sample showed a decreasing trend of consumption with respect to household size. Level of income showed significant correlation to the consumption of beef and egg. This study provides insights on consumers’ purchasing behavior of beef, chicken and egg as main livestock products food consume by people. Findings this study provides insights on consumers’ preferences of food and grocery products in terms of product and market characteristics with the help of primary survey data. Findings of the study clearly indicate that chicken and egg are most frequently purchased from nearby markets even for chicken with delivery service are preferred by the respondent.

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