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Economic Analysis of Profile of Consumer's Dairy in Santa Maria - RS – Brazil

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Introduction

In Brazil, UHT milk consumption grows at the same time that the preference for pasteurized milk decreases. The practicality of this type of milk and the emergence of alternatives to traditional packaging box seem to attract more consumers. However, pasteurized milk is still present in daily life of many consumers due to its lower price. This paper presents insights on the preference for this type of milk that seems to lose, not only space on the table of most Brazilians, but also in economic literature.

According to Fernandes (2006), pasteurization is characterized by a thermal process to minimize adverse health effects with few changes in the chemical properties of milk. This process uses temperatures between 72 ° C to 75 ° C degrees for 15 to 20 seconds and then cooled to 4 ° C and finally, packed. The packaging must ensure protection against contamination. Milk Ultra High Temperature (UHT) is initially taken to temperatures between 130 ° C to 150 ° C for 2-4 seconds cooled to temperatures below 32 ° C and packed in tightly closed container. According to Silva apud Fernandes (2006), UHT processed milk may undergo changes that compromise their quality.

The increase in purchasing power in recent years coupled with the greater preference for higher quality products and health benefits encourages increased demand for milk. The changes in the routine of Brazilians consumers also cause changes with regards the choice of the type of packing (trying to ease the packaging of the product). According to Silva (2008), one of the factors that interfered significantly in the dairy market has been the emergence and growth of UHT milk. The consumption of goat milk showed, after the Real Plan, an increase of 340%. Also, the increased demand for UHT milk is explained by factors such as the new lifestyle and the facilities provided by the supermarkets.

In the U.S.A., for example, almost all the milk consumed is pasteurized while fresh milk consumption, UHT and even powdered milk are still small. Brazil does not seem to follow the trend of quality fresh milk as the United States, but that is an alternative for the Brazilian dairy market which has also much to develop (Gomes apud Fernandes, 2006).

Material and Methods

The theoretical basis of this study was based on the Consumer Theory of Microeconomic Theory. Individuals seek to maximize their own satisfaction from consuming goods which provide some level of utility given the budget restrictions.

This paper seeks to answer what are the variables that determine consumer choice between pasteurized milk and UHT milk (and not between milk and other goods). Thus, it was considered that the most appropriate use indifference curves to substitute goods. Pasteurized and UHT milk are not perfect substitutes as they have differences in the way of storage, the quality and validity

which means that many consumers may not be totally indifferent to consume one kind or another. However, it is expected to be substitutes to some extent (Varian, 2000).

As already mentioned, is not expected that the two types of milk are considered perfect substitutes (like the variable in this case weigh heavily in choice), or the cheaper milk does not dominate the entire market once it is differentiated products.

Primary data were collected through direct interviews with consumers of UHT milk and pasteurized in two supermarkets in Santa Maria - RS during the month of February 2010. A total of 250 questionnaires were applied. Data were tabulated and analyzed jointly.

Results and Discussion

Most of the consumers thought about their consumption decisions only at the time of the interview, i.e. the decisions on consumption of milk are routinely performed without an exercise in order to maximize its usefulness. The percentage of individuals who did not remember the approximate amount of milk they bought - 7.2% - or the approximate price they pay for a liter - 16% - shows that the purchase is an automatic act. Despite this research will provide consistent answers according to the economic theory, where consumers do not demonstrate to think about their decisions at the time of purchasing.

Milk consumption recommended by the Ministry of Health for adults over twenty years, is 219 liters per year (Zoccal, 2009). Consumption in Brazil, however, is quite small. It was found in research that the amount consumed is, on average, 96 liters per year. Therefore, milk consumption is extremely insufficient. People consider it an essential good, but still do not drink enough which is quite alarming.

Many people approached during the data collection could not be surveyed because they consumed only milk from dairy cows, which was not the object of research. Although these results are interesting, there are discussions about the search for milk of better quality; milk is still not benefited from the reality of many consumers.

Meanwhile, other consumers of milk pasteurized, asserted that the UHT milk is not very close to what they think is a real cow's milk due to the absence of natural taste. On the contrary, consumers of UHT, generally believe that pasteurized milk is not very good and is considered an inferior product, especially in terms of quality.

UHT milk is the exclusive choice of 81.2%. This results result is in line with studies that claim to be this option in Brazil. The choice of UHT milk is due mainly the availability of skimmed milk, as well as the perception that this is a product of superior quality and more practical.

Taking only buyers pasteurized milk, it appears that only 15% has income exceeding R\$ 3,000.00. It also confirms another assumption of consumer theory - that the level of income is one of the main variables in the choice of goods. Thus, consumers of pasteurized milk have a lower income and single pasteurized milk primarily because of price.

Likewise, 25% of consumers of UHT milk have income lower than R\$ 1,000.00. This result is also in line with economic theory, where consumers with lower income prefer to consume UHT milk due to its characteristics. Thus, the statistics in relation to income show that the pasteurized milk is really an inferior good, whilst the UHT milk is a superior good. The average price paid for the UHT milk is R\$ 1.50 per gallon (standard deviation of R\$ 0.29). The average price of pasteurized milk is R\$ 1.13 (standard deviation of R\$ 0.17). The values of standard deviations indicate that consumer perceptions of pasteurized milk are more uniform than those who buy UHT milk.

Considering that pasteurized milk is cheaper and consumed by the general public a lower income, this figure also indicates that the public is more aware of price as well, because of the disparity between the prices. At the same time, this finding indicates that pasteurized milk prices do not vary much from one brand to another as does the UHT milk. Approximately, 64% of consumers (taking the buyers aggregated) take into account the price at time of purchasing.

One of the factors investigated as possible to generate a preference for UHT milk was the practicality of the pack. It was confirmed that this is, indeed, a cause for the purchase. About 69% of consumers of UHT milk confirmed that packaging is the deciding factor for choice. However, many individuals who acquire both pasteurized milk and UHT, said the UHT packaging is much more appropriate.

Approximately, 54% of consumers of UHT milk make the purchases daily or once or twice a week, whilst 46% buy once or twice a month. This result indicates that there is a tendency to stocking the product and the frequency of purchase is not a relevant attribute in the preference for UHT milk. The criteria that a product with superior quality is also confirmed by 72% of UHT milk consumers. For consumers of pasteurized milk, price is an important factor in the choice of 80% of consumers, while flavor (considered better than the UHT milk) is cited by 66% of respondents as an important variable.

Although many consumers have preferences between brands, only for those with income over R\$ 5,000.00, the brand is often identified as more important than other factors. For consumers with income lower than R\$ 500.00, packing and validity have been highlighted as important. This result is surprising and is not very consistent with the expectation – i.e. usually the price is considered the most important variable in choosing. It might be considered that many individuals may have felt ashamed to admit the importance of price. The level of income was only asked at the end of the questionnaire i.e., after the respondent has already answered what factors are important. Nevertheless, this result is not very coherent. Finally, the data show a rational economic behavior. The price is an important attribute for the majority of respondents, although lose a little importance for individuals with higher income. At the same time, due to the specificity of the product (milk is an essential) there is a concern about other factors.

The milk powder was included in this research only as a possible alternative use. Generally, milk powder is purchased along with other types of milk. Thus, due to the small sample size, we could not identify its consumers. When asked about the possibility of abandoning the consumption of powdered milk if the price rises, only 28% are willing to stop buying it. The socio-economic profile of these consumers shows that 72% have at least incomplete college and a monthly family income exceeding R\$ 3,000.00. However, this product is actually purchased by a different audience - with higher income and education and not willing to replace the consumed product.

The variable that has generated more questions from the interviewees refers to the maximum price you are willing to pay for a gallon of milk - 8.4% of consumers were not able to answer it. Many responded a value lower than stated as paid for a liter - even after being informed of what is the maximum willingness to pay. These responses do not demonstrate a rational economic behavior and hampers the attempt to calculate the maximum willingness to pay widely discussed in microeconomic theory, but difficult to verify in practice.

The average maximum value was R\$ 1.86 for the UHT milk with a standard deviation of R\$ 0.49 while for pasteurized milk, it was R\$ 1.63 with a standard deviation of R\$ 0.65. Considering the values quoted by most consumers of both types of milk, it is noted that pasteurized milk consumers are willing to pay 50% more for the product, whilst consumers UHT milk are willing to pay 33% more. These percentages indicate that those who buy UHT milk are willing to pay proportionally less because of the possibility of changing product, although the level of income of this kind of milk is higher.

The results show that 33% of consumers are willing to substitute milk for UHT pasteurized if the price of UHT reached a maximum value, 16% would decrease the amount but would not exchange the product, whilst 51% would continue to buy. Moreover, 73% of consumers would switch to pasteurized milk for UHT if it would have a value equal to the pasteurized milk or at least, a little lower than its current price - which shows that there is an unmet demand for UHT milk. Decreasing prices of UHT packaging would allow these consumers to purchase the product. Thus, the UHT milk is a substitute for pasteurized milk, but the contrary is not true.

Conclusions and Outlook

We conclude that UHT milk is gaining more space in consumer preference, mainly due to its practicality and consumer perception of being top quality milk, whilst pasteurized milk loses ground due to the same reasons. The shopping is done automatically, because consumers did not seem to question themselves about the reasons for the purchase and the possibility of making substitutions or change their consumption behavior.

Milk consumption is, on average, too low. It requires measures to encourage increased because it is a healthy product. Pasteurized milk is the choice, especially for an audience of lower income. It was found that it is an inferior good - the increase in income causes a reduction in consumption. The price is a concern for most consumers of milk, confirming the assumption of microeconomic theory that it influences the choice. However, considering milk an essential and indispensable good, consumers are also concerned with the quality of what they're buying.

In practice, the willingness to pay is difficult to verify because consumers do not think about their choices. However, it was found that individuals, who believe that milk is a commodity, are willing to continue to buy it even if prices increase. UHT milk has proved to be a substitute for pasteurized milk. In general, consumers of pasteurized milk are willing to switch to another product if the price of UHT milk would be lower. This demand could be satisfied if a cheaper package of UHT could be used in order to diminish the price of the final product. Pasteurized milk, however, is not a direct substitute for the UHT milk.

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