

RESEARCH NOTE

Electricity Consumption Indicating Profit and Progress in Meat Marketing Trend in Kohima Nagaland

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ABSTRACT

*In a study conducted among 100 meat consumers and 30 meat sellers in the meat market of Kohima, Nagaland, it was found that there was an orderly preference of meat ranked from first to fourth in the order of pork, beef, chicken and fish respectively. Known for heavy meat eating habits, no significant level of difference existed among the sellers and the customers of meat as far as their consumption pattern were concerned although sellers showed a lower consumption rate in comparison to the customers. For sellers the market activities started as early as 3-00 AM in the morning and for customers it was as early as 6-00 AM. The average sale of meat remaining about 60 kg per day, the peak hours of the meat market were from 7-00 AM to 9-00 AM when 90 per cent of the activities were over for the day. The electricity consumption pattern as a whole in the market was less. However, there were highly significant associations between the electricity consumed and meat sold (0.67**), meat sold and net profit received (0.86**) and electricity consumed and net profit received from meat trade (0.73**) indicating consumption of electricity as a signal of profit and progress.*

Key words: Meat consumers; Meat sellers; Meat market; Meat eating habits; Consumption pattern;

Consumption of electricity is a mark or indication of progress and prosperity in many walks of life including the standard of life and living all over the world. Nagaland in the North Eastern Region of India is a state known for high consumption of meat of many types and forms. It is not only related to pride, prestige and promotion of positions of people in the society, but also to health and progress. Meat is also considered as the yardstick of affluence and development, in majority of places of the region in general and the state of Nagaland in particular. It has tremendous socio-psychological impacts. The urge for meat is such that, even the quality aspect, hygienic condition and the source of origin, etc. are compromised or ignored by the consumers when they purchase meat from the markets. It is very large in meat-producing areas like in Uruguay, Argentina, Australia and New Zealand, at 300g per head per day compared with an average of 10 g in India, Indonesia and Sri Lanka (Anonymous, 2013).

Kohima is the capital of the state of Nagaland situated in the North Eastern Region (NER) of India.

The total population of Kohima town is 2,70,063 with a literacy rate of 85.58 per cent (Anonymous, 2012). The people of Kohima town are cosmopolitan in nature as people of different races, religions and social backgrounds are settled in Kohima although there is a local domination of different clans of Naga people in all spheres of life.

States like UP, Haryana, Jharkhand and Assam have been the major suppliers of meat animals to Nagaland including Manipur and countries like Myanmar. Although not supported by any empirical study, Nagaland in general and Nagas in particular are known as "heavy meat consumers". According to the literature, the per capita consumption of meat in Kohima was as high as 106.44 grams per head per day which is much higher than the recommended level of 34.00 grams per head per day by Indian Council of Medical Research (Konyak, 2003). The total import of meat per year in the state was 19.05 thousand tons and the monetary value of import of meat from outside the state was estimated to be around Rs 153.16 crores

(Anonymous, Nagaland Basic facts 2012). Nationally the percentage spent on meat is highest in Nagaland than in any other states (Deka and Thorpe, 2008).

Many types of expenditures are added to every kilogram of meat sold in the market ranging widely from labour, transport, various taxes and others. What normally gets ignored is the consumption of electricity, which has a crucial role from vending the amount of meat sold to increase or decrease shelf life. Therefore, a study was planned to understand the-

- i. Preference of meat by the Naga people in Kohima,
- ii. Average consumption of meat by the buyers and the sellers per month.
- iii. Meat marketing timing in Kohima, Nagaland
- iv. Amount of electricity consumed in meat marketing in Kohima and its impact on the quality of marketing.

METHODOLOGY

The research work was carried out in Kohima district of Nagaland. The study area was divided into three zones, the north zone, south zone and the west zone. A total of 21 regular and established meat markets were found active in the district with 11 meat selling points in northern zone of Kohima, 9 in the southern zone and a single meat market in the western zone of Kohima. In each zone customers falling into different strata who purchased meat at least twice a week were selected randomly and traced back from the market and interviewed. In the north zone a total of 47 respondents (10 sellers and 37 buyers), in the south zone a total of 68 respondents (18 sellers and 50 buyers) and in the west zone a total of 15 respondents (2 sellers and 13 buyers) were selected. A total of 130 respondents which included 100 customers and 30 sellers were interviewed. To fulfill the objectives of the study, data for various relevant aspects were collected through a pre-tested reliable and valid interview schedule. In case of electricity consumption, the arrangements of fixtures in the shops were recorded and electricity bills of two consecutive months were consulted to authenticate the expenditures made in consumption of electricity. The data thus collected were scored, compiled, and tabulated as per in order to arrive at comprehensive understanding in respect of set objectives.

RESULTS AND DISCUSSION

Meat is the most delicious component of any dish

whether, lunch or dinner among the people of the Northeast as a whole, especially the non-vegetarians. More than 95 per cent of the total population consumes meat. Similar finding was supported by Wright *et al* (2010). As far as the state of Nagaland is concerned, people have intense love for any kind of meat. The tradition in all the Naga society is such that no occasion, event or celebration is complete without using enough of meat including presenting large quantum of meat to the guest and relatives. It might be seen from Table 1 that pork was the most preferred meat (68.46%) followed by beef (24.62%), chicken (5.38%) and fish (1.54%). In addition to the taste and flavor, pork being the first preferred meat might have been due to several reasons including comparatively easier husbandry practices in the uneven terrains, favourable climatic condition, high proficiency and easy import facility and all. Likewise fish being preferred the least was understandable as the water bodies in Kohima Nagaland are fast flowing making it difficult to fish and also the time taken for import from nearby states is high thereby spoiling the fish when it is ready for cooking and above all availability of other varieties compensated the protein requirement in daily food. Similar views relating to love for fish in hilly region was also forwarded by Young and Muir (2002). Pork being preferred most among meats was also recorded by Thompson (2005) and Johari (2013).

Table 1. Preference order of conventional meat by the respondents in Kohima

Variable	Pork	Beef	Chicken	Fish
South Zone (N=68)	44 (64.71)	21 (30.88)	3 (4.41)	0 00
North Zone (N=47)	33 (70.21)	9 (19.15)	4 (8.51)	1 (2.13)
West Zone (N=15)	12 (80.00)	2 (13.33)	0 (00)	1 (6.67)
Buyer (N=100)	78 (78)	14 (14)	6 (6)	2 (2)
Seller (N=30)	11 (36.67)	18 (60)	1 (3.33)	0 (00)
Pooled (N=130)	89 (68.46)	32 (24.62)	7 (5.38)	2 (1.54)

Figures in parenthesis indicate percentage.

It could be vividly seen that the meat consumption pattern among the people in Kohima, Nagaland irrespective of being buyers or sellers, remained almost

the same, although the sellers were showing the tendency of consuming lesser (Table 2). However, the results did not attain the statistical level of significance. But little lesser consumption by the sellers could be attributable to the fact that handling the meat for the day in and day out might have created some kind of inhibition in them to consume meat everyday and every time (*Barr and Chapman, 2002*). it might have also been a factor that many times inferior quality animals were slaughtered and they were aware of the same , which they might have sold, but did not carry home to consume. These kinds of meat selling trends were prevalent in many places and reports were not scanty (*Shaikh, 2015*).

Table 2. Total meat consumption pattern among the buyers and sellers per month (in Kg.)

in Kohima, Nagaland						
Category	Mean	S.D.	Range	Low	Medium	High
Buyer (N=100)	28.87	15.69	7 – 72	8 (8)	76 (76)	16 (16)
Seller (N=30)	20.52	6.27	11 – 31	8 (26.67)	17 (56.67)	5 (16.67)
Pooled (N=130)	26.94	14.50	7 – 72	10 (7.69)	98 (75.38)	22 (16.92)

Mean Difference= ‘t’ value 1.48^{NS}
(Figures in the parenthesis indicating percentage)

Table 3. Frequency of respondents favouring different marketing hours

Hour of the day	Buyer				Seller				Total			
	Beginning	Rank	End	Rank	Beginning	Rank	End	Rank	Beginning	Rank	End	Rank
3.00 AM	1 (1.00)	-	-	-	9 (30.00)	2	-	-	10 (7.69)	5	-	-
3.30 AM	0	-	-	-	2 (6.67)	4	-	-	2 (1.54)	-	-	-
4.00 AM	0	-	-	-	11 (36.67)	1	-	-	11 (8.46)	4	-	-
5.00 AM	2 (2.00)	5	-	-	7 (23.33)	3	-	-	9 (6.92)	-	-	-
6.00 AM	34 (34.00)	1	-	-	1 (3.33)	5	-	-	35 (26.92)	1	-	-
6.30 AM	1 (1.00)	-	-	-	0	-	-	-	1 (0.77)	-	-	-
7.00 AM	23 (23.00)	3	3 (3.00)	5	0	-	-	-	23 (17.69)	3	3 (2.31)	-
7.30 AM	1 (1.00)	-	1 (1.00)	-	0	-	-	-	1 (0.77)	-	1 (0.77)	-
8.00 AM	27 (27.00)	2	27 (27.00)	2	0	-	-	-	27 (20.77)	2	27 (20.77)	2
9.00 AM	10 (10.00)	4	15 (15.00)	3	0	-	-	-	10 (7.69)	5	15 (11.54)	4
9.30 AM	1 (1.00)	-	3 (3.00)	-	-	-	-	-	1 (0.77)	-	3 (2.31)	-
10.00 AM	-	-	43 (43.00)	1	-	-	-	-	-	-	43 (33.08)	1
10.30 AM	-	-	1 (1.00)	-	-	-	-	-	-	-	1 (0.77)	-
11.00 AM	-	-	6 (6.00)	4	-	-	-	-	-	-	6 (4.62)	-
6.00 PM	-	-	1 (1.00)	-	-	-	18 (60.00)	1	-	-	18 (13.85)	3
6.30 PM	-	-	0	-	-	-	2 (6.67)	3	-	-	2 (1.54)	-
7.00 PM	-	-	1 (1.00)	-	-	-	9 (30.00)	2	-	-	10 (7.69)	5
7.30 PM	-	-	0	-	-	-	1 (3.33)	4	-	-	1 (0.77)	-

Figures in parenthesis indicate percentage.

Table 4. Frequency on best time of the day for meat marketing

Hour of the day	Buyer			Seller			Pooled		
	No.	Rank	%	No.	Rank	%	No.	Rank	%
6.00 AM	5	5	5	0	-	-	5	5	3.85
7.00 AM	32	2	32	11	2	36.67	43	1	33.08
8.00 AM	11	3	11	19	1	63.33	30	3	23.08
9.00 AM	42	1	42	0	-	-	42	2	32.31
10.00 AM	10	4	10	0	-	-	10	4	7.69
Total	100			30			130		

Table 3 and Table 4 gave a clear picture of the marketing hours in the meat market in Kohima, Nagaland. Considering both the tables at a glance it could very well be assumed that, the marketing activities in the meat market were at peak from 7-00 AM to 9-00 AM. This also revealed the food taking habits of the Naga community. Furthermore some other observations needed a revelation here like (a) majority of the Naga people consumed their "major day meal" by about 8-00 to 8-30 AM in the morning. Considering the facts that weather in Kohima remained cold to chilled in different

seasons of the year on one hand and the town is in the easternmost part of the nation on the other hand where sun rises quite early; this could be considered as too early in the day; (b) major meals in Nagaland were arranged around meat they had for the day; (c) although the people in general had the habit for smoked meat (whenever had excesses), they usually liked fresh meat and (d) no artificial heating device for the comfort of the market workers was used, which of course increased the shelf life of the meat sold or in other way prevented early spoilage of meat. All these features on one hand kept the meat market in utmost simplicity and allowed the electricity consumption pattern and made the calculation of cost of electricity in meat market easier. Similar concerns relating to safety standards along with convenience in market timing were also reported by *Grunert (2005)*.

It could be seen from the Table 5 that in all the five categories of electricity consumers the expenditures made in the meat shops in Kohima, Nagaland were very less and considering the fact that meat was so important

Table 5. Electricity consumption pattern in the shops in meat market in Kohima

Consumer type(1)	(2)	(3)	(4)	(5)	(6)	(7)
Class 1 (N=5)	CFL (5 W)	10	5	7.50	42.75	1.425
Class 2 (N=5)	CFL (5 W)	5	5	A 3.75	106.875	3.5625
	CFL (10 W)	10	5	B 15.00		
	Back up (15 W)	10	2			
	Total			(A+B) 18.75		
Class 3 (N=8)	CFL (10 W)	16	5	A 24.00	410.4	13.68
	Incandescent lamp (40 W)	8	5	B 48.00		
	Back up (20 W)	8	2			
	Total			(A+B) 72.00		
Class 4 (N=7)	CFL (15 W)	14	7	A 44.10	490.11	16.337
	Incandescent lamp (40 W)	7	5	B 42.00		
	Back up (30 W)	7	3			
	Total			(A+B) 86.10		
Class 5 (N=5)	CFL (15 W)	10	8	A 36.00	376.20	12.54
	Incandescent lamp (40 W)	5	5	B 30.00		
	Back up (70 W)	5	4			
	Total			(A+B) 66.00		
Total (N=30)		85	50	250.35	1426.335	47.5445
Average (Total/30)		2.833	1.67	8.345	47.5445	1.59

Note : Tariff rate is taken as Rs 5.70/kWh as per Nagaland Electricity Regulatory Commission Tariff order Fy. 2015-2016

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|--|---------------------------------------|
| (2) Electrical Load type with equivalent watts | (3) Total No. of fixtures |
| (4) Average Hours kept on/day | (5) Total kWh. consumed/Month |
| (6) Average charge/month Rs=(5)*5.7 | (7) Average charge per day Rs.=(6)/30 |

an item for all the Naga people, the shop keepers in general were not very interested in keeping the shops well lighted, focused and attractive. Similar trends in some other countries were also reported (*Andriof et. al., 2002 and Angeles, 2006*). However, whoever did little on that line, received benefits out of the effort and sale in their shops were much more than those of other shops. In order to see if there existed any relationship between the consumption of electricity and total amount of meat sold a further analysis was done. The results were presented in the Table 6.

Table 6. Figures indicating electricity consumption per day per meat shop, average amount of meat sold per day and the net income received

1	2	3	4	5	6
30	8.345	60 kg	Rs. 1350.00	Electricity with meat sold	0.67**
				Meat sold with net income	0.86**
				Electricity consumed and net income from meat sale	0.73**

(** indicated significant at 0.01 level of probability)

1=No. of meat shop

2=Average Unit of electricity consumed/month/shop

3=Average amount of meat sold/ shop/ day

4=Average net income/shop/day (@ Rs. 2.50/kg of meat)

5=Correlation between

6=Coefficient of correlation

It could be seen from the table 6 that there existed a strong association between the amount of electricity consumed and total amount of meat sold per day ($r=0.67^{**}$). Similar were the cases in respect of meat sold and profit made ($r=0.86^{**}$) and electricity consumed and net income made from sale of meat ($r=0.73^{**}$). This established the fact that electricity consumption was a yardstick for progress of marketing of meat in Kohima, Nagaland. The reasons might have been that the well lighted shops received attention from the people and the displayed meat carcasses because of enlightened atmosphere looked fresh and tidy. That attracted people to come such shops which only because of some lights put more assured quality, standard and

freshness of the meat sold in such shops although the prices were the same with all other shops around. So, consumption of electricity was a mark of confidence and comfort. Similar findings were also reported by *Gallager and Shapouri (2005)* and *Outlaw et. al. (2005)*

CONCLUSION

Known as a place of heavy meat eating habits, people in the North East India have no inhibition to various types of meat where Nagaland tops the list in meat consumption pattern. Preparation and presentation of meat in different forms and types as seen in Nagaland are matters of prestigious tradition, culture and dignified ways of lifestyle of people. In a study conducted among 100 meat consumers and 30 meat sellers in the meat markets of Kohima, Nagaland, it was found that there was an orderly preference of meat ranked from first to fourth in the order of pork, beef, chicken and fish respectively. Known for heavy meat eating habits, there was no significant level of difference among the sellers and the customers of meat as far as their consumption pattern were concerned although sellers showed a lower consumption rate in comparison to the customers. For sellers the market activities started as early as 3-00 AM in the morning and for customers it was as early as 6-00 AM. The peak hours of the meat market were from 7-00 AM to 9-00 AM when 90 per cent of the activities were over for the day. The electricity consumption pattern as a whole in the market was less. However, there were highly significant associations between the electricity consumed and meat sold (0.67^{**}), meat sold and net profit received (0.86^{**}) and electricity consumed and net profit received from meat trade (0.73^{**}). Therefore, it could be suggested that all stakeholders involved in the ultimate meat production in the state should look into the avenues that exist in producing the preferred type of conventional meat so that the people of Kohima, Nagaland so intensely relish consuming meat can get the local fresh meat and thereby on one hand reduce the chances of various diseases caused by eating spurious meat and on the other hand help the state grow economically.

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