

Postmodern consumer research: Introspective review on the study of milk

Renuka Malik¹, Renu Arora², Sunita Aggarwal³ and Balbir Beniwal⁴

¹Assist Professor, Dept of Home Science, Government College, Bahadurgarh, Haryana

²Associate Professor, Dept. of Home Management,
Institute of Home Economics (University of Delhi), New Delhi

³Associate Professor, Dept. of Microbiology,
Institute of Home Economics (University of Delhi) New Delhi.

⁴GM, Delhi Milk Scheme, New Delhi

Abstract: In past two decade the social and economic developments along with technological advancement, especially in developing world, have significantly influenced the demand and supply, increase in productivity, emergence of large scale commercial dairy farms and consumption patterns and profit loss margin. This has given rise to the safety problems of masses as well as an individual health. Although information on environmental, chemical and other adulterants in milk have been available since 1980s, it is relatively in recent years that public awareness of the issue has come into existence. Last one decade has emphasized research on consumer studies and awareness as well as on milk and milk products. Article takes a historical perspective on changes in studies on consumer and on understanding of the food safety hazard in milk, their sources and means of prevention. The paper reviews previous work and major trends in consumer research and awareness in present time. It also describes the previous arrangements, how they have changed to the present day, and might change in the future.

Key words: consumer, consumer research, consumer awareness, milk research, milk quality

Introduction: Milk and milk products are nutrient-dense foods that supply energy as well as significant amounts of protein and micronutrients to individual / people. The role of milk and milk products in human nutrition has been increasingly debated in recent years, both in scientific and in popular science literature. With the increasing world income growth and urbanization, there is change in increasing overall food dietary and overall food composition particularly towards milk. Average per capita daily energy intake in the developing world increased from 1861 kcal in 1961 (64 percent of the average intake in developed countries) to 2651 kcal in 2007 (78 percent of the average energy intake in developed countries) (FAOSTAT, 2011). Milk as a major source of dietary energy, proteins and fat, contributes on an average 134 kcal of energy, 8 g of protein and 7.3 g of fat/capita per day in 2009 (FAOSTAT, 2012). This significant change has influenced the demand and supply chain (seasonal fluctuations) and raised the safety issues of consumers especially in the developing world. This paper reviewed the major trends in consumer research in recent years and highlighted or put emphasis on food safety hazard in milk.

Consumer studies: The word consumer is derived from 'consume' as make away with, use up, devour, and eat or drink up. 'Consumer' means persons and families purchasing and receiving food in order to meet their personal needs (FSSAI, 2006). The concept of consumer studies has evolved from the market based trading – selling, buying and consuming. Human action and

interaction, behaving in different roles in exchange markets and various trading situations is a typical of consumers. The development of consumer studies (McCracken 1988; Burke 1993; Miller 1998; Sasseatelli 2007) can be analyzed in terms of consumption and consumer behavior. It can be divided into three phases from 1960s as 'consumer behavior' to 1980s as 'consumer research' and further to the 1990 and 2000s as 'consumer culture' (figure 1).

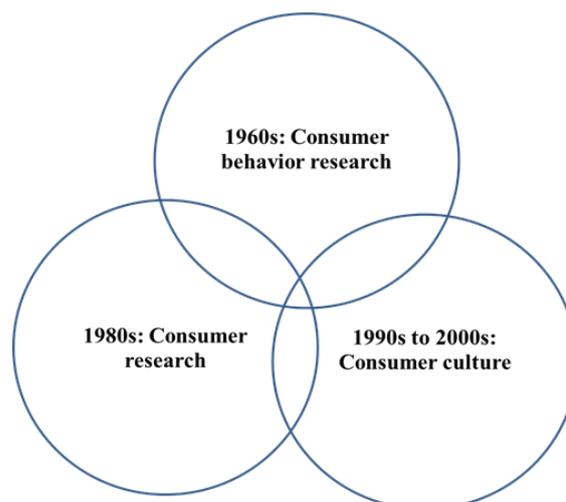


Fig 1: Stages of consumer studies (Ryyananen T, 2010)

During 1950s and 1960s, consumer studies emerged as an academic discipline (Arndt 1986) with its rationale to provide a more "gentle" approach to the influences on consumer behavior

than is normally found in the cases of marketing or advertising studies. There were several alternative approaches towards doing business referred to as the production concept, the product concept and the selling concept. The term consumer behavior is defined as the behavior that consumers display in searching for purchasing, evaluating and disposing of products and services that they expect will satisfy their needs; it is the decision process and physical activity in which an individual is engaged in while evaluating, acquiring, using or disposing goods and services (Loudon and Della Bitta 2004). The academic studies of consumer behavior are more interested in the larger contexts of consumption, whereas marketing researchers are more interested in practical solutions to the problems of company's challenges and marketing managements (Morris Holbrook, 1985). The text books during this period were describing the economic or psychological factors like motivation, cognition and learning theories (Bayton 1969; Britt 1968). In psychological consumer decision-making process, the concept of the self and market behavior were of main focus. There were three

main ideas derived from these texts: one that consumer behavior pattern differs at different point of life; one's behavior in life at any point of time is influenced by his past consumer behavior (based on user experience) and attitude and knowledge related to the consumer role at any point of time. During mid 60s, Nicosia (1966) saw attitude, motivation and experience as the key elements in consumer behavior and it is mixture of social interactions, intangibles and symbolic aspects which are involved in consumption (figure 2). The "decision-making models" have taken a broader view and identified the major input variables as perception, values and attributes, personality and past experience (Engel et al 1968; Howard and Sheth 1969). Later in mid 70s, these individual-based models were questioned when the role of unconscious behavior was considered. Several studies in that period were conducted to study the role of unconscious behavior and concluded that the consumer is thought of as having a fragmented mind, hence, both conscious and unconscious behavior should be studied (Tuck 1976).

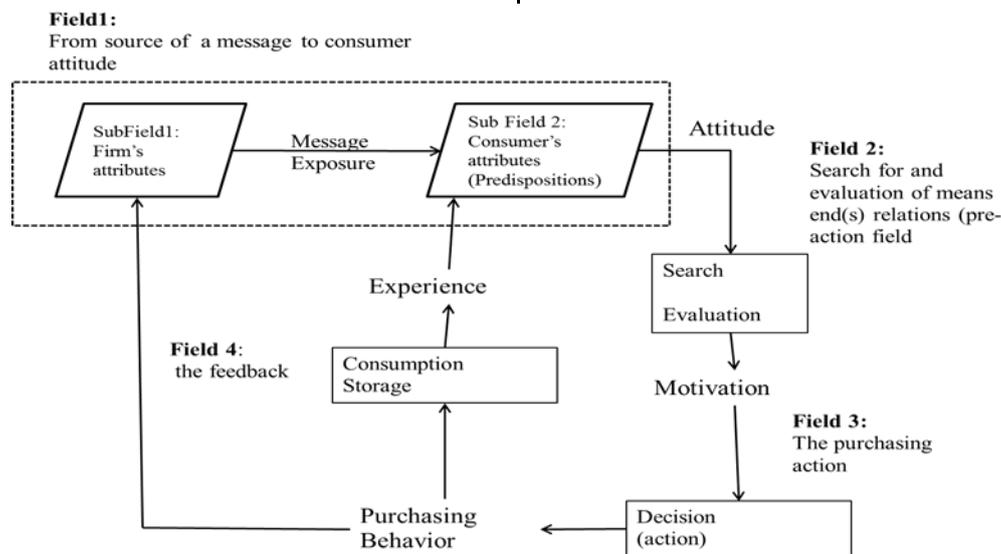


Figure 2: Nicosia model of consumer behavior in brief (adapted from Suja 2003)

During the late 1970s, the meaning of consumption for self-definition and self expression increased in consumer studies. In early 1980s consumer research had established itself beside the "old" aspects of "consumer behavior research" of economics and psychology (Holbrook 1987). The blend of economics and psychology in studying consumer behavior expanded to other areas, usually referred to as "post-modern" approaches (Antonides & Van Raaij 1998; Sherry 1991; Solomon et al. 1999). The writings of researchers of Sociology showed that study of consumption emerged at rapid pace during 1990s in the area of consumer related issues and more stress was given on the issues that related to the society and were neglected in earlier studies. These include social roles, societal level analysis, collective decision making, demography, and lifestyle. The social class

devoted considerable attention to the societal dimensions of consumption. During this period, the consumption was defined as a process in society not having micro-level occurrence. This process involves the selection, purchase, use, maintenance, repair and disposal of any product or service (Sassatelli 2007). This led to the study of consumer taste (Gronow 1997).

During 1980s, the consumer studies were focused on individual's role and studies of emotions. It affects on innovations in the decision process and the role of mass communications in consumption. This period saw the clear cut theoretical splitting of the consumer studies to the old consumer behavior and the new consumer research perspectives, which further affected the research approaches and methodology under investigation (Robertson and

Kassarjian 1991). Late 80s and early 90s period saw the shifting of interest towards phenomena on the macro-level like social issues and social groups. The special role of the individual subject was questioned. The new areas of interest included the studies of emotions and its affects, innovations in the decision making process and the role of mass communications in consumption (Robertson and Kassarjian 1991). There have been several attempts to sum up the features of postmodernism and the implications for consumer behavior (Firat and Schultz 1997; Firat and Dholakia 1998). This led to the development of various roles of consumers and overall fragmentation of the consumer society. Theme was discussed in the methodological and methodical contexts (Holbrook 1995). During this time period the concept of Consumer agency (Lodziak 2002) emerged, which means consumer is an actor in the market, also s/he can abstractly reflect her/himself as a consumer, not acting as a consumer. The outcome was that consumer agency was seen to be as important as the actual act of consumption and this led to 'pluralism research', indicating the coexistence of various truths, styles and fashions both in actual consumer behavior and methods to study consumption. This means that consumers are relatively free to combine elements from different styles and domains to create their own personal expression (Solomon et al. 1999)

The latest trend in consumer studies and research can be traced to mid 1990s and beginning of present century where 'consumer culture' was recognized as a distinct cultural entity. The starting of consumer culture was observed as one type of material culture. Material culture is the study of things (socially people relates with things they consume or possess) or objects-in-use (physical objects in everyday practices and beliefs). Thus focus of consumer research was on the new consumer research perspectives including research approaches and related areas (Figure 2). Consumption was seen as a social activity which, above all others unites economy and culture (Lee 1993). The notion of consumer culture implies that in the modern world, core social practices and cultural values, ideas, aspirations and identities are defined and oriented in relation to consumption rather than to other social dimension (Slater 1997). When defined this way, the consumer culture is viewed as culture of consumption and consumption is always a cultural as well as an economic process. It can be explored by looking at how the use of things is a means of creating a social identity and or by looking at how things come to have social lives. In postmodern times, consumer culture is constantly used as a hybrid concept, referring to advertising and the commercialization of goods, which leads to web of practices and makes up everyday consumption. The notion of consumption covers different meanings from purchase, to use, to waste which are equally inscribed in ordinary language and expert discourse. People are

described as consumers because they buy and use, store and maintain, manage and fantasize commodities, yet we rarely ask ourselves to what extent people actually conceive themselves as consumers while they perform these assorted activities. Awareness of these issues should sensitize us to the multiplicity of meanings, images, practices, institutions and identities which fill in the area of consumption. Consumer culture represents the increasing importance of culture in the modern exercise of power (Slater 1997). These studies focused on increasing importance of consumer culture on critical perspective and many of these inquiries derive from critical theoretical, post-modern or post structuralist perspective (Lury 1996; Slater 1997). Arnould and co workers (2005) formulated 'Consumer Culture Theory' (CCT), an ensemble of culturally-oriented models of consumption in the marketing field. CCT is divided into four research programs each with a somewhat different angle on the study of consumption. The programs are: consumer identity projects, market place cultures, the socio-historic patterning of consumption and mass-mediated marketplace ideology. Consumer culture is also a source of the contemporary belief that self-identity is a kind of cultural resource, assets or possession (Lury 1996). The general notion, during 1990s, was consumption style for a consumer's personal identity. This scenario changed in postmodern period to the consumers actively building their personal identities through consuming particular goods and services.

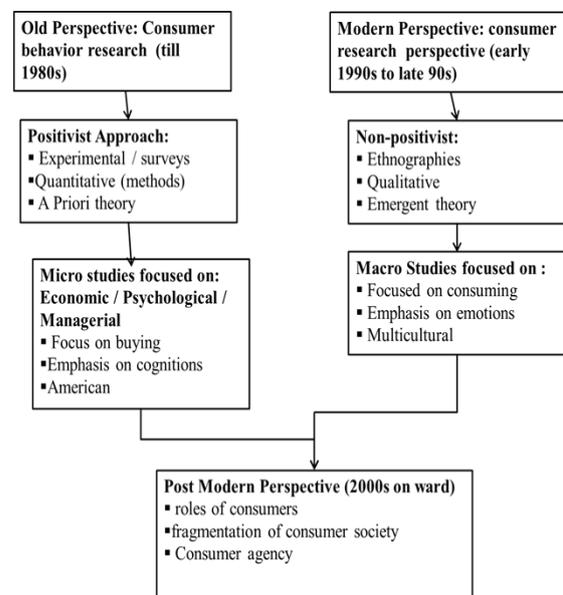


Figure 3: 'Old' consumer behavior research versus 'new' consumer research perspective (adapted from Belk 1995).

Milk quality and safety: Milk is an important source of nutrient required for growth in infants and children and for maintenance of health in adults. It is sole natural food for infants and children. The adulterants / preservatives assume the

proportion of health hazards for end consumers, particularly infants (Tipu et al. 2007). Milk and milk products can transmit biological and chemical hazards; there are effective control measures that can minimize risk to human health. Minimizing health risks from milk and milk products requires a continuous system of preventive measures starting with animals feed suppliers, through farmers and on farm controls, to milk processors and the application of good hygiene practices and food safety management system throughout the chain (Kenny M. 2013). The most vulnerable consumer groups that is infants, pregnant women, immune-compromised individuals and the elderly, must be

protected. The challenge to all food safety policy makers is to ensure that appropriate measures are taken to prevent food borne illnesses and to support implementation of food practices (including hygiene) and education to dairy farmers, suppliers and consumers while at the same time promoting economic development (Kenny M. 2013). A food-safety hazard is defined as a biological, chemical or physical agent in a food, or condition of food with the potential to cause an adverse health effect (FAO and WHO 2003). The main risks to human health associated with milk and milk products fall into three main categories: biological, chemical and physical (Table1).

Table 1: Main food-safety hazards (milk and milk products)

Biological hazards	Chemical hazards	Physical hazards
<ul style="list-style-type: none"> ▪ Pathogenic bacteria (including toxin producing bacteria) ▪ Toxigenic moulds/fungi ▪ Parasites ▪ Viruses ▪ Other biological hazards 	<ul style="list-style-type: none"> ▪ Naturally occurring toxins ▪ Direct and indirect food additives ▪ Pesticide residues ▪ Veterinary drug residues ▪ Heavy metals ▪ Environmental contaminants (e.g. dioxins) ▪ Chemical contaminants from packaging material ▪ Allergens 	<ul style="list-style-type: none"> ▪ Metal fragments ▪ Bone fragments ▪ Glass pieces ▪ Insect parts/fragments ▪ Jewellery ▪ Stones ▪ Hair

Source: FAO, 2006.

Adulteration of milk: Adulteration is an act of intentionally debasing the quality of food offered for sale either by admixture or substitution of inferior substances or by the removal of some valuable ingredients (FSSAI, 2006). Adulterated food is dangerous for health as it may contain various toxic chemicals; it may deprive of nutrients required for proper growth and development of human body. Milk adulteration, poor hygiene, malpractices, lack of preservation technology, cooling facilitates and sanitation conditions are the main causes of losses and poor quality of milk. Adulteration of milk is done to increase its volume and then starch and other reconstituted milk powders are added to increase its viscosity. To increase the shelf life of milk, dirty ice and some chemicals like hydrogen peroxide, carbonates, bicarbonates, antibiotics, caustic soda and even the

most lethal chemical formalin is also being used. Urea adulterated milk is very harmful to the women, especially girls, as it hastens up the process of puberty. There are evidences from the eighteenth century onwards of public concern about the health implications of adulteration (Filby 1934). In 1820, Friedrich Accum published his book, *A treatise on adulteration of food and culinary poisons*, that caught the public imagination in London (Burnett 1958; 1989; Atkins 2013). More shocking event was reported in 2007 when thousands of babies in China were hospitalized and more than 500,000 were affected to a lesser degree. This was not accident but purposeful adulteration of high technical sophistication (Xin and Stone 2008; Gale and Hu 2007).

Table 2: Microbiological requirement for processed milk and milk products as per Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011 (India)

	Product	Total plate count	Coliform count	Yeast count
1.	Pasteurized milk, cream, flavored milk	30,000 / g	< 10 / g	
2.	Paneer chhana	3,00,000 /g	50 / g	150 / g
3.	Khoya	50,000 / g	50 / g	50 / g
4.	Yoghurt, dahi, srikhand		<10 /g	50 / g
5.	Processed cheese, cheese spread	50,000 / g	<10 / g	

Table 3: Change in milk quality research (arrangements) from earlier time to present

Before 2000s		After 2000s		Future research prospects
Most basic quality standards :		Modern quality standards:		
Chemicals	Appearance, smell and taste	Food safety	Quality feed	Information technology (computer based information system of farm, feed, animal, animal products)
Microbiological	Temperature	Food quality	Quality management at farm level	
Physical	Solids not fat	Environment and sustainability	Chemical and microbiological standards of milk	Biochemistry (Genetically modified feed, genetically change in animal)
	Freezing point depression	Technical innovation	Compositional quality (i.e. fat, protein)	
	Antibiotics	Ability to supply niche milks	Bacterial count Somatic cell count	
	Acidity	Ability to drive cost efficiency	Antibiotic arrangement	
	Sediment	Animal welfare (IDF 2004)	Sensory quality	
	Resazurin			
	Total bacterial count			
Thermoduric count				

3. Conclusion:

The paper is an attempt to review the changes that have occurred in the consumer research and awareness regarding milk and milk products over period of time. In the present day perspective, the milk processors concerns include food safety, food quality, environmental and sustainability, technical innovation, the ability to supply niche milks and the ability to drive cost efficiency. It becomes clear from review, that there are two key drivers for technical changes over recent times - the information technology and biotechnology. In some cases the two are very much related like establishing the genome of dairy cattle using the information processing power of computer technology. However, in case of milk products,

biotechnology has been the most important of these drivers. With growing consumer awareness, ethics of food, sustainability in food production, and trust in foods, are of growing importance to the consumer. There are officially defined standards for pasteurized and powdered milk (Table2) and legal restriction on the use of water or other foreign material for adulteration but there are no standards for other traditional dairy products. A similar situation prevails in many developing countries. In the absence of adequate officially defined grades, standards and quality characteristics and in the absence of adequate officially defined grades, standards in the country, local standards are appearing in some situations – both in formal and informal markets.

References

- Antonides, Gerrit & Fred van Raaij (1998). *Consumer behavior: A European Perspective*. West Sussex: John Wiley & Sons.
- Arnould, Eric & Craig Thompson (2005). *Consumer Culture Theory (CCT): Twenty Years of Research*. *Journal of Consumer Research*. Vol. 31, No. 4 pp 868-882.
- Atkins, P.J. (2013). *Social history of the science of food analysis and the control of adulteration*. In Belasco W., Anne Murcott, Peter Jackson (ed.), *the hand book of food research: A&C Black*.
- Bayton, James (1969). "Motivation, Cognition, Learning - Basic Factors in Consumer Behavior". In *Dimensions of Consumer Behavior*, edited by McNeal, James pp 43-55.
- Belk, R.W. (1995). *Collection in a consumer society*. London: Routledge.

- Britt, Stuart (ed.) (1968). *Consumer Behavior and the Behavioral Sciences. Theories and Applications*. New York: Wiley & Sons.
- Burke, P. (1993). *Res et verba. Consumption in the early modern world*, in J.Brewer and R. Porter, (ed.), *Consumption and the World of Goods*. London: Routledge.
- Engel, James & Kollat, David & Rodger Blackwell (1968). *The Consumer Behavior*. New York: Holt, Rinehart & Winston.
- FAO. 2006. *Food safety risk analysis– A guide for national food safety authorities*. FAO Food and Nutrition Paper 87. Rome.
- FAOSTAT. 2011. FAO statistical database. Available at: <http://faostat.fao.org/>. Accessed 14 February, 2014 .
- FAOSTAT. 2012. FAO statistical database. Available at: <http://faostat.fao.org/>. Accessed 14 February, 2014.
- FSSAI (Food Safety and Standards Act). 2006. Ministry of Law and Justice. Government of India.
- FAO & WHO. 2003. *General principles of food hygiene. CAC/RCP 1-1969*. Rome.
- Firat, F. & Nihilesh Dholokia (1998). *Consuming People from Political Economy to Theaters of Consumption*. London: Routledge.
- Firat, F. & Clifford Schultz II (1997). *From Segmentation to Fragmentation, Markets and Marketing Strategy in the Postmodern Era*. *European Journal of Marketing*. Vol.31, No. 3/4, pp183-207.
- Gale, F. and D. Hu, 2007. *Supply Chain Issues in China's milk adulteration incident*. Economic Research Service U. S. Department of Agriculture Washington, DC.
- Griffiths M. (2010). *Improving the safety and quality of milk: milk production and processing*. Boca Raton: Woodland Publishing Limited.
- Gronow, Jukka & Alan Warde (2001). *Ordinary Consumption*. London: Routledge.
- Holbrook, Morris (1995). *Consumer Research. Introspective Essays on the Study of Consumption*. Thousand Oaks: Sage.
- Holbrook, Morris (1987). "What is Consumer Research?" *Journal of Consumer Research*, Vol. 14, No. 2, June pp 128-132.
- Holbrook, Morris (1985). "Why Business is Bad for Consumer Research: The Three Bears Revisited". *Advances in Consumer Research*, vol. 12 pp 145-156.
- Howard, John & Jagdish Sheth (1969). *The Theory of Buyer Behavior*. New York: John Wiley and Son.
- Kenny M. (2013). *Safety and quality*. In Ellen M., Anthony Bennett, Deirdre McMahon (ed.), *Milk and dairy products in human nutrition*. Rome: Food and Agriculture Organization of the United Nations.
- Lee, Martyn (1993). *Consumer Culture Reborn, the Cultural Politics of Consumption*. London: Routledge.
- Londziak, Conrad (2002). *The Myth of Consumerism*. London: Pluto Press.
- Loudon, David L. and Della Bitta, Albert J. (2004). *Consumer Behavior*. New Delhi:TATA McGraw Hill.
- Lury, Celia (1996). *Consumer Culture*. New Jersey: Rutgers University Press.
- McCracken, G. (1988). *Culture and Consumption: New Approaches to the Symbolic Character of Consumer goods and Activities*. Bloomington: Indian University Press.
- Nicosia, Franco (1966). *Consumer Decision Processes: Marketing and Advertising Implications*. Englewood Cliffs: Prentice Hall.
- Miller, D. (1998). *A Theory of Shopping*. Cambridge: Polity Press.
- Ramesh C, Chandan, Arun Kilara and Nagendra P. Shah (2008). *Dairy processing & quality assurance*. Iowa: Wiley – Blackwell.
- Robertson, T. & Harold Kassarijn (1991). *Handbook of Consumer Behavior*. New Jersey: Prentice Hall.
- Sassatelli, Roberta (2007). *Consumer culture, History, Theory and Politics*. Los Angeles: Sage.
- Sherry, John (1991). *Postmodern alternatives: the interpretive turn in consumer research*. In Robertson, Thomas and Harold Kassarijn (eds): *Handbook of Consumer research*. Rencics Hall: New Jersey pp 548-572.
- Slater, Don (1997). *Consumer Culture & Modernity*. Cambridge: Polity Press.

Solomon, Michael & Bamossy, Gary & Soren Askgaard (1999). *Consumer Behavior. A European Perspective*, New Jersey: Prentice Hall.

Suja.R.Nair (2003). *Consumer behavior in Indian perspective*. Mumbai: Himalaya Publishing House.

Tipu, M. S., I. Altaf, M. Ashfaq, S. Siddique (2007). *Monitoring of chemical adulterants and hygienic status of market milk*. Handbook published by Quality Control Laboratory, Univ. Vet. Anim. Sci., Lahore, Pakistan. pp: 7.

Tuck, Mary (1976). *How Do We Choose? A Study in Consumer Behavior*. London: Methuen.