

FACTORS THAT INFLUENCE MILK CONSUMPTION WORLD TRENDS AND FACTS

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ABSTRACT

There is a growing change in the food market in the world, especially in developing countries. This change is based on increasing in consumers' standards of living, which are considered as the factors affecting the changing lifestyles and worldwide trends in consumption. Regarding milk consumption it is important to find the association between personal and environmental factors with intention to consume milk and therefore enterprises involving milk business will have helpful decisions and strategic planning for expanding their business. The aim of this study is to make an overview of the economics behind world milk production and consumption. Also, social and economic factors that influence the consumer's behavior towards milk and milk products consumption are analyzed as different case studies from different countries. This study is based on the literature review and in different case studies from different parts of the worlds to try to fulfill the main scope of giving the best practices on milk production and consumption.

Keywords: Milk production, milk consumption, socio economic factors, dairy market, milk processing.

INTRODUCTION

Throughout the world, there are more than 6 billion consumers of milk and milk products, the majority of them in developing countries. As such, if it is to keep pace with the growth in demand, milk production will need to grow by close to 2 percent per year. Approximately 150 million households around the globe are engaged in milk production. In most developing countries, milk is produced by smallholders, and milk production contributes to household livelihoods, food security, and nutrition. Milk provides relatively quick returns for small-scale producers and is an important source of cash income. In the last three decades, world milk production has increased by more than 50 percent, from 500 million tons in 1983 to 769 million tons in 2013. (FAO, 2016)

Some countries in the developing world have a long tradition of milk production, and milk or its products have an important role in the diet. Other countries have established significant dairy production only recently. Most of the former countries are located in the Mediterranean and Near East, the Indian subcontinent, the savannah regions of West Africa, the highlands of East Africa and parts of South and Central America. Countries without a long tradition of dairy production are in Southeast Asia (including China) and tropical regions with high ambient temperatures and/or humidity.

India is the world's largest milk producer, with 18 percent of global production, followed by the United States of America, China, Pakistan, and Brazil. Since the 1970s, most of the expansion in milk production has been in South Asia, which is the main driver of milk

production growth in the developing world. Milk production of cow and buffalo in 2013 was 755-million Tons ECM, which is 94% of the total world milk production. (IFCN Dairy report 2014)

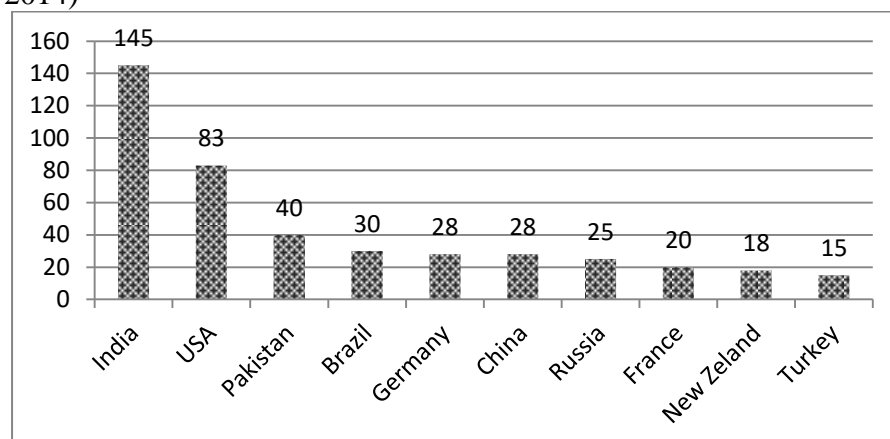


Figure 1: Milk Production (million tons)

Source: IFCN, Dairy Report 2014

Concerning trends in annual milk production we will see that the country with the higher increase is India +4.1% and with higher decrease is China -9.8%. Milk production during 2015 among world bigger suppliers is expand by 1% from 2014, which is the year with a strong sharp percentage of 4%. The total milk production from Major Exports, Argentina, Australia, New Zeland, US, European Union, goes according the below trends.

Table 1: Milk Production Summary for Major Exporters (Million Metric Tons)

	2014	2015 Preliminary	2016 Forecast	2016 vs 2015 Cgange in %
Argentina	11.3	11.5	11.7	2%
Australia	9.7	10.0	10.0	0%
EU-28 countries	146.5	148.1	149.0	1%
New Zeland	21.9	21.4	20.7	-3%
United States	93.5	94.5	96.3	2%

Source: USDA, December 2015

Milk consumption and factors that influence it

Regarding factors influencing consumption of dairy products, socio-economic and demographic characteristics, like gender, age, income, education, presence of young children in the household, ethnicity and level of knowledge influence all over the world households' expenditure for dairy products. Accordingly, the potential of increasing household's income, higher level of education and greater presence of young children in the household have positive effects on the household's consumption of dairy products.

Aside from the socio-economic and demographic factors discussed above, consumers' health consciousness has been found to significantly affect the household's consumption of dairy products. Bonaventure and Wendy (2012), and McGill et al. (2008) found that consumers who perceive dairy products as a good source of nutrients have higher consumption level of dairy products than other consumers. Grunert et al. (2000) suggest that manufacturers/processors and marketers must understand consumers' perceptions of dairy product quality. He added that consumers consider four dimensions when forming perceptions about dairy product quality. These includes: hedonic (e.g. sensory attributes such as taste or smell), health-related, convenience-related (e.g. distance from consumer's house to

markets or shops), and process-related (e.g. production processes such as organic, animal welfare).

Several studies have found that gender and presence of young children in the household significantly influence decisions on milk purchases. Female-headed households were found to be significant in affecting dairy products' expenditure (Phuong et al., 2013a). They were also generally more health-conscious than men (Radam et al., 2010). Additionally, the households with greater presence of young children less than 12 years of age were generally less concerned about price and more interested in purchasing safe milk products.

In addition to gender, ethnic group, household composition and size of young children in the household, other demographic variables such as income and educational level have been found to significantly influence milk consumption. De Alwis et al. (2009) found that the household's monthly income and level of education play a more important role in milk consumption. Consumers with higher income were more likely to purchase milk products and respondents who had completed higher level of education were more likely to consume dairy products (Ebru and Neslihan, 2013).

Also, consumers' behavior, preferences and attitudes toward consumption of dairy products substantially differs between rural and urban. By determining the effect of personal and environmental factors on children's intention to consume milk in Selangor (Malaysia), Babolian and Ab Karim (2010) showed that attitudes toward sensory properties had the highest effect while in the urban area the highest effect belongs to the availability of milk at home. Phuong et al. (2013a) found that urban households consume much more dairy products than those in rural area.

According to a study carried out in Northern Vietnam (Quang Trung and al, 2014), there were identified the personal and environmental factors which were considered as influencing the milk purchasing decisions such as whether to buy or not to buy milk and the budget for purchasing. They are household income, main income source of the household, presence of children and elders in rural household, age, gender and educational level of the household head, head's perception on milk price and origin, and convenience of the place for buying milk. The impacts of these factors on milk consumption of Northern Vietnam households in were examined by using a two-step econometric technique.

The integrating results showed that household's income and convenience in milk buying have strongly positive effects on milk consumption. At the lighter level, numbers of children and elders in the house also have positive effects on the probability of milk purchasing and milk expenditure. Meanwhile, educational level was only found to affect milk expenditure of the households. In contrast, age of the rural household head and the importance of milk price have significant negative effects on both decisions of milk consumption, decision to buy milk and level of milk expenditure.

Results coming from a study in Eastern Turkey show that there are socio-economical differences between urban and rural populations in terms of age, education, occupation, and income, all of which affect their consumption behavior. The rural consumers generally consume raw (unpasteurized, unpackaged) milk. These consumers tend to have low incomes and be illiterate. The urban consumers, on the other hand, consume pasteurized milk, have higher incomes compared with the rural consumers, and have a mid-level to university education. Determinants of household socio-economic status extracted by exploratory factor

analysis in Iran detected three significant components for socio-economic status that could explain 70% of variance in socio-economic status. These components include educational level and occupational status/expenditures/housing appliance, family size/ethnicity, and area of residency/district/property ownership. According to this study, with an increase in family size, the second factor score increases; residency in the center of the province, having a house and ownership of more properties increase the third factor score. The first factor comprises four variables of education, occupation, total household expenses, and housing appliances scores based on the factor loadings, which was named as the main socio-economic factor. The second factor combines family size and ethnicity scores. The third factor includes the residency and property ownership scores. With an increase in family size, the second factor score increases; residency in the center of the province—having a house and ownership of more properties—increases the third factor score.

Based on another study in West Azerbaijan, the findings imply that the majority of consumed milk in both the urban and rural areas was traditionally processed bulk milk. Consistent with these results, a survey by Mohammadi et al. showed that upon implementation of a cash transfer policy, milk and dairy consumption reduced in low-income households as a response to price changes. This would be an inevitable policy consequence unless the government takes appropriate compensational actions. For example, milk consumption in India has increased from 39 to 66g/day in a 5-year period. In fact, the Indian government has significantly contributed to this process by reducing import rates, supporting dairy producers, and encouraging investments in this sector. Meanwhile, the relationship between income and milk consumption has clearly been shown among Indian families (Bhaskaran, 1996). According to this study, consumption of pasteurized and ultra-high-temperature (UHT)—processed milk was higher among the urban households; bulk milk consumption was popular in the rural areas of the West Azerbaijan Province. A study carried out in Pakistan indicated the same trend: In rural areas, the majority of individuals consumed bulk milk, but packaged milk was the main milk in urban areas (Gilani, 2011). A different pattern could be seen in an industrialized country such as England where distributed milk was as pasteurized (87%) and UHT (8.7%) (Foster et al., 2007). It is needless to emphasize the role of environmental factors such as processing, storage, packaging, price, and availability on milk demand.

According to a study carried out in Albania (Kapaj et al., 2011) urban consumers are very much affected from the milk attributes. There is also a strong relation between the milk consumption and socio-economic factors of the urban consumers. The most important factors that influence milk consumption are income level and presence of children. It is also important to emphasize that consumers in their market behavior are also based in their preferences on the milk attributes. Based in the study it is possible to identify four milk consumers groups according to their preferences on the product attributes. These groups, according to their preferences on milk, are: (1) UHT domestic no-fat milk, purchased in the trusted local shops; (2) UHT domestic no-fat milk, purchased in the trusted local shops; (3) UHT imported low-fat level milk; and (4) fresh pasteurized high-fat level milk, purchased in the supermarket (Kapaj et al., 2011). All these groups represent different potential market segments with specific characteristics. The elaboration of the data shows that the most important attribute for the milk consumers is the “fat level.” According to the results, three of the four groups (representing 90.8% of the survey) have chosen fat level as the most important attribute.

CONCLUSIONS

In recent decades, developing countries have increased their share in global dairy production. This growth is mostly the result of an increase in numbers of producing animals rather than a rise in productivity per head. In many developing countries, dairy productivity is constrained by poor-quality feed resources, diseases, limited access to markets and services (e.g., health, credit, and training), and dairy animals' low genetic potential for milk production. Unlike developed countries, many developing countries have hot and/or humid climates that are unfavorable for dairying.

As rural consumers' income improved create a potential rural market for firms to expanse their business (Liu and Zhang, 2007). Recent consumer research suggests that food consumption is becoming increasingly diverse and consumers are growing more concerned about the quality, safety and nutritional content of their food (Phuong et al., 2013; Thang and Popkin, 2004). There are some factors which were cited as the key driving forces within the food consumption have been and will remain: health benefits of food (Hartog et al., 2006; Grunert et al., 1996), value of food (Alden, 2007), how the food is manufactured, convenience and suitable packaging (Hoyer and MacInnis, 1997).

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