



Marketing Skills and Sanitary Status of Retail Meat Shops In relation to Butchers' Educational Background in Maharashtra

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ABSTRACT

In India meat production is an unorganized business, although, ideally the butchers should possess basic education along sound understanding of sanitary practices and have standard infrastructure promoting meat business. A study was carried out in year 2021 to study the impact of butchers' education on marketing skills and sanitary status of retail meat shops. The data was collected on 118 butchers' shop through interview method. The study revealed that 42.37 per cent of the respondents had completed their secondary education with average age between 25-35 years. The study showed that 67.80 percent respondents running butchery as family business without undergoing any professional training. Butcher shops (42.37%) sales both chicken and mutton of which 68.64 and 80.51 per cent shops had registration with FSSAI and local body, respectively. COVID-19 has not affected meat business as compare to various religious festivals. Respondents (65.25%) believed that online marketing by corporate companies may not affect local meat business. Majority of butchers (85.59%) were unaware about modern slaughtering equipments. Considering the findings, a comprehensive skill development programme may be initiated on hygienic meat production.

INTRODUCTION

Livestock production and agriculture are intrinsically related to each other for overall food security. Livestock sector is an essential sub-sector of the agriculture of Indian economy. Livestock and poultry play an important role in improving the economic conditions of rural masses of India. Sustained income and economic growth, growing urban population, transportation and storage facilities and the rise of supermarkets in rural towns are crucial factors for the rapid increase in the consumption of animal-based food products. In India meat production is mainly an unorganized business, yet a vital segment of Indian agriculture. There are about 8000 registered and more than 20,000 unregistered slaughter houses in the country (Suwal, 2019). There is no specific data available on number of non registered retail meat shop across the India. Most

of the retail meat shops have inadequate facility and usually located on side of roads and streets.

The nation holds world's largest population of livestock at about 535.78 million and showed a 4.6 per cent increase over the previous census. Also, there was 16.8 per cent increase in the population of poultry (Panda et al., 2022). Maharashtra is one of leading state in livestock production and marketing. It ranks 5th, 6th & 7th against poultry, goat & sheep populations in country, respectively (GOI, 2019). Protein availability from poultry and sheep meat is projected to grow 17.8 per cent and 15.7 per cent respectively by 2030 (OECD-FAO, 2021). The average meat consumption of world is 35 kg/capita/annum while in India it is 5.2 kg/capita/annum (OECD-FAO, 2021; Devi et al., 2014). The Indian consumer prefers freshly slaughtered chicken, fresh and healthy meat prepared in front of eyes at local meat retail or butcher

shops. Yadav & Singh (2022) reported that 27.50 per cent of people consume fish, poultry, and chicken weekly followed by alternative week (17.50%). Consumers in developing countries also expect quality meat, good sanitary practices and assurance of safety (Bafanda et al., 2017; Waghmare et al., 2021). COVID-19 pandemic changed the consumption and purchase patterns of the consumers globally. The COVID-19 had impacted chicken wet market and also the livelihoods of the small retailers and butchers in India (Kumar et al., 2020). Meat has been identified as major source of food borne disease in humans, however butchers and meat handlers are unaware about various health hazards occurring due to inadequate infrastructure & sanitary practices (Tagar & Ahmed, 2021; Waghmare et al., 2021). Ideally, the butchers should possess basic education along with good understanding on sanitary practices and basic infrastructure facilities required for hygienic meat production. Food borne diseases are more common in developing countries because of the poor food handling and sanitation practices, insufficient food safety laws, and lack of education for food-handlers (WHO, 2004). Therefore, present study was planned to find out the marketing skills and sanitary status of retail meat shops considering educational background of butchers in Maharashtra.

METHODOLOGY

A cross sectional study design based on the questionnaire and a brief interview was done to assess the butchers on the educational status, legal compliance, marketing skill, knowledge on sanitary measures and business constraints. The study was conducted in various districts of Maharashtra state from August 2021 to September 2021 under Department of Science and Technology Project being carried out at College of Veterinary and Animal Sciences, Parbhani. Butchers to be interviewed were randomly selected and were assessed with the personal interview by visiting their retail shop. A total of 118 shops were surveyed. A semi structured schedule was prepared and used for face-to-face interview. Interviews were conducted in the vernacular language. The questions included the details of butcher's educational status, structure of the shop, license details, sales, their awareness towards the personal hygiene, shop hygiene, equipment, training, waste disposal. Some observations were made regarding their maintenance of shop, equipment, level of hygiene and methods of disposal of the waste. Data were analyzed using Microsoft excel, 2007. The findings were depicted in the form of percentages. Grouping of the principals was done based on their educational qualification for comparative analysis. Logistic regression was used to understand their preference for training need.

RESULTS AND DISCUSSION

The level of education, training of meat handlers about the basic concepts, requirements of personal hygiene and its

environment plays an important part in safeguarding the safety of products to consumers (Bersisa et al., 2019). The details of educational status with age of participants are described in Table 1. The study revealed that 19.49, 42.37 and 3.39 per cent of the respondents completed their primary, secondary and graduation education, respectively. 48.31 per cent of butchers under survey were of age group of 25 to 35 years. Jyoti et al., (2019) revealed that, 80.56 per cent of the butchers underwent primary school education and 47.22 per cent butchers had an average age between 18-30 years. Bafanda et al., (2017) reported that most of the meat handlers were from middle aged group and only males were involved in this profession, which holds true in our survey too.

Present study has shown that majority of butchers completed secondary & intermediate schooling, this data would help to justify educational backwardness of butcher community in higher education. As majority of butchers have secondary schooling indicate the basic literacy amongst the community.

Background information, training, licence status and market competition

The background information on business, training and licence status of butcher shop are described in Table 2. Significant ($p < 0.05$) majority of the butchers (67.80%) adopted this business as a family business compared to self adoption. 77.12 per cent respondents had not undergone any formal training regarding meat hygiene and handling practices. The awareness about hygienic meat production was rare and non-availability such type of training centres in the area as major reasons. The results were in agreement with Gurmu & Gebretinsae (2013) and Jyoti et al., (2019) who reported that 58.3 per cent and 63.89 per cent of the respondents had not acquired any training regarding meat processing and hygiene, respectively. The study is quite similar to study of Jagadish et al., (2017) wherein they reported 94% of the butchers had not gone through formal training.

The majority of respondents (58.47%) were ready to participate in training on meat business. Tuneer & Madhavi (2015) & Rayees et al., (2017) reported that personnel engaged in meat business lacks knowledge and training regarding scientific operations in slaughter houses, therefore skill development and capacity building amongst the butcher community is very essential to promote hygienic meat business. The trainings enable the participants to do their jobs much agile and helps the possession of new skill, knowledge and attitudes (Jaiswal et al., 2019). The study indicates that 80.51 per cent of respondent had registered their shop to their local authority like Municipal Corporation and Village Panchayat but 68.64 per cent respondents had not registered their shop with Food Safety and Standards Authority of India/Food and Drugs Administration (FSSAI/FDA). The results are in agreement with Jagadish et al., (2017) where, only 57.6 per cent of

Table 1. Age and educational status of butcher in Maharashtra

Educational Status	Primary	Secondary	Intermediate	Graduate
Age in years	22(19.49%) 18-25	50(42.37%) 25-35	41(34.75%) 35-45	4(3.39%) 45-55
	18(15.25%)	57 (48.31%)	40(33.90%)	3(2.54%)

Table 2. Background information, training, licence status and opinion about market competition

Information	Options	Result			Chi Square Statistic
		Educational Status		Overall Percent data (N=118)	
		Primary & Secondary (N=73)	Intermediate & Graduate (N=45)		
Traditional or Non-traditional business	Self -started	18 (24.66%)	30 (66.67%)	38(32.20%)	20.359**
	Traditional	55 (75.34%)	15 (33.33%)	80 (67.80%)	
Training undertook	Yes	9 (12.33%)	18 (40.0%)	27 (22.88%)	12.080**
	No	64 (87.67%)	27 (60.0%)	91 (77.12%)	
Willingness for training	Yes	43 (58.90%)	26 (57.78%)	69(58.47 %)	0.015 ^{Ns}
	No	30 (41.10%)	19 (42.22%)	49(41.53 %)	
Received help from Municipal Corporation/ Gram Panchayat for business	Yes	30 (14.10%)	33 (73.33%)	63 (53.39%)	11.626**
	No	43(58.90%)	12 (26.67%)	55 (46.61%)	
Shop registered with Municipal Corporation	Yes	60 (82.19%)	35(77.78%)	95 (80.51%)	0.346 ^{Ns}
	No	13 (17.81%)	10 (22.22%)	23 (19.49%)	
Registration with FSSAI	Yes	19 (26.03%)	18(40.0%)	37 (31.36%)	2.525 ^{Ns}
	No	54 (73.97%)	27 (60.0%)	81(68.64%)	
Market competition	Low	24 (32.88%)	10 (22.22%)	34 (28.81%)	2.215 ^{Ns}
	High	40 (54.79%)	26 (57.78%)	66 (55.93%)	
	No	9 (12.33%)	9 (20.0%)	18 (15.25%)	
Opinion about New online Marketing by corporate companies	Affect local Business	13 (17.81%)	10 (22.22%)	23 (19.49%)	4.177 ^{Ns}
	No going affect	45 (61.64%)	32 (71.11%)	77 (65.25%)	
	Affect business after few years	15 (20.55%)	3 (6.67%)	18 (15.25%)	
Marketing Strategy	News Paper/Leaflet distribution	1 (1.37%)	1 (2.22%)	2 (1.69%)	11.180**
	WhatsApp	15 (20.55%)	10 (22.22)	25 (21.19%)	
	Advertise board in city/village	45 (61.64%)	32 (71.11%)	77 (65.25%)	
	Online App for Sale	0 (0.00%)	2 (4.44%)	2 (1.69%)	
	No	12 (16.44%)	0 (0.00%)	12 (10.17%)	

(Ns-Non Significant, * Significant at 5% (table value 3.84), ** Significant at 1% (table value 6.64)

the shops had a valid license from government agencies. Strict vigilance from FSSAI and Local bodies is necessary to control unauthorised meat business and FSSAI authorities need to undertake promotional activities and encourage butchers to register by organising special campaigns.

The study reported that (55.93%) respondents from primary intermediate and graduated group felt that they may have to face higher competition in retail meat business in future. The majority of butchers (65.25%) opined that new online marketing by corporate companies did not going to affect their traditional retail meat business (p<0.01). The local retail butchers practice preliminary type of marketing strategies. The retail vendors (65.25%) depended upon advertisement boards (p<0.05). Only 1.69 per cent retailers used online applications for selling meat products and significant difference were observed in marketing strategies adopted by retailers. Butchers may choose social network messaging platform WhatsApp for marketing as it found to be more popular among youth for exchange information (Nain et al, 2019; Singh et al., 2021). With growing population and swelling demand for meat, better and appropriate promotion systems were needed and should be adopted at local level.

Meat selling potential, sanitary measures and modernization of shops

The study reported that the 51.69 per cent of butcher shop in Maharashtra have only one worker (Table 3). The butchers shop

selling both chicken and mutton/chevon had 2-3 workers. The average salary per worker ranged from 3-5 thousand per month. The average slaughter of 50 birds and 50 birds with goat or sheep was observed in 40.68 per cent and 42.37 per cent shops, respectively. Kumar et al., (2020) reported that average 18.4 birds were slaughtered in retail meat shops daily. As per the Foods Safety Act 2006, Schedule IV of FSSAI, retail meat shops slaughtering birds below 50 per day need to be registered with FSSAI. Majority of respondents (72.03%) reported that average chicken and mutton sale price were Rs. 180 and Rs. 680 per kg, respectively. Regarding sales of meat in post COVID 19 scenario mixed reports were received from the respondents. 50.85% respondents informed that the business decreased during post COVID-19 phase.

The COVID-19 pandemic was not major constraints for their business as compared to religious festivals (25.42%). The study contradicts with Kumar et al., (2020), who reported that COVID-19 had a visible impact on livelihoods, especially butchers/ retailers involved in unorganised slaughter sector with significant reduction in income up to 55.6 per cent. International meat prices declined in 2020 due to the impact of COVID-19 (OECD-FAO, 2021). The demands for meat and meat products increased during COVID-19 period as community thought that meat is healthy diet for COVID-19 patient, as well as physicians prescribed chicken soup (Rennard et al., 2020).

The study has shown that 98.31 per cent butchers' workers had habits of washing their hands with water by using hand wash

Table 3. Selling potential, sanitary measures, modernization of meat shops

Information	Options	Frequency (Percentage)
Workers and their salary	0-1 worker 3-5 thousand / Month	61 (51.69%)
	2-3 worker 3-5 thousand / Month	54 (45.76%)
	No Workers	3 (2.54%)
Per day slaughter & Sale of Bird/ Goat	1-5 Goat / day	15(12.00%)
	Up to 50 birds /day	48 (40.68%)
	Up to 150 Birds / day	3 (2.54%)
	Up to 50 birds +1- 5 Goat / day	50 (42.37%)
	Up to 150 Birds + 5 Goat / day	2 (1.69%)
Per kg selling price of meat during COVID 19 period	Chicken Rs 180 /kg Mutton Rs. 680 /kg	85 (72.03%)
	Chicken Rs 160 /kg Mutton Rs. 670 /kg	15 (12.71%)
	Chicken Rs 170 /kg Mutton Rs. 600 /kg	18 (15.25%)
Post COVID-19 Business	Increased	24 (20.34%)
	Decreased	60 (50.85%)
	Same	34 (28.81%)
Constraints	Festival	30 (25.42%)
	No modern technology	14 (11.86%)
	COVID Pandemic	4 (3.39%)
	Bird Flu	4 (3.39%)
	No Constrains	66 (55.93%)
Hands washing during sale	Yes	116 (98.31%)
	No	2 (1.69%)
Disposal place of blood offal/s, feather & other wastes	Municipal Corporation / Grampanchayat	72 (61.02%)
	Self disposal	46 (38.98%)
Recycling waste	Yes	20 (16.95%)
	No	98 (83.05%)
Earning form wastes	Yes	22 (18.64 %)
	No	96 (81.36%)
Complete washing of Shop	Daily washing	99 (83.90 %)
	Weekly washing	17 (14.41%)
	Monthly washing	2(1.69%)
List of equipments available in a shop	Bleeding Cone, Scalding, Centriplucker	17 (14.41%)
	Carcass Wash basin	58 (48.15%)
	Bleeding Cone	32 (27.12%)
	No	11 (9.32%)
Plan for modernization of shop	Purchase New Machine	68 (57.63%)
	Tiles in shop	33 (27.97%)
	Other Methods	5 (4.24%)
	No modernization	12 (10.17%)

before and after sale of meat. The findings are in agreement with the reports of Yenealem (2020) who reported that 91.6 per cent butchers wash their hands after garbage disposal and before handling meat. Jyoti et al., (2019) observed that 13.89 per cent and 41.67 per cent workers do not have habits of washing their hands with water and soap before and after sale of meat, respectively. In current study, higher percentage of hand wash habit might be due to COVID 19 preventive norms which were continuously informed to people by various media. Handwashing is one of the first lines of defence in food safety; inadequate personal hygiene can put consumers' health at risk. It is necessary to cultivate a culture of food safety and handwash should be encouraged. Butcher shops must be equipped with adequate hand washing stations. Butcher's shops (61.02%) utilised local body facilities for disposal of slaughter waste, while majority of butchers (83.05%) were not aware recycling of slaughter waste. The waste disposal in meat processing industry may pose

problem in the areas of environment protection and sustainability. Upadhyaya & Ghimire (2018) showed that non availability of waste disposal system might result in the pile up paunch contents, other solid wastes, faeces, near the meat shops which may serve as the habitation for rodents, cats, and dogs. Non utilization of slaughter waste not only leads to loss of probable revenue but also generate major appealing and health problems along with environmental pollution.

The study reported that 83.90 per cent respondents clean their shop daily. The findings are not in agreement with Jyoti et al., (2019) where it was reported that 61.1 per cent of shops do complete washing of shop once in week or month which could reflect the risk of higher microbial contamination. Failure to appropriately clean and sanitize equipment could lead to the harbourage of pathogenic microorganisms that may cause foodborne infection. Ali et al., (2010) showed that use of disinfecting and

Table 4: Results of multivariable logistic regression for the training & licensing aspects of retail meat shop butchers in relation to educational status

Information	Options	Educational Status		Result		
		Primary & Secondary (N=73)	Intermediate & Graduate (N=45)	Odds Ratio	95% CI	P value
		Training undergone	Yes	9 (12.33%)	18 (40.0%)	0.29
	No	64 (87.67%)	27 (60.0%)	4.74	1.89-11.87	0.0009
Willingness for training	Yes	43 (58.90%)	26 (57.78%)	1.96	0.923-4.160	0.07
	No	30 (41.10%)	19 (42.22%)	0.50	0.240-1.018	0.07
Registered with local bodies	Yes	60 (82.19%)	35(77.78%)	1.31	0.521-3.320	0.55
	No	13 (17.81%)	10 (22.22%)	0.75	0.300-1.910	0.55
Registration with FSSAI	Yes	19 (26.03%)	18(40.0%)	0.5 2	0.234-1.160	0.11
	No	54 (73.97%)	27 (60.0%)	1.89	0.850-4.181	0.11

sanitizing agents for daily cleaning of butcher shops could elevate the hygienic status. 14.41 per cent butchers were using modern basic slaughter equipments such as bleeding cone, scalding, centripulcker in their shop and most of butcher's shops were not having basic equipments for poultry indicate their unawareness about modern equipments. Majority (57.63%) said that purchase of new machines was a plan for modernization but their unawareness about equipments was major concern. It is recommended that butcher shop operating license should be issued to people undergoing basic training on meat handling hygiene and practices (Chepkemoi et al., 2015).

Multivariable logistic regression model for training and licensing

The odds to undergo training among butchers tripled when butchers did complete primary and secondary education compared with butchers who underwent intermediate and graduate education. Similarly, butchers' interest in training does not affect by level of education but butchers' interest to participate in trainings becomes shown higher (Odds 1.96) compare to non-interested participants (Odds 0.50). The positive and negative association regarding registration of shop with local bodies & FDA, shown non-significant association with educational status. No significant difference in the odds of butchers registered with local bodies (Odds 1.31) and non registered (Odds 0.75) was noticed. Similar results were reported for registration of shop with FDA for FSSAI licence (Table 4).

CONCLUSION

Meat has been identified as major source of food borne disease however butchers and meat handlers were unaware about various health hazards occurring due to inadequate infrastructure & sanitary practices. Unawareness about the waste disposal and modern equipments in meat processing business may pose problem in the areas of environment protection and sustainability and hygienic meat production. Strict vigilance from regulatory bodies is necessary to control unauthorised meat business. In view of upcoming market competition, marketing skills and sanitary status of retail meat shops should be elevated through the butcher's skill development on hygienic meat production.

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