

Reaction of consumers against the rising milk prices in Vietnam: A case study in Long Bien district, Hanoi

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ABSTRACT

The milk price to the consumer in Vietnam is considered relatively high compared to the producer price, or compared to other agricultural goods, or compared to incomes. This study aimed to find out how the consumers behaved and reacted against the rising milk prices in Vietnam. The data came from standard questionnaires in a survey of 100 representative respondents in a case study in Long Bien district, Hanoi, Vietnam. Results showed that three factors: the average monthly income of the household, age and career of the respondents (also decision makers in milk consumption of the household) had a significant influence to consumer reaction against rising milk prices. Consumers had a lower professional career, younger and lower incomes normally had stronger reactions against rising milk prices.

Keywords: rising milk prices, consumer behavior, reaction

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I. INTRODUCTION

There are different points of view on the milk price in Vietnam. Some researchers state that milk price to the consumer in Vietnam is one of the highest in the world (Luan, 2008, IFCN, 2006). Others claim that there is no evidence of the high price, and show that prices in Vietnam are within the range of that in neighboring countries (Jonathan, 2010). It is a fact that the retail or consumer price in Vietnam is relatively high compared to the producer price, or compared to other agricultural goods, or compared to incomes. The farm gate price varies considerably among different processors (Nancy et al., 2006). A result from IFCN (2006) and Patrice (2008) research showed that the energy corrected milk price paid in Vietnam was constant for a decade and was lower than that in Thailand and Bangladesh and slightly lower than in India, but higher than in Pakistan.

Milk markets in Vietnam are imperfectly competitive (Jonathan, 2010). It is difficult for consumers to access complete information about the products that they buy. The control of product quality and safety by government agencies is deficient.

Vietnam issued a regulation on price registration and control in 2010 in order to reduce fluctuation and stabilize prices of many products, including dairy products. The policymakers believe that dairy companies raise milk prices because of spending too much money on advertising and promotion. However, results from Jonathan's study (2010) show that the price would not be lower or even stabilized due to: (i) the unexpected immediate impact of the new policy would be a price increase because dairy companies raised prices before the implementation date of the new circular to avoid the need to re-register prices after the policy came into effect and (ii) the high administrative costs of registering inputs, outputs, wholesale, and retail prices. Thus, dairy companies would pass these additional costs on to consumers. Yet, we do hope that this regulation will be the opening point for future success in controlling the price of milk in Vietnam.

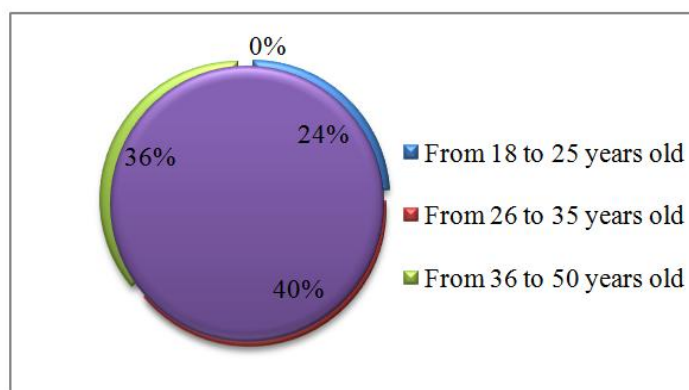
Many studies have researched about the rising milk price in Vietnam. But almost none of them research about the reaction of consumer against the rising milk prices. Therefore, this study has been done to find out the way consumers behave and react against the rising milk prices in Vietnam.

II. METHODOLOGY

2.1 Primary data

Primary data were collected through standard questionnaire, oriented interviews, expert consultation, and in-depth interviews. Firstly, we applied oriented interview, and consulted experts, combined with secondary data to select necessary respondents based on four basic criteria as age, occupation, education and household average monthly income of respondents. We found out 100 representative respondents who decided milk consumption behavior of the household level. Then, we used standard questionnaires to collect data.

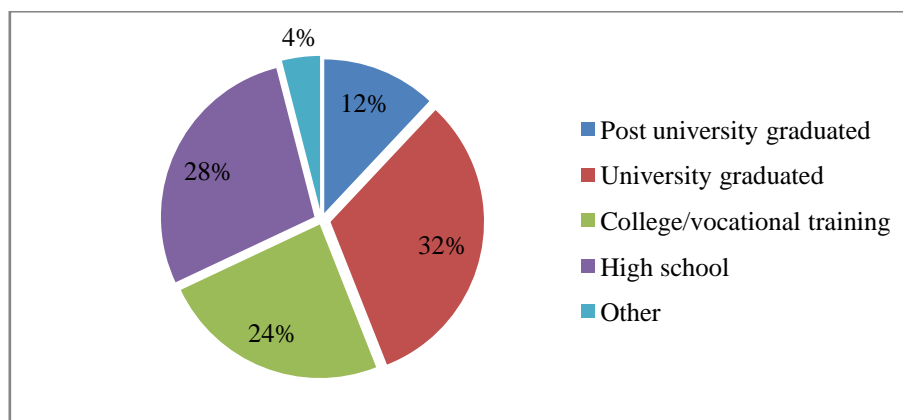
According to the real situation of Vietnam, we chose 100 women aged from 18 to 50 years old, who played an important role in households' health care, spending and decide to purchase and pay for the milk.



Source: Survey data, 2015

Figure 1: Age of the respondents

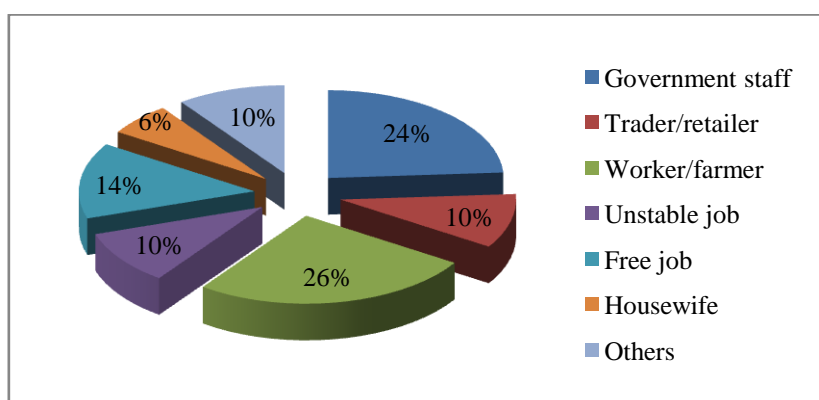
The educational level of the respondents consisted of postgraduates; graduates; college or vocational training; high school; and others (secondary, primary).



Source: Survey data, 2015

Figure 2: Educational level of the respondents

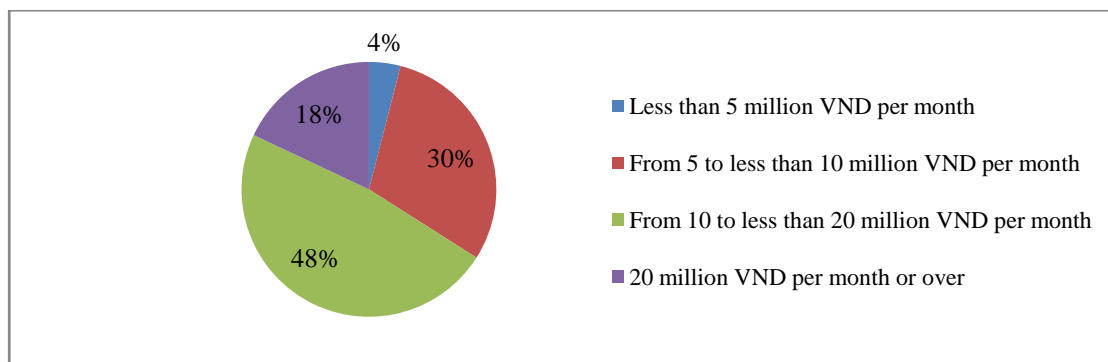
About occupation, we chose the popular careers in Vietnam including: government staff; trader/retailer; worker/farmer; unstable job; free job (such as street vendor); housewife; and others.



Source: Survey data, 2015

Figure 3: Occupation of the respondents

The average monthly income of the respondents' household included: less than 5 million Vietnam dong (VND) per month; from 5 million to 10 million per month; from 10 million to 20 million per month; more than 20 million.



Source: Survey data, 2015

Figure 4: Monthly household income of the respondents

2.2 Method of Data Analysis

The research used OLS regression to compute the effects of some consumers' characteristics of this population of the reaction behavior of the consumers against the rising milk prices.

The reaction behavior equation:

$$Y_{li} = \chi_{li}\beta_l + u_{li}u_{li} \sim N(0,1)$$

Where Y_{li} is the latent dependent variable

χ_{li} is the vectors that are assumed to affect the probability of sampled consumers react against the rising milk prices

β_l is vectors of unknown parameters

u_{li} are residuals that are independent and normally distributed with zero mean and constant variance

Table 1. Description of the dependent and independent variables used in the model

Variables	Description	Types	Values
AGE	Age	Continuous	Number of years
EDU	Education level	Dummy	0= postgraduates; 1= graduates; 2= college or vocational training; 3= high school; 4=others
JOB	Career	Dummy	0= government staff; 1= trader/retailer; 2= worker/farmer; 3= unstable job; 4= free job; 5= housewife; 6= others.
INCOME	Average monthly income of household	Dummy	0= household income less than 5 million per month; 1= household income from 5 million to less than 10 million per month; 2= household income from 10 million to less than 20 million per month; 3= others.
Y_{li}	Reaction of consumers	Dummy	0= Strong reaction; 1 = average reaction; 2= Weak or no reaction

The **strong reaction** consumers are those who regularly pay attention to milk price. They are very sensitive to the promotions, discounts, as well as price increases. They generally increase the amount of purchase to participate in promotions or discounts program, and they stop buying, buy less or change to other products when prices rise.

The average **reaction** consumers are those who only pay attention to price when prices increase quite high. They also increase the amount of purchase to participate in promotions, discount program. They still buy even prices increase, but reduce the amount of purchase.

The weak **or no reaction** consumers are those who pay no attention to the price. They do not care about the promotion or discount programs. They will still buy even the prices go up or down.

III. RESULTS AND DISCUSSION

3.1 Behavior and reaction of the consumers against the rising milk prices in Long Bien District, Hanoi

Among 100 surveyed consumers, there were 42 people responded that they usually paid attention to the fluctuation of the milk prices in the market, especially when prices rose. They were also followed the discount or promotion program of the milk companies in the market. There were 36 respondents sometime paid attention to the price. They normally concerned for the price if it was suddenly changed, changed fast or shock. The rest 22 people almost neglect and did not pay attention to the change in prices of milk.

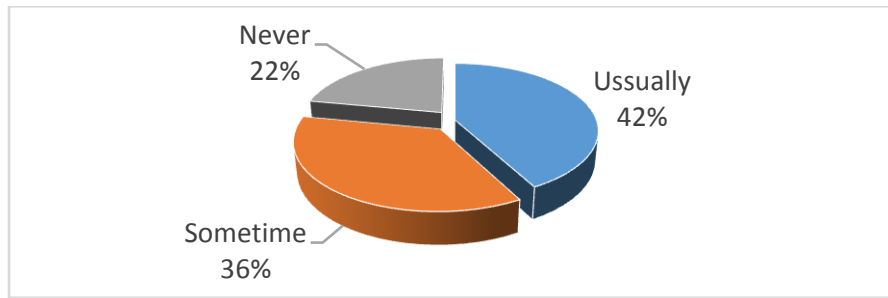


Figure 5. Habits of tracking the milk price

Source: Survey data, 2015

Most of surveyed consumers responded that the price of milk on the market was quite high (64%). There were 24% said milk that the prices were very high. Only 12% respondents said that it was at an acceptable level, no one said that the price was quite cheap and cheap.

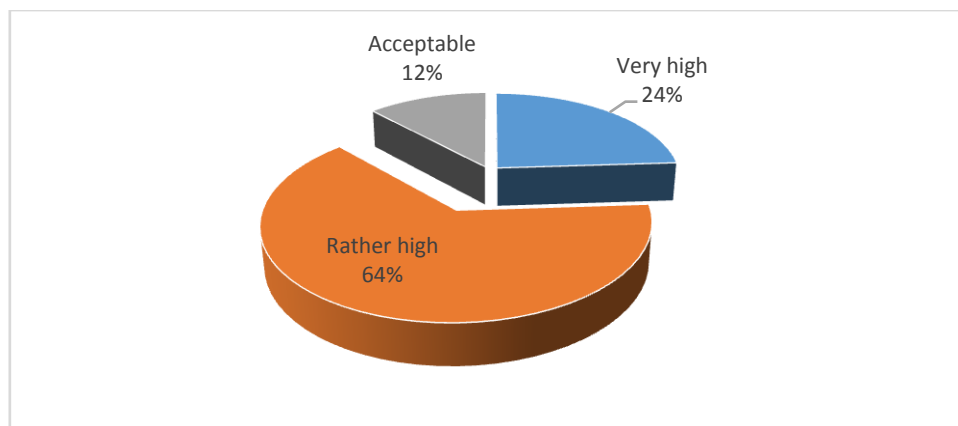


Figure6. Consumers' evaluation of milk price

Source: Survey data, 2015

Evaluation of the satisfaction level of milk prices corresponding to perceived quality, consumers provided a neutral point of views. Most of them said that the price was acceptable relevant to the quality (64%). There were 8% of people satisfied and 28% of them dissatisfied with the price.

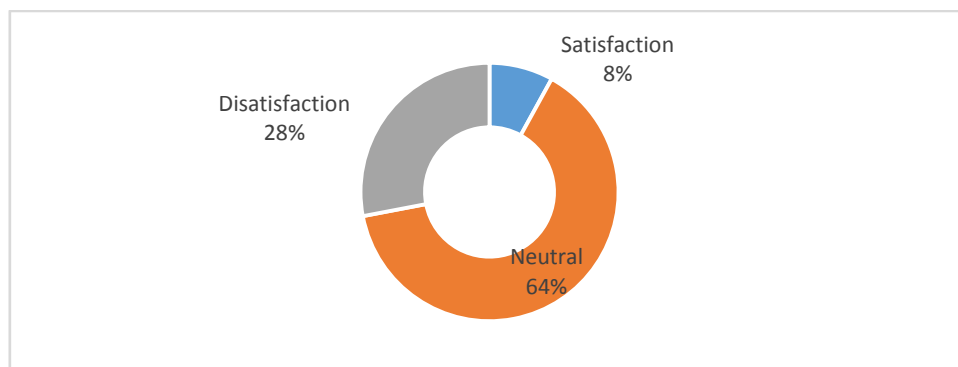


Figure7. The satisfaction level of consumers about the milk price corresponding to perceived quality

Source: Survey data, 2015

The results surveyed showed that, if the price of milk increased, there were 22 people would react strongly, 50 people provided moderate reactions. Only 28 people would have little or no response. This may imply that the sensitivity of consumers' reaction to the rising milk prices is quite high.

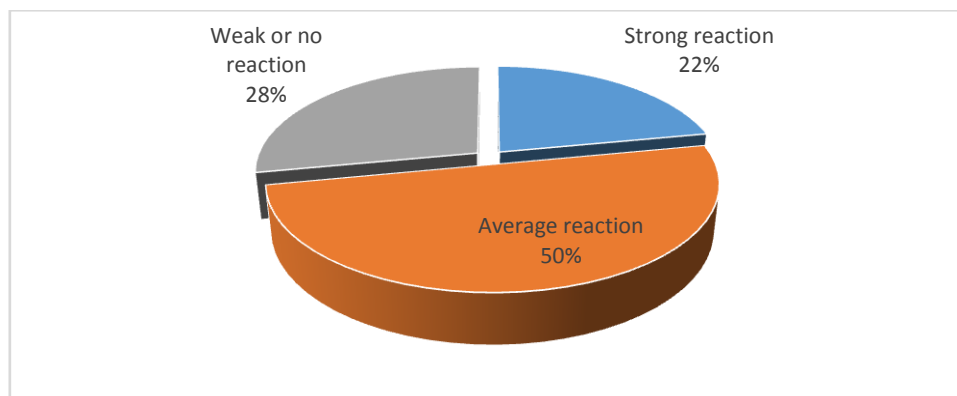


Figure 8. Reaction level of the consumers against the rising milk prices

Source: Survey data, 2015

3.2 Factors affecting the reaction of consumers against the rising milk prices

Age of consumers versus their reaction against the rising milk prices

The ratio of the average reaction of the respondents from 18 to 25 years old occupied 58.33%, while the ratio of the strong reaction was 33.33%, and only 8.33% were weak or no reaction. The higher age group, from 26 to 35 years old respondents, showed a reduction in the ratio of strong reaction (20%), while the average reaction was 65%, and weak or no reaction was 15%. At the age group from 36 to 50 years old, the percentage of consumers have reacted strongly was smaller among three age group at only 16.67%, and only 27.78% of them have average reaction, the rest 55.56% had weak or no reaction.

Table 2: Age versus reaction of consumers

Age level	From 18 to 25		From 26 to 35		From 36 to 50		Total (People)	Ratio (%)
	People	Ratio (%)	People	Ratio (%)	People	Ratio (%)		
Strong reaction	4	33.33	4	20	3	16.67	11	22
Average reaction	7	58.33	13	65	5	27.78	25	50
Weak or no reaction	1	8.33	3	15	10	55.56	14	28
Total	12	100	20	100	18	100	50	100

Source: Survey data, 2015

Income versus reaction of consumers

There was a tendency of the reverse relationship between income and level of consumer reaction against the rising milk prices. It seemed that the higher income level of the respondents had a weaker level of reactions. There were 100% of the lowest income level had a strong reaction. For the income level from 5 to less than 10 million, 53.33% had strong reaction and 40% have average reaction. The higher income level from 10 to less than 20 million, a strong reaction rate was only 4.17%, ratio of weak or no reaction increased to 20.83%. The highest income level of 20 million and over tended to have a weak reaction with 89.11%.

Income	Less than 5 million		5 to less than 10 million		10 to less than 20 million		From 20 million and over		Total (People)	Ratio (%)
	People	Ratio (%)	People	Ratio (%)	People	Ratio (%)	People	Ratio (%)		
Strong reaction	4	100	16	53.33	2	4.17	0	0	22	22
Average reaction	0	0	12	40	36	75	2	11.11	50	50
Weak or no reaction	0	0	2	6.67	10	20.83	16	88.89	28	28
Total	4	100	30	100	48	100	18	100	100	100

Source: Survey data, 2015

Occupation versus reaction of consumers

The surveyed data did not indicate clear trends between occupation and the level of consumer reaction against the rising milk prices. In absolute terms, the numbers of respondents who had more stable and professional job, had a stronger reaction against rising milk prices. But in the relative level, it seemed that the ratio of respondents with more stable and professional job had weaker reaction.

Reaction level	Strong reation	Average reaction	Weak or no reaction	Total
Government staffs	4	16	4	24
Traders/retailers	4	3	3	10
Worker/farmers	5	12	9	26
Unstable job	4	3	3	10
Free job	2	7	5	14
Housewife	1	4	1	6
Others	2	5	3	10
Total	22	50	28	100

Source: Survey data, 2015

Educational level versus reaction of consumers

The survey data showed a slight tendency effect between the level of education and the level of consumer reaction against the rising milk prices. Consumers with high qualifications tend to react more strongly to rising milk prices than people with lower qualifications.

	Post graduates	Graduates	College or vocational training	High school	Other	Total
Strong reation	4	6	6	5	1	22
Average reaction	6	17	10	15	2	50
Weak or no reaction	2	9	8	8	1	28
Total	12	32	24	28	4	100

Source: Survey data, 2015

Affecting factors to the reaction of consumers against the rising milk prices

In the selection equation of the regression model, three variables were found to be significant affecting determinants to the reaction of consumers against the rising milk prices. These were age (AGE), career (JOB) of the respondents (also decision makers in milk consumption), and monthly income of households (INCOME).

Table 2. Affecting factors to the reaction of consumers against the rising milk prices

Variables	Coefficient	St.error	t-ratio
Constant	0.737	0.181	0.0002**
AGE	-0.251	0.135	0.0688***
INCOME	-0.673	0.090	0.0000*
JOB	0.114	0.059	0.0615***
EDU	0.056	0.097	0.5645 ^{NS}

Source: Survey data, 2015

$F=17.91$, number of observations (N) = 100, Multiple $R=0.783701$; R -squared= 0.614187 , Adjusted R -square= 0.57989 , significance level= 0.0000 , * and ** represents a significant level at 1%, 5% and 10% probability level, respectively. NS: non statistically significance.

There are two variables, age of the respondents, also decision makers in milk consumption of the family (AGE), and monthly income of the households (INCOME) had negative effects on the reaction of the consumers against the rising milk prices and found to be significant at less than 10% probability level. The job of the respondents (JOB) had a positive impact on the reaction of consumers against the rising milk prices. That means, the younger consumers, the less stable and professional job of the respondents, and the lower income of the households will have the stronger reaction against the rising milk prices. In which, the impact level of income is more than twice higher than that of the age and six times higher than that of job.

IV. CONCLUSION

The study results showed that three of the four studied factors: the average monthly income of the household, and age and career of the respondents (also decision makers in milk consumption of the household) had a significant influence to the reaction of consumer against rising milk prices. Consumers had more professional careers such as government officers, traders react stronger than those with less professional career such as workers, farmers, housewives. Older consumers and consumer with higher incomes also react stronger against the rising milk prices.

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