A STUDY OF THE SOCIO - CULTURAL PARAMETERS ASSOCIATED WITH MEAT PURCHASING AND CONSUMPTION PATTERN: A CASE OF SOUTHERN PROVINCE, SRI LANKA

P.H.G.J. De Silva[1], N.S.B.M. Atapattu[1] and A.L. Sandika[2]

ABSTRACT

The factors affecting purchasing and consumption of meat are diverse and complex. The objective of this study was to understand the social and cultural parameters associated with the meat purchasing and consumption pattern of southern province in Sri Lanka. Pre-tested structured questionnaire was employed to collect information from 265 consumers. All the respondents consumed at least one kind of animal product. Only 1 % of respondents did not consume any type of meat. Eighty five percent of the respondents had established their meat consumption pattern at their child age. The religious believes (74 %), economic concerns (47 %) and antipathy for killing animals (82 %) were the most popular reasons for not being meat consumers. The most preferred meat types were chicken followed by mutton, beef and pork. There was a significant correlation between the type of meat consumed and sex, religion, family size but not with type of market (rural vs. urban), education level and occupation. An inverse relationship was found between age and meat consumption. Financial capabilities, religious concerns and preference of children were the priority determinant that influenced the purchasing behaviour of meat and meat products. It was concluded that the meat and meat product market in Sri Lanka should be diversified to match with the diverse preferences for different meat types.

Key words: Meat, purchasing, consumption, socio-cultural

INTRODUCTION

The per capita meat and meat products consumption of Sri Lanka has increased from 4.13 kg in 1997 to 5.78 kg in 2006 (Department of Animal Production and Health, 2006). The most popular meat was chicken (4.29 kg/head) followed by beef (1.38 kg/head), pork (0.1 kg/head) and mutton (0.01 kg/head) (Department of Animal Production and Health, 2006).The factors affecting purchasing pattern of meat and meat products have to be identified in order to comprehend the changes in the purchasing behaviour of consumers to make a qualified prognosis for the further development of consumers demand. Stern et al. (1997) described that the consumption can only be properly understood through the analysis of multiple factors. A range of economic, cultural, social, religious, marketing and personal factors determines the consumer behaviour (Dietz et al. 1995). With respect to meat and meat products, factors such as safety guarantee, quality assurance and trustworthy information, as well as interest in animal welfare and convenience are the most relevant consumer considerations (Devine, 2003; Verbeke, 2005; Verbeke and Vackier, 2004).

Women have more moral and ecological concerns than men and thus differ from male in their eating habits. Elders are more concern about health and ethical standards (Harvey *et al.*, 2001; Beardsworth *et al.*, 2002). Religion influences consumer attitude and behaviour in general (Delener, 1994; Pettinger et al., 2004; Musaiger,

[1]*Department of Animal Science, Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya*
[2]*Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya*

1993) and food purchasing decisions and eating habits in particular (Mennell et al., 1992; Steenkamp, 1993; Steptoe et al., 1995; Shatenstein and Ghadirian, 1997).

Only a few consumer preference studies about meat and meat products have been done in Sri Lanka. Studies done in other countries can't be directly extrapolated to Sri Lankan condition due to specific nature of the social, economic and cultural background of Sri Lanka. Sri Lanka is a multi-ethnic and multi-religious society with long history and diverse cultural traditions. Making a strong middle class, income and education levels are increasing rapidly. Meanwhile cultural values are increasingly been challenged due to globalization process. This study aims to identify the socio – cultural parameters associated with meat purchasing and consumption pattern in two districts in southern province of Sri Lanka.

MATERIALS AND METHODS

Matara and Galle districts were purposively selected as the research area. 265 consumers from six locations from Matara, Galle and Ambalangoda, who toured to local markets and supermarkets in those areas were purposively selected and interviewed. Data were collected using a pre-tested structured questionnaire. The primary data were processed and analyzed using the Microsoft Office Excel (2003) and SPSS 10.0 package. A mean rating was calculated for preference order for different types of meat. Factors influencing the purchasing behaviour were analyzed using Kruskal-Wallis Test and means were separated by using DMRT procedure. The Kendall's tau-b test was performed to ascertain the relationship between the variables, such as market type, sex, religion, age, education, family size, occupation with meat purchasing frequency and consumption.

RESULTS AND DISCUSSION

Consumption behaviour of raw and processed meat

All the respondents consumed at least one kind of animal products; meat, egg or fish and thus was considered as non-vegetarians. However when asked their dietary pattern, 8.7 % of the respondents claimed themselves were vegetarians. This indicates that at societal level, the terms vegetarianism and non-vegetarianism are not well defined. Beardsworth, et al., (2002) have also noted that there are different forms of vegetarianism, and definitions of vegetarianism vary among individuals.

Only 1 % of the respondents did not eat any type of meat. Many of the respondents (85%) had established their meat consumption pattern at their child age. The religious believes (74 %), economic concerns (47 %) and antipathy for killing animals (82 %) were the most cited reasons for not being meat consumers. Forty eight percent of consumers mentioned age is a factor for not being meat eaters. Several authors (Delener, 1994; Pettinger et al., 2004; Musaiger, 1993) have reported a strong influence of religious believes on meat consumption pattern. However it is interesting to note that those who rejected meat on religious reasons and due to antipathy for killing animals consumed fish and/or egg. As far as community nutrition is concerned, this attitude can be regarded as a plus point.

When assessing consumption of the individual kind of meat, the most preferred meat types were chicken (84 %) followed by mutton (44 %), beef (33 %) and pork (24 %)and preference order for different types of meat was significantly different from each other (Table 2). Compared to pork and beef, the consumption of chicken is not regulated by ethno-religious believes and moreover, chicken is considered as healthy white meat. Above factors may be

the reasons for the popularity of chicken over other types of meat. Chicken was more popular among females than males. Females have found to be more health concern than male (Almas, 1999) and thus it may be the reason for the popularity of chicken among them. Interestingly no Buddhists female respondents consumed beef.

Table 01: Summary statistics of the respondents

Variable	Variable Frequencies (%)					
Locality	Urban 54.7	Rural 45.3				
Sex	Male 29.4	Female 70.6				
Family members	2 11	3 29	4 29	5 22	6 7	7 2
Religion	Buddhism 69.1	Islam 20.1	Christians 10.8			
Education level	Primary 22.3	Secondary 55.8	Higher 21.9			
Age	16-30 28.7	31-40 35.1	41-60 27.9	Above 61 8.3		
Professions	Government 18.1	Private 17.7	Trader 30.6	Farming 7.5	Fishing 15.5	Labour 6.4 Others 4.1

Table 02: Percentages and preference order of the respondents who eat different types of raw and processed meat items

Type of meat	Raw (%)	Processed (%)	Mean rank for raw meat*	Mean rank for processed meat*
Chicken	84.1	71.69	935.50[a]**	729.50[a]**
Mutton	44.1	6.13	670.50[b]	451.50[c]
Beef	32.8	7.09	595.50[c]	489.50[b]
Pork	24.5	15.09	540.50[d]	451.50[c]
Other (lamb, rabbit)	29.4	0	573.00[cd]	

[a-c] means within a column having different superscripts differ significantly (P< 0.05)
*Kruskal-Wallis Test
**Duncan

The correlations between the consumption of raw and processed beef, chicken, mutton, pork and other with sample variables are presented in table 3 and 4. Kendall's tau-b test correlations showed that there were no significant correlations (P>0.05) between the type of meat consumed and the factors such as the type of market (urban or rural), education level and occupation. But there were significant correlations (P<0.05) between the type of meat consumed and the factors such as sex, religion and family size.

The location of residence had no influence on the meat consumption habits of individuals. But gender was found to have significant affect on meat consumption. Males (97 %) tended to eat all meat types than females (79 %). Dietz, et al., (1995) also found that vegetarianism was more popular among females than males.

Table 03: Correlation matrix for different variables with meat purchasing frequency and consumption

Variable		Consumption						Purchasing
		Beef	Chicken	Mutton	Pork	Other	Overall	Frequency
Market type	r	-.055	.000	-.05	-.025	-.005	-.030	.066
		.373	.995	.46	.681	.931	.580	.237
Sex	r	.095	.212**	.109	.055	.092	.137*	.107
		.122	.001	.075	.370	.137	.013	.056
Religion	r	.813**	.277**	.558**	.182**	.491**	.592**	.036
		.000	.000	.000	.002	.000	.000	.506
Age	r	-.141*	-.109	-.052	-.054	-.19**	-.123*	.076
		.013	.055	.366	.340	.001	.015	.140
Education	r	-.054	.012	.016	.028	.051	.019	.019
		.357	.834	.791	.632	.386	.712	.723
Family size	r	.232**	.035	.223**	-.14*	.25**	.144**	.013
		.000	.532	.000	.013	.000	.004	.798
Occupation	r	.074	-.009	-.071	-.15**	.022	-.025	.020
		.175	.864	.197	.007	.692	.607	.692

** Correlation is significant at the .01 level
* Correlation is significant at the .05 level

As expected, the results showed that religion had a significant effect on the consumption of all types of meat. Out of 183 Buddhists, only 77 % respondents admitted to consume at least one type of meat whereas all the Christians consumed at least one type of meat. The estimated coefficient on religion has the largest value among all other variables; implying religion had the largest impact. No Muslim respondents preferred pork and only a very few male Buddhists (12 %) consumed beef.

The results showed an inverse relationship between age and different type of meat consumption. Senhui et al, (2003) also showed that when people become elder they pay a special attention to health attributes of their diet and thus cut down their meat consumption. Education had no significant effect on meat consumption. The education level of the respondent was reasonably high; 78 % of the respondents had at least secondary education. Therefore many of the respondents may be aware about the nutritional importance of animal protein sources. However, results showed that respondents with higher educational levels had less preference for beef. This is an

expected result because more educated people may be better informed about beef to be a source of dietary cholesterol (Anderson and Shugan, 1991).Household size had a significant positive effect on overall meat consumption and on chicken consumption. Furthermore, households having kids were more likely to consume meat than households without having kids. This may be due to the difference in the nutritional and dietary needs arisen due to the age structure of the family. Professions of the respondents also did not have effect on meat consumption.

Table 04: Correlation matrix for different variables with processed meat purchasing frequency and consumption

Variable		Consumption				Purchasing
		Processed beef	Processed chicken	Processed mutton	Processed pork	Frequency
Market type	r	-.081	-.212**	-.031	-.026	-.231**
		.187	.001	.613	.673	.000
Sex	r	.015	.088	.198**	.128	.06
		.180	.152	.001	.037	.297
Religion	r	.450**	.228**	.276**	.006	.146**
		.000	.000	.000	.915	.008
Age	r	-.172**	.084	.026	-.032	-.156**
		.003	.139	.642	.576	.003
Education	r	.135	.247**	.026	.025	.177**
		.021	.000	.653	.675	.001
Family size	r	.205**	.086	.125	-.192**	.102
		.000	.127	.026	.001	.050
Occupation	r	.057	-.016	.085	-.220**	-.051
		.397	.772	.121	.000	.316

** Correlation is significant at the .01 level
* Correlation is significant at the .05 level

The processed meat category includes sausage, lunch meats, hot dogs, bacon, ham, and other processed meat items. The processed chicken consumption and processed meat purchasing frequency was significantly low in rural market compared to urban. These differences in meat consumption in rural and urban could simply be explained by the availability and price of meat in different locations, or they could reflect regional/cultural differences.

Gender had neutral influence on processed items apart from for processed mutton. Except for pork, the widely held religious beliefs on meat consumption were still seen for processed meat items. As in the case with raw meat, age showed negative effect on the purchasing and consumption of processed beef. Education had significant influence on processed chicken and also for the frequency of purchasing of chicken processed items. The frequency and the consumption of processed chicken was significantly higher among the educated respondents. It is not clear whether this observation is due to the better nutritional awareness or the increased income level associated with higher educational levels.

Family size had a significant positive effect on processed beef consumption, but had a negative affect on consumption of processed pork. That may due to the age structure and mind-set among family members be at

variance in each others. A similar type of consumer behaviour was seen with regard to the raw meat purchasing and consumption pattern as well.
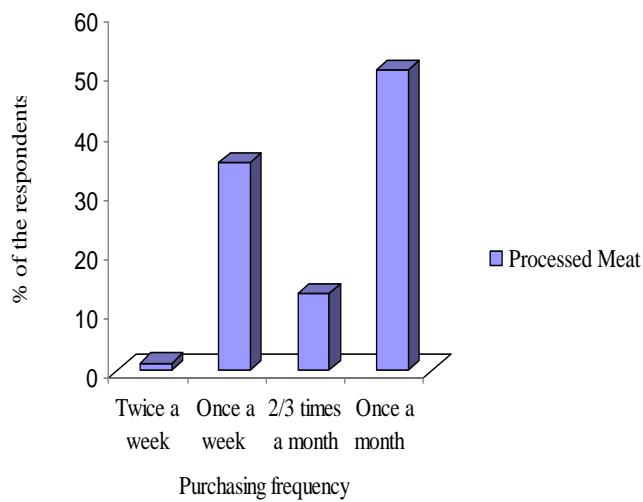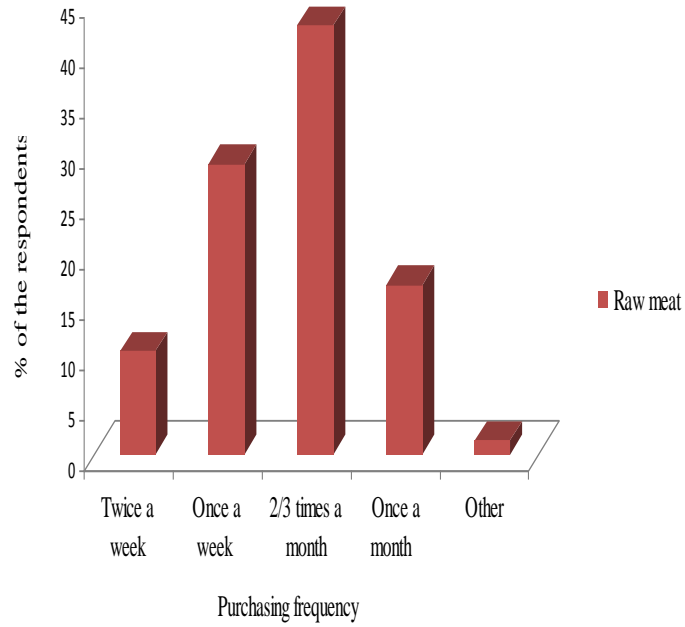

Figure 01: Raw and processed meat purchasing pattern of the respondents

Purchasing behavior focuses on decisions made by individuals when using their own resources (time, money, efforts) to acquire items related to meat consumption. The meat purchasing behavior (Figure 1) showed that around 43 % of the respondents buy meat 2 or 3 times per month and 29 % of consumers buy them weekly. No respondent buy raw or ready to cook processed meat daily. As for the processed meat almost, 35 % of respondents buy weekly and around 51 % of the respondents could afford for processed meat only once a month. Processed mutton items are bought less often. Forty two percent of respondents claimed that they do not buy any type of processed meat at all, whereas only 15 % consumers do not buy raw meat at all. This purchasing behavior goes well with national per capita meat consumption data which showed rather low per capita chicken (4.29 Kg), beef (1.38 Kg), mutton (0.01 Kg) and pork (0.11 Kg) consumption in year 2006 (Dept of Animal Production and Health, 2006).

Financial capability of the consumer was the priority determinant factor influenced in the purchasing decision of meat. Seventy eight of consumers considered financial reasons as the first factor considered in purchasing meats. This reason ranked first by both men and women. The religion and preference of children were ranked by 76 % and 63 %, respectively. Thirty nine consumers, mainly women considered health as the primary concern. Putnam and Gerrior, (1997) identified prices, income, taste and preferences are the key variables affecting the meat purchasing and consumption pattern.

When asked about nutritional value of animal protein sources, 24 % respondents claimed that animal protein sources are lower in nutritive value than plant protein sources. But 41 % and 35 % respondents held views that animal protein sources are equally nutritious or superior to plant protein sources, respectively. Most of the people (98 %) eat meat due to its culinary taste but not concern about its nutritive value. Consumers decide to consume meat from the force of habit (62 %).

Table 05: Factors considered in purchasing meat and meat products

Determinants	Respondents (%)	Mean rank *
Preference of children	63	1007.00[b] **
Financial capability	78.5	1150.00[a]
Health concerns	39.2	786.50[d]
Religious sentiments	76.2	1129.50[a]
Availability	34.7	744.50[d]
Age stage	51.3	898.50[c]
Traditional beliefs	38.5	779.50[d]

**Duncan   *Kruskal-Wallis Test

CONCLUTIONS

Religious and associated cultural believes had a strong impact on the type of meat consumed. But in general, there was a need and demand for all types of meats mainly due to heterogeneity of the society. Even though there was negative trend for some types of meat, many people believed the goodness of meat. Particularly presence of kids in the family makes meat an essential food item. Findings of this study suggest the importance of having a diverse range of meat types in Sri Lankan markets to meet the needs of different segments of the society. Also, in formulating national policies related to meat industry, it seems not be fair to focus more attention on one or few industries and neglect any of the others. It was concluded that the meat and meat product market of Sri Lanka should be diversified to match with the diverse preferences for meat types.

REFERENCES

Almas, R., (1999), Food trust, ethics and safety in risk society. Sociological Research Online, 4(3), pp 282-291.

Anderson, E. W., and Shugan S. M., (1991), Repositioning for changing preferences: the case of beef versus poultry, Journal of consumer research, 18, pp 219-232

Beardsworth, A., Bryman, A., Keil, T., Goode, J., Haslam, C., and Lancashire, E., (2002), Women, men and food: the significance of gender for nutritional attitudes and choices. British Food Journal, 107: pp 470-491

Delener, N., (1994), Religious contrasts in consumer decision behaviour patterns: their dimensions and marketing implications. European Journal of Marketing, 28, 5, pp 36-53.

Department of Animal Production and Health: Key Statistics (2006), P. O. Box 13, Peradeniya, Sri Lanka

Devine, R., (2003), Meat consumption trends in the world and the European Union, Productions Animals, 16(5), pp 325-327.

Dietz, T., Frisch, A. S., Kalof, L., Stern, P. C., and Guagnano, G. A., (1995), Values and vegetarianism: An exploratory analysis. Rural Sociology 60, 3, pp 533-542.

Harvey, J., Erdos, G., and Chalinor, S., (2001), The relationship between attitudes, demographic factors and perceived consumption of meats and other proteins in relation to the BSE crisis: a regional study in the United Kingdom. Health Risk Soc. 3: pp 181-197.

Mennell, Murcott, A., and Van Ooterloo, A.H., (1992), The sociology of food: eating, diet and culture, London, Sage Publications Ltd, pp 152.

Musaiger, A.O., (1993), Socio-cultural and economic factors affecting food consumption patterns in the Arab countries, Journal of the Royal Society for the Promotion of Health, 113 (2), pp 68-74.

Pettinger, C., holdsworth, M., and Gerber, M., (2004), Psycho-social influences on food choice in Southern France and Central England, Appetite, 42(3), pp 307-316.

Putnam, J. and Gerrior, S. (1997). Americans consuming more grains and vegetables, less saturated fat, Food Review, 20: pp 2-12.

Senhui He, Stanley F., and Arbindra R., (2003), Identifying factors influencing beef, poultry and sea food consumption, Journal of food distribution research, 34(1), pp 50-55

Shatenstein, B., and Ghadirian, P., (1997), Influences on diet, health behaviours and their outcome in select ethnocultural and religious groups, Nutrition, 14 (2), pp 223-230.

Steenkamp, E. M., (1993), Food consumption behaviour, European Advances in Consumer Research, 1, pp 401-409.

Steptoe, A., and Pollard, T.M., (1995), Development of a measure of the motives underlying the selection of food: the food choice questionnaire, Appetite, 25, pp 267-284.

Stern, P. C., Dietz, T., Ruttan, V. W., Socolow, R.H., and Sweeney, J. L., (1997), Consumption as a problem for environmental science. Environmentally Significant Consumption: Research Directions, Washington, D.C: National Academy Press. pp 1-11.

Verbeke, W., (2005), Consumer acceptance of functional foods: socio-demographic, cognitive and attitudinal determinants, Food Quality and Preference, 16, pp 45-57.

Verbeke, W., and Vackier, I., (2004), Profile and effects of consumer involvement in fresh meat, Meat Science, 67, pp 159-168.