

Evaluation of Food Rationing and Subsidy Program

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Abstract: Egypt's food rationing and subsidy system has been a mainstay of the government's long-term policy of promoting social equity and political stability. There is an increasing pressure to reform if not eliminating the subsidy program. Few studies were carried-out to evaluate the current subsidy system. The aim of this study is to assess the consumption of subsidized and unsubsidized bread, identify the factors affecting dispensing rationed foods and to determine consumer's opinion towards the subsidy program. The subjects of this study were 204 employees from Alexandria University hospitals. Data were collected by direct interview using a predesigned questionnaire. Data were collected on the socioeconomic characteristics of the family, purchase of subsidized balady and unsubsidized shami and fino bread. The fate of the subsidized bread and consumers' suggestions to improve its quality were assessed. The rate of dispensing foods through ration cards was determined. Consumers' opinion of the nutritional values of the subsidized foods and the preferred mode of subsidy were recorded. The results show that subsidized balady bread was consumed by all social strata, the percapita share of low socioeconomic groups was more than 3 loafs daily. Shami and Fino bread was consumed mostly by high income bracket. The results show that 14.2% of the balady bread was wasted and 10.8% was refrigerated. The majority (46.7%) recommended no change in the current bread subsidy system and 28.9% recommended improved baking. The quantity of foods dispensed by ration card varied with the type of food. The whole quantity of allocated sugar was dispensed by 78.0% of the sample compared with tea which was least collected (49.5%). Poor quality was the main reason for not dispensing the whole quantity, however, it was reported by some consumers that the rationed quantity of sugar and oil exceeded their needs. The results show that 48.0% of the sample believed that food subsidy improves nutrition while 28.9% reported that it has no effect. The present card system of delivering subsidized food was preferred (52.0%) fearing that cash subsidy will not be enough (54.7%) or will be associated with a sharp increase in food price.

Key words: Food; Bread; Subsidy; Ration Cards; Socioeconomic Factors.

INTRODUCTION

Egypt's food rationing and subsidy system has been a mainstay of the government's long-term policy of promoting social equity and political stability. It has been a major component of the social safety net for the poor, guaranteeing the availability of affordable staples and minimizing the adverse effects of recent economic reform and structural adjustment.⁽¹⁾ Food rationing

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began as a temporary measure in Egypt in 1941, with a goal of helping Egyptians cope with food scarcity and inflation resulting from World War II. The initial system was not targeted to the poor, but was instead set up to provide necessities such as sugar, kerosene, edible oil, and tea.⁽²⁾ Wheat, in turn, was not rationed, but was subsidized in the years following the war.⁽³⁾ Following “July Revolution” in 1952, agrarian reforms marked the beginning of extensive government involvement in the production, marketing and distribution of most agricultural products, which lasted until the start of liberalization of state agriculture in 1987.⁽⁴⁾

In the mid-1960s, ration cards were used for the distribution of a small number of goods and did not always involve price subsidies and were designed as a quantity-rationing system. In general, spending on food subsidies remained a modest percentage of the government’s budget, and the role of food subsidy policies was

primarily to ensure the support of essential food items.⁽⁵⁾ The costs of the expanding system continued to grow and the subsidy system was becoming increasingly unsustainable. By 1981, almost all the population had ration cards, of which 97 percent were the more highly subsidized green ration cards.⁽⁶⁾

In 1982, a process of reforming the food subsidy system was initiated. This was achieved by reducing the number of subsidized foods, reduction in the number of people on the ration card system and a slow reduction in subsidies by reducing the weight of subsidized food, or replacing it by a more expensive version. Bread price was increased by this strategy to 5 piasters in 1988, without popular protest. In 1996, the government introduced unsubsidized version of fino bread and 72 percent extraction flour used for the preparation of shami bread. The result of these frequent policy steps has led to a reduction of subsidized foods to sugar, oil, rice and tea

which are dispensed through the ration card and subsidized balady bread which is sold freely.

Consumer price subsidy have been studied on a variety of fronts, particularly the economic and social impact of such programs, its negative impact on the national economy and the leakage of these subsidies to the rich. Surprisingly few studies have focused on their nutritional impact. The nutritional impact of food price subsidy depends on the nutritive value of the subsidized food, the degree of subsidy and the ability of the beneficiaries to purchase the subsidized foods. *Kochar* (2005) found that India's subsidy program has only a limited effect on calorie intake⁽⁷⁾. This was attributed to the low take-up rates and low purchases of subsidized goods. The reasons for the low take-up rates and use were not clear.⁽⁸⁾ On the other hand, targeted fruit and vegetable subsidy among low-income women in special supplemental nutrition program

proved to be very effective in increasing fruit and vegetables consumption.⁽⁹⁾ Tortilla subsidy in Mexico was followed by a better nutrient consumption and improved the nutritional conditions of the poor and marginated urban sector of the society.⁽¹⁰⁾ It was even reported that public housing subsidy may protect the family from excessive pressure on their food budget and was associated with improved nutritional status in young children among low income families.⁽¹¹⁾

Despite achieving a significant reduction over the past two decades, the absolute cost of food subsidies in Egypt is still high relative to the benefits received by the poor. The program is not designed to improve the nutritional status of the vulnerable groups. The subsidy scheme is under great pressure from international organizations to be eliminated. The whole debate of food subsidy in Egypt centers on economic and social consideration without

paying any attention to its nutritional impact.⁽¹²⁾

In view of the limited studies on food subsidy in Egypt, this study was initiated to evaluate the current food subsidy program, assess the consumption of subsidized and unsubsidized bread, identify the various socioeconomic factors affecting the intake of subsidized foods and to determine consumers' opinion towards the subsidy program.

Subjects and methods

The subjects of this study were sampled from the administrative staff and workers at Alexandria university hospitals. The criteria for selection were that the subject should be married, having a family and holding a ration card. The minimum sample size calculated using Epi-Info version 6.0 and an alpha error of 0.05, a null hypothesis of 75% consuming subsidized foods with 6% precision was 201.

Each subject was privately interviewed to explain the objectives of the study and to

gain his approval to participate in the study.

Response was highly positive and many of them were very keen to express their opinion regarding food price subsidy.

Data were collected by direct interview using a pre-designed questionnaire which was previously tested and corrected after carrying out a pilot study. The collected data included information on the level of education and the subjects were classified into three levels, university level, middle level of education including graduates from secondary schools and technical schools and low level of education including illiterate subjects and those with primary school education. Families were classified according to family size which included all the house hold members into small families with less than five members, medium size families between five and six members and large families including seven or more members. The total family income was calculated and was divided by the family size to estimate the monthly percapita

income. The subjects were classified into low income group with monthly percapita income less than 200LE, middle income between 200 and 400 LE and high income bracket with income exceeding 400 LE.

Each subject was requested to provide information on the total numbers of loafs of subsidized balady bread, unsubsidized shami bread and fino bread purchased daily .If bread was purchased on weekly basis or otherwise, the daily share was calculated. The number of loafs purchased from each type of bread was divided by the family size to determine the daily percapita share from each type. The fate of the purchased bread whether completely consumed, frozen or wasted was recorded. Consumers' opinion on the best approach to improve the quality of subsidized bread was recorded.

Holders of the rationing cards were questioned if they dispense the whole quantity of the allocated foods, only part of it or if they do not take the foods dispensed

through the ration card including sugar, oil, rice and tea. Those who do not dispense the whole quantity or take only a part of it were questioned about the reasons for doing so. The subjects were questioned about their opinion if the food subsidy program improved the nutrition of their family members , the preferred mode of subsidy whether through ration card or direct cash subsidy and the reasons for preferring subsidy through ration cards.

Data were verified and analyzed using the SPSS version 12.0 software package. Descriptive statistics were used to present subjects characteristics. The Chi square test was used to compare association between variables, t test was used to compare the difference between means, P values of 0.05 or less were considered statistically significant.

Results

The results show that the mean percapita share of bread was 2.63 loafs of subsidized balady bread, 0.94 loaf off

unsubsidized shami bread and 0.91 loaf of fino bread (Table 1). The data show that percapita income, family size and educational level have a significant impact on the mean daily share of different types of bread. The binary comparison of means according to some socio-demographic criteria is presented in table 2. The mean percapita purchase of subsidized balady bread was 3.42 loafs by low income group when compared with 1.53 loafs for high income group. The largest mean was observed among members from large families (3.71 loafs) and from low educational level (3.37 loafs), the corresponding mean for those with university education was lower to 1.13 loafs and 1.53 loafs among families with monthly percapita income exceeding 400LE.

The mean daily share of unsubsidized shami bread was significantly lower by almost all the groups investigated. However, the mean share of shami bread was higher than subsidized bread among

high income families, $\bar{X} = 1.71$ and 1.53 loafs respectively. ($t=2.046$, $P < 0.05$). The same trend was noted among university educated level where the mean share of shami bread was 2.23 loafs which was significantly higher ($t = 8.87$, $p < 0.001$) than the mean share of subsidized balady bread which was lower to 1.13 loafs daily.

The mean daily share of fino bread was higher among high income families (1.54 loafs) followed by university educated group (1.49 loafs) and was slightly lower among members of small size families (1.44 loafs). On the contrary, fino bread was least consumed by members of large size families and those with lower level of education, $\bar{X} = 0.48$ and 0.58 loafs daily respectively

The results show that 75% of the subsidized balady bread was completely consumed, 14.2% was wasted and 10.8% was frozen. The fate of purchase subsidized bread varied significantly with

the percapita income and educational level but not with the family size (Table 3). Low income families consumed 83.1% of the purchased bread and only 10.4% was wasted. On the other hand , high income families consumed only 59.6% of the quantity purchased , wasted 19.2% and 21.2 % of the loafs were frozen. The difference was statistically significant ($X^2=11.13, p < 0.05$).

The results show large size families consumed 76.9% of the purchased bread as compared with 69.6% of small size families. A comparable proportion (around 16%) of the purchased bread was frozen by both groups; the differences were not statistically significant.

The fate of the purchased subsidized bread was significantly modified by the level of education, ($X^2= 14.38, P < 0.01$). Low income families consumed a large proportion of the purchased bread (78.2%) but they also wasted a significant proportion (17.2%). Families with higher

level of education consumed a lower proportion (64.6%), wasted a smaller proportion (10.4%) but stored 25.0% of the purchased bread by freezing. Such proportion is higher than that reported by any other group.

Consumers' recommendations to improve the quality of purchased bread are presented in table 4. The data show that 23.5% of the subjects recommended an increase in the price of bread, 28.9% recommended improved baking while 46.7% did not want any change. The results show that 44.2% of the high income group recommended an increase in the price of subsidized bread as compared with 11.7% of the low income families who either recommended improved baking (27.3%) or simply recommended no change. The difference was statistically significant, $X^2 =21.31, P<0.001$.

The type of recommendations also varied with family size as 25.3% of small size families recommended a price

increase as compared with 12.8% of large size families. The majority of the latter group (64.1%) did not want any change in the present system. The difference was statistically significant, $X^2 = 9.34$, $P < 0.05$. The level of education had a strong impact on the nature of recommendations to improve the quality of subsidized bread, $X^2 = 46.31$, $P < 0.001$. The majority of the university educated group (43.7%) recommended an increase in price, improved baking was mostly recommended by families with middle level of education (40.6%). The majority of the group with low educational recommended no change (72.4%).

The impact of income on dispensing foods allocated through ration card monthly is presented in table 5. Sugar ration was taken by 78% of the families without significant variation between various income groups ($X^2 = 3.78$, NS). However, it was noted that 13.5% of the high income families did not take the sugar ration.

Oil ration was dispensed by 79.2% of the low income families and was only taken by 61.5% of the high income bracket. The data show that only 17.3% of the former group did not dispense the allocated oil ration.

Uptake of rice ration was significantly modified by income ($X^2 = 21.32$, $P < 0.001$). On the average, 57.8% of the surveyed families dispensed the whole rice ration; such proportion was as low as 32.7% of high income group and increased to 67.5% among low income families. The results show that 19.1% of the families did not take any rice and 23.0% collected only a portion of the allocated quantity.

Rationed tea uptake was significantly modified by income ($X^2 = 35.48$, $P < 0.001$) and was dispensed by 49.5% of the families. The data show that only 15.4% of the high income group dispensed the rationed tea, such proportion increased to 66.2% among low income families. A large

proportion of the high income bracket did not dispense the allocated rationed tea.

The reasons given by ration card holders for not dispensing allocated subsidized foods varied significantly with the type of food ($X^2 = 27.30$, $P < 0.00$). Tea and rice were rejected because of their poor quality, 61.2% and 44.2% respectively. Only 26.7 % of the subjected reported that sugar was of poor quality. Rice was not taken by 29.15% Of the families because they could not afford its price. A large proportion of the subjects did not dispense the whole allocated quantity of sugar and rice because the ration quantity exceeded their needs (table 6).

The effect of educational level on consumers' opinion regarding food subsidy program through rationing card is presented in table 7. The results show that 48.0% believed that the program improved their nutritional status; such ratio was as high as 58.6% among the group with limited education and was lower to 29.2%

among university graduates. On the other hand, 28.9% reported that it has no effect, such opinion was mostly expressed by the university educated group, the difference was statistically significant, $X^2 = 12.57$, $P < 0.01$.

The results show that 52% of the subjects preferred ration cards over cash subsidy (48.0%). The latter mode of subsidy was preferred by 64.5% of the university graduates while ration card was mostly preferred by the group with low education (66.7%); the difference was statistically significant, $X^2 = 14.17$, $P < 0.001$).

The main reasons for preferring ration card over cash subsidy were the belief that cash subsidy will not be enough (54.7%), the expected increase in the prices of foods (25.5%) and the possible food shortage (19.8%). The most common reason given by subjects with limited education was the belief that cash will not be enough (67.2%) , such proportion was

significantly lower ($X^2 = 10.66$, $P < 0.05$) to only 29.4% among university educated subjects who believed that cash subsidy will lead to foods shortage

Discussion

Bread, the staple food, enjoys a very special place in the Egyptian diet. It is made from heavily subsidized wheat flour or wheat mixed with maize flour. Egyptians eat food with bread and not bread with food.⁽¹³⁾

Balady bread and flour subsidies were not designed to serve the poor alone, since these foods are available to any consumer, while there is a very widespread perception that self-targeting has resulted in balady bread and flour being relatively more consumed by the poor, a high percentage of bread and flour subsidies go to the non poor.⁽¹⁴⁾

It is assumed that only the lowest quality bread is subsidized and that rich community will buy better quality products. However, as subsidized bread is cheaper

than animal fed, many poultry and cattle growers abuse the effort of the government to provide subsidized bread for the low income groups.

The results of this study show that subsidized balady is consumed by all socio-economic strata, however, the rate of consumption showed significant variation (table 1). The mean daily share of balady bread was more than 3 loafs daily for low income group, large size families and those with limited education. Low income families can not afford the price of shami of fino bread which is 4-5 times, higher than the subsidized bread.

When the head of the family faces the problem of inflation and low income, he has no alternative other than purchasing a large number of loafs of subsidized bread that is less expensive than any other source of calories. Better educated small families with higher income, consume more of the shami and fino bread and reduce their consumption of balady bread which

requires a strong effort to purchase from over-crowded bakeries. It is postulated that fino bread is used by all families to prepare sandwiches for their school children.

The fate of the purchased subsidized bread was also affected by the socioeconomic characteristics of the family. Low income families who suffer from the burden of inflation consume 83.1% of the purchased bread, high income bracket consumed less (59.6%) but they refrigerated a higher percentage of the bread (21.2%). High income families with better education consumed a relatively lower proportion of the subsidized bread but because of the difficulty in obtaining this bread, they were more keen to keep the excess by refrigeration. In the mean time, it was noted that 14.2% of the purchased bread was wasted, such proportion was as high 19.2% among high income families. This is mostly due to the poor quality of the bread which becomes

inedible if kept without refrigeration for few hours.

The percentage of wasted bread was much lower than that reported in 1992 which amounted to 20.8%.⁽¹⁵⁾ Although the drop in bread waste occurred over 18 years, extensive education program should be implemented and directed to housewives to reduce bread waste to a minimum level.

Consumer's recommendations to improve the quality of subsidized bread varied considerably. Around 46.7% of the subjects did not want any change in the current system. They accept the poor quality of the low price bread fearing that any improvement will be accompanied by an increase of its price which they can not afford. This was mostly mentioned by large size, low income families with limited education (table 4). Around 28.9% of the subjects recommended improved baking without any charge in the price of the bread assuming that the government should be

responsible for that. Improved baking will contribute significantly to reduce bread wasted. A small proportion of the subjects who were mostly with university education and better income recommended an increase in the price of bread. They postulated that such hike in the price should be used to improve the quality and the taste of bread, reduce the waste and the use of subsidized bread in feeding animals.

In contrast to bread and flour subsidies, sugar, oil, rice and tea subsidies are explicitly designed to be targeted. These food are dispensed through the ration card. The quantities actually dispensed from each food varied considerably. The whole allocated quantity of sugar was dispensed by 78% of the subjects compared with 49.5% of the allocated tea (table 5). It was of interest to note that 22.3% of the subject did not dispense the rationed subsidized sugar either partially or completely (table 5). The

main reason for doing so was that the allocated quantity exceeded their needs (48.9%), poor quality (26.7%) and almost one quarter of the sample could not afford to purchase the whole quantity of subsidized sugar (table 6).

The quantity of ration cooking oil exceeds the needs of some families and was dispensed completely by 71.6% of the subjects. However, 29.3% of the subjects reported that the quality of oil is poor. This is true, rationed oil is usually turbid and its odor is some times not acceptable.⁽¹⁶⁾ Uncollected oil is usually sold on the black market to small restaurants that do not pay much attention to quality.

Rice is a very popular food, it comes second to bread as the source of calories. More than 28.0% of the subjects did not collect the whole allocated quantity. It was reported that card rice is of poor quality (44.2%). There is a large difference in the quality between subsidized rice and that available on the market. The difference in

the price is not too large which encourages the family to purchase better quality rice from the free market (table 6).

Tea was the most unaccepted rationed item and was dispensed by only 49.5% of the families. The main reason given was its poor quality (table 6). Tea may be considered the national drink and is consumed several times daily. It replaces fruits as it is the habit to have a glass of sweet tea shortly after meals. Unless the quality and taste are good, tea will not be accepted by the consumer.

The nutritional value of subsidized foods is very poor, rice, oil, sugar are calorie rich foods and bread could cover a good portion of the daily caloric requirement, however, they are very poor in vitamins and minerals, the protein contents of rice and bread are relatively low and are of poor biological value. The results show that 48% of the sample believed that subsidy program improved their nutrition. The university educated

subjects who have a limited knowledge about nutrition believed that it has partial or no effect on the nutrition of their family members (table 7). The composition of the subsidized foods dispensed through the current program can not contribute to improving the nutritional status of the vulnerable groups of the society.

Available data show that the card system is poorly targeted. More than 25% of the poor families do not carry a ration card because of the bureaucratic steps necessary to acquire a ration card.⁽¹⁷⁾ Another major problem of the food subsidy program is the volume of leakage of those subsidies to the high income bracket.⁽¹⁸⁾ In addition, foods allocated through the ration cards and not collected by the consumer, are usually sold on the black market, This way, the economic benefits of subsidy never reaches the group targeted by the program.

Despite of its drawbacks, more than

50% of the sample recommended a continuation of the current system of dispensing the subsidized foods through the ration cards. This proportion was as high as 66.7% among the group with limited education. High educated group preferred cash subsidy (64.5%), they believe that they could use the cash to purchase the foods they need only and would have the chance to purchase better quality foods. Those who preferred ration card subsidy were worried that cash subsidy will not be enough (54.7%) and will be followed by a sharp increase in

the price of foods. Food shortage was a major concern for the educated group (41.2%) but not for those with limited income whose needs are quite limited.

Both government and public fear that transformation to cash system will result in a high rate of inflation. There is no control how cash subsidy will be spent by recipients. It is recommended to reform and develop the current food subsidy program to guarantee reaching the low income group, reduce leakage and improve the quality of subsidized foods.

Table 1: Mean daily percapita purchase of different types of bread.

Variable	Mean daily purchase of bread			Total	
	Subsidized Balady (A)	Unsubsidized Shami (B)	Fino Bread (C)	No.	%
	$\bar{X} \pm sd$	$\bar{X} \pm sd$	$\bar{X} \pm sd$		
Monthly percapita income (L.E)					
<200	3.42±1.71	0.59±0.76	0.61±0.42	77	37.7
200-	2.54±1.53	0.75±0.79	0.82±0.41	75	36.8
400+	1.53±0.82	1.73±1.13	1.54±0.75	52	25.5
Family Size					
<5	1.64±0.98	1.58±0.41	1.44±0.96	79	38.7
5-	2.97±1.26	0.61±0.67	0.63±0.58	86	42.2
7+	3.71±1.69	0.37±0.22	0.48±0.96	39	19.1
Educational level					
University	1.13±0.91	2.23±1.52	1.49±0.88	48	23.5
Middle	2.69±1.42	0.72±0.63	0.93±0.61	69	33.8
Low	3.37±1.79	0.41±0.72	0.58±0.34	87	42.7
Total	2.63±0.86	0.94±0.47	0.91±0.38	204	100

Table 2: Binary comparison of mean purchase of different types of bread according to some sociodemographic criteria listed in table 1.

Variable	Comparisons					
	A×B		A×C		B×C	
	t	P=	t	P=	t	P=
Monthly percapita Income (L.E)						
<200	21.60	0.00	22.79	0.00	0.329	0.74
200-	14.85	0.00	15.51	0.00	1.123	0.26
400+	2.046	0.04	0.129	0.89	2.001	0.05
Family Size						
<5	0.807	0.42	2.082	0.03	1.916	0.06
5-	23.62	0.00	24.095	0.00	0.322	0.74
7+	27.99	0.00	23.74	0.00	1.600	0.11
Educational level						
University	8.87	0.00	4.06	0.00	6.018	0.00
Middle	18.11	0.00	16.27	0.00	3.42	0.00
Low	21.91	0.00	21.87	0.00	3.05	0.00

Table 3: Fate of purchased subsidized Balady Bread.

Variable	Fate of Bread						Total	
	Completely consumed		Refrigerated		Wasted			
	No.	%	No.	%	No.	%	No.	%
Monthly percapita Income (L.E)								
<200	64	83.1	5	6.5	8	10.4	77	37.7
200-	58	77.3	6	8.0	11	14.7	75	36.8
400+	31	59.6	11	21.2	10	19.2	52	25.5
	X²= 11.13, p<0.05							
Family Size								
<5	59	69.6	11	13.9	13	16.5	79	38.7
5-	68	79.1	8	9.3	10	11.6	86	42.2
7+	30	76.9	3	7.7	6	15.4	39	19.1
	X²= 1.94, NS							
Educational level								
University	31	64.6	12	25.0	5	10.4	48	23.5
Middle	54	78.3	6	8.7	9	13.0	69	33.8
Low	68	78.2	4	4.6	15	17.2	87	42.7
Total	153	75.0	22	10.8	29	14.2	204	100
	X²= 14.38, p<0.01							

Table 4: Consumers' recommendations to improve the quality of subsidized bread.

Variable	Consumers' recommendations						Total	
	Increase price		Improve baking		No. Change			
	No.	%	No.	%	No.	%	No.	%
Monthly percapita income (L.E)								
<200	9	11.7	21	27.3	47	61.0	77	37.7
200-	16	21.3	26	34.7	33	44.0	75	36.8
400+	23	44.2	12	23.1	17	23.7	52	25.5
	X²= 21.31, p<0.001							
Family Size								
<5	20	25.3	19	24.1	40	50.6	79	38.7
5+	23	26.7	31	36.5	32	48.8	86	42.2
7+	5	12.8	9	23.1	25	64.1	39	19.1
	X²= 9.34, p<0.05							
Educational level								
University	21	43.7	19	39.6	8	16.7	48	23.5
Middle	15	21.7	28	40.6	26	37.7	69	33.8
Low	12	13.8	12	13.8	63	72.4	87	42.7
Total	48	23.5	59	28.9	97	46.7	204	100
	X²= 46.31, p<0.001							

Table 5: Impact of income on dispensing foods allocated through rationing card monthly.

Per capita income (L.E)	Dispensed quantity						Total	
	Whole quantity		Partially		None		No.	%
	No.	%	No.	%	No.	%		
Sugar								
<200	64	83.1	8	10.4	5	6.5	77	37.7
200-	59	78.7	10	13.3	6	8.0	75	36.8
400+	36	69.2	9	17.3	7	13.5	52	25.5
Total	159	78.0	27	13.2	18	8.8	204	100
X²= 3.70, NS								
Oil								
<200	61	79.2	9	11.7	7	9.1	77	37.7
200-	53	70.7	14	18.7	8	10.6	75	36.8
400+	32	61.5	11	21.2	9	17.3	52	25.5
Total	146	71.6	34	16.7	24	11.7	204	100
X²= 5.265, NS								
Rice								
<200	52	67.5	17	22.1	8	10.4	77	37.7
200-	49	65.3	14	18.7	12	16.0	75	36.8
400+	17	32.7	16	30.8	19	36.5	52	25.5
Total	118	57.8	47	23.0	39	19.1	204	100
X²= 21.32, p<0.001								
Tea								
<200	51	66.2	12	15.6	14	18.2	77	37.7
200-	42	56.0	14	18.7	19	25.3	75	36.8
400+	8	15.4	15	28.8	29	55.8	52	2.5
Total	101	49.5	41	20.1	62	30.4	204	100
X²= 35.48, p<0.001								

Table 6: Reasons given by rationing card holders for not dispensing allocated subsidized foods.

Type of food	Reasons given						Total	
	Poor quality		Can not afford		Large quantity		No.	%
	No.	%	No.	%	No.	%		
Sugar	12	26.7	11	24.4	22	48.9	45	100
Oil	17	29.3	14	24.1	27	46.6	58	100
Rice	38	44.2	25	29.1	23	26.7	86	100
Tea	63	61.2	16	15.5	24	23.3	103	100

$X^2 = 27.309, p < 0.001.$

Table 7: Effect of educational level on consumers' opinion regarding food subsidy program through rationing card.

Variable	Educational level						Total	
	University		Middle		Low		No.	%
	No.	%	No.	%	No.	%		
Effect on nutrition								
Improved	14	29.2	33	47.8	51	58.6	98	48.0
Partially	15	31.3	13	18.9	19	21.8	47	23.1
No effect	19	39.5	23	33.3	17	21.8	59	28.9
Total	48	100	69	100	87	100	204	100
	X²= 12.573, p<0.01							
Preferred mode of subsidy								
Cards	17	35.5	31	44.9	58	66.7	106	52.0
Cash	31	64.5	38	55.1	29	33.3	98	48.0
Total	48	100	69	100	87	100	204	100
	X²= 14.168 , p<0.001							
Reasons for preferring ration Card								
Cash will not be enough	5	29.4	14	45.2	39	67.2	58	54.7
Increase in price of foods	5	29.4	9	29.0	13	22.4	27	25.5
Food shortage	7	41.2	8	25.8	6	10.3	21	19.8
Total	17	100	31	100	58	100	106	100
	X²= 10.658, p<0.05							

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