



An Online Survey of Consumers of Maharashtra Concerning the Expected Change in the Meat and Meat Product Business

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ABSTRACT

The present study was conducted to understand non-vegetarian consumer behavior, preferences, hygienic considerations and their expected changes in meat selling business. A questionnaire in Marathi language was designed with Google form for this online survey. Under these 194 (172 Male and 21 Female) respondents from all regions of Maharashtra state were surveyed. The study revealed that majority of consumers (90.21%) preferred hot, freshly slaughtered chicken meat (77.32%) which include all body parts of the carcass (56.19%) and them (70.62%) usually preferred to eat non-vegetarian food once or twice in a week. About 68.59% consumers preferred skinless chicken carcass slaughtered by any ritual method (53.76%). The study indicates that most of the consumers (70.62%) usually buy meat from the meat shop near to their residence and nearly 42.78% consumers showed concern about cleanliness and hygienic condition of the meat selling shop where from they buy non-veg products. Most of the consumers (82.38%) showed their willingness to purchase home delivery of minimal handled hygienic meat and for this they (86.17%) are ready to pay a slightly higher price. It indicates consumer concern about safety of food, but surprisingly, they are unaware of the food laws, quality guidelines, food safety standard. Almost all consumers (96.89%) agreed that there is a need to raise awareness and to educate consumers regarding this issue.

HIGHLIGHTS

- The Maharashtra consumers usually preferred freshly slaughtered chicken meat.
- Consumers are concerned about safety of non-veg food.
- They showed willingness to buy home delivery of machine cut meat.
- They are ready to pay slightly higher price for this.

Keywords: Consumer, Online Survey, Meat Safety, Awareness

The Maharashtra is the second-most populated state in India having 112,372,972 populations according to 2011 census. Herein decade the state of Maharashtra has registered a growth of 15.99% altogether population. Maharashtra state had 9.29% of the total population of India (Census of India, 2011). Livestock act as a source of protein in the form of milk, egg and meat. Maharashtra rank 5th in a poultry population taking 74.3 million poultry birds, along with this sheep and goat population were 2.7 million and 10.6 million, which are 7th and 6th largest population in a country respectively (GOI, 2019). According to the registrar general release 2018 survey,

state has a 59.8 percentage of non-vegetarian population (Anonymous, 2018). The value of meat products includes beef, mutton, pork, hides, skins produced in the country in the year 2016-17 was ₹ 1,94,454 crores with the second largest contributor of worth i.e. 21.18% (Central Statistical Organization, 2018).

The state of Maharashtra produced approximately

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517.5 thousand metric tons of poultry meat in financial year 2017 (Jaganmohan, 2020). India's meat market is valued nearly \$30 billion, with an annual growth of 20-25 percent. Purchasing meat is a daily activity and entails knowledge and information. Yet, Indian meat market has been unorganized, Lack of cold storage infrastructure, there are no government certified labs to standardize the quality of meat, trouble with the cleanness and handling of the meat, therefore Customers are facing lots of challenges while choosing meat for their eating (Wangdi, 2019). The meat consumers concerning expected changes in meat and meat products business are relatively an under researched topic in Maharashtra. In this situation, a consumer's online survey was conducted to study preferences and expectations of non-veg consumers. The finding, to be gained in this survey will guide the new entrepreneurs involved in the meat processing business to develop products matched with consumers' prospects and to carry out research and developments for economists, market analysts, scholars targeting consumer demands and expectations.

MATERIALS AND METHODS

Online survey was conducted by using Google form in which questionnaire was prepared in Marathi language containing questions related to meat consumption, awareness of consumers concerning type of meat, meat shop hygiene, meat packaging, etc. Total sample sizes of 194 respondents were taken for the survey from all regions of Maharashtra and therefore denote diversified population. Data obtained through survey form questionnaires were documented in a database formed in MS Excel 2016. The collected data were grouped together and presented in the form of frequencies and percentage.

RESULTS AND DISCUSSION

Background and source of purchase of meat and meat products

The background information on Gender, place of residence and source of purchase of meat and meat products by consumers has been depicted in Table 1. It had been observed that among the consumers the majority was Male (89.12%). In country food associated household works is finished by females, but still the buying of meat from market handled by males by majority of population within

the country (Kiran *et al.*, 2018; Kumar *et al.*, 2014). The advantage of the present study is that the urban and rural consumers were 54.92 and 45.08 percent, respectively which represent a diversified population of the state of Maharashtra (GOI, 2020). Some factors associated with gender, place of residence (Urban or Rural), consumption pattern generally have a consequence on meat consumption preferences (Gossard *et al.*, 2003). The majority of consumers favoured chicken meat (77.32 %), followed by Mutton (63.41 %) and other kind of meat (19.59 %). The preference and consumption of chicken meat are often considered as a universal phenomenon and chicken meat is greatly accepted by consumers worldwide as compared to the other meat consumption. The rise in chicken meat consumption could be due to the versatility of the meat, relatively low cost compare to other meat, the acceptance of the chicken meat to all or any religions and increase in the household income (Kiran *et al.*, 2014; Mohana *et al.*, 2014). Similar finding has been reported by many scholars (Kiran *et al.*, 2018; Karthikeyan *et al.* 2013). The majority of consumers responded that they usually consume non-veg diet 1 to 2 times a week (70.62%) and the rest of the consumers (29.96%) like to consume 3 to 4 times a week. Almost 71.26 % of the consumers usually preferred to purchase from known shops only, where they frequent to get the meat and the majority of consumers (70.62%) has mentioned this meat shops are located at less than 1 km distance from their residence. This constitutes one way of ensuring the quality of meat.

Food safety is a scientific discipline describing handling, preparation and storage of food in ways that prevent food-borne illness. Food safety has emerged as a very important global issue with international trade and public health implications. So as to make sure that the food sectors match up to the best global standards, the Government of India enacted an integrated food law called the Food Safety and Standards Act in August 2006 under this law Food Safety and Standards Authority of India was established which is that the regulating body associated with food safety and laying down of standards of food in India (<http://www.fssai.gov.in/>). These authorities set standards and license the manufacture of food products which are healthy and safe. A current survey revealed that nearly 85.49 % (No + Don't Know) consumers were unaware about whether the meat selling shops where since they buy non veg products registered with FSSAI or not

and about 47.42% consumers said this meat selling shops stink and smells bad. Within the present study, about half (42.78%) consumers weren't satisfied with the hygienic conditions and cleaning practices adapted by meat shops.

Table 1: Respondent background and Source of Purchase of Meat and meat products

Question	Options	Result
Sex	Male	172 (89.12%)
	Female	21 (10.88%)
Place of residence	Urban	106 (54.92%)
	Rural	87 (45.08%)
	Other	4 (2.06%)
	Chicken	63 (32.47%)
What type of non-veg do you usually eat?	Chicken & Other	4 (2.06%)
	Chicken & Mutton	54 (27.84%)
	Chicken, Mutton & other	29 (14.95%)
	Mutton	39 (20.10%)
	Mutton & Other	1 (0.52%)
How frequently do you eat non veg in a week?	1 to 2 times	137 (70.62%)
	3 to 4 times	57 (29.96%)
How far from your place is the meat shop located?	Less than 1 KM	137 (70.62%)
	More than 1 KM	57 (29.38%)
Do you buy non veg products from the same shop regularly?	No	55 (28.35%)
	Yes	139 (71.65%)
Is the cleanliness & hygiene maintained to the level of satisfaction at the meat shop where from you buy non veg?	No	83 (42.78%)
	Yes	111(57.22%)
Does the meat shop where from you buy non veg stink or smells bad?	No	102 (52.58%)
	Yes	92 (47.42%)
Is the meat shop where from you buy non veg products registered with FSSAI?	No	32 (16.58%)
	Don't Know	133 (68.91%)
	Yes	28 (14.51%)

Consumers Preferences and Consumption pattern

The non-veg consumption pattern and preferences for non-veg by consumers are given in Table 2. Majority of consumers favoured hot, fresh meat prepared in front of their eye (90.21%) rather than frozen or chilled meat (9.39%). Parallel finding was testified by various scholars

(Kumar *et al.*, 2014; Singh *et al.*, 2019; Verbeke, 2001). Consumers of the present study showed higher preference to whole carcass i.e. all body parts of carcass collectively (56.19%) rather than specific parts (43.81%) which could be accredited to cultural habituation. Also, the majority of consumers responded that they usually choose skinless chicken (68.59%). Ritual slaughter as the name proposes is based on religious beliefs of a particular religion. Religion as a part of culture impacts consumer attitude and behaviour in general (Pettinger *et al.*, 2004), and food buying decisions and eating behaviours (Mullen *et al.*, 2004). Divergent to the above statement, current data indicated that more than half (53.76%) consumers have not influence for ritual slaughter on buying choice.

Table 2: Preferences and Consumption pattern of consumers

Question	Options	Result
What is your preference while buying non veg?	Frozen	4 (2.06%)
	Chicken	
	Hot Fresh Meat	175(90.21%)
	Chilled	15 (7.73%)
	Packaged Meat	
Do you prefer buying meat parts separately or to buy it collectively?	All Parts	109 (56.19%)
	Collectively	
	Specific Part only	85 (43.81%)
What kind of chicken do you usually prefer?	With intact skin	60 (31.41%)
	Skinless chicken	131 (68.59%)
What kind of slaughtered chicken do you usually prefer?	Non-Halal	15 (8.06%)
	Any of the above	85 (45.70%)
	Halal only	86 (46.24%)
Would you prefer buying ready-to-eat meat products in chicken/ meat shop?	No	131 (67.88%)
	Yes	62 (32.12%)

Value added processed meat products increase expediency to consumers by diminishing preparation time and curtailing processing steps. They are apprehending their share in the market. The growth of value-added processed meat products in the country is promising and is providing a massive opportunity for entrepreneurship progress (Kondaiah, 2004). Although, we are producing

huge quantity of meat only just 3% of meat is laid open to processing. Along with this street food vending has become a frightening public health question and various studies have identified oodles of disease-causing organisms in street foods. Surprisingly, about 67.88% consumers were not interested to buy ready to eat meat products from meat shops. This could be due to inexperience about processed food available in the market. Similar finding was reported from Bangalore city where the majority of consumers unaware to processed food (Kiran *et al.*, 2018).

Hygienic consideration and expectation of consumers

With the advancement of in acquaintance about the food they consume, the consumers have become more cautious regarding the quality and health aspects of foods (Selvan *et al.*, 2007). A direct link between acquaintance about food safety and lifestyle has been studied by scholars (Abdullahi *et al.*, 2016) Recent studies specified that consumers are concerned about the safety of non-veg food, but they have poor ability to differentiate meat (Li, 2012; Liang *et al.*, 2014). The data regarding hygienic considerations and expectation of consumers depicted in Table 3.

Table 3: Hygienic considerations

Question	Options	Result
Would you prefer buying machine cut meat being minimally handled?	No	34 (17.62%)
	Yes	159 (82.38%)
Would you prefer to buy neatly packaged non veg product delivered to your house?	No	64 (33.16%)
	Yes	129 (66.84%)
Would you prefer to buy hygienic & safe meat at slightly higher price than that of local market?	No	26 (13.83%)
	Yes	162 (86.17%)
Are you aware of the fact that FSSAI recommends storage of chicken/mutton for three days at 4-degree Celsius temperature?	Know	123 (63.73%)
	Don't	70 (36.27%)
	Know	
Has anyone so far explained to you the quality guidelines for chicken/mutton?	No	88 (45.60%)
	Yes	105 (54.40%)
Do you feel it's necessary to raise awareness about quality, hygiene & safety standards for meat?	Agree	187 (96.89%)
	Disagree	6 (3.11%)

From the obtained data it is revealed that about 82.38% consumers show their interest to buy minimally handle

machine cut hygienic meat. They also showed willingness to purchase home delivery of neatly packaged non-veg product home delivered (66.84%). The current finding showed consumers (86.17%) are ready to pay a slightly higher price for hygienic, clean non-veg products. About 36.27% of the consumers were unaware about safe storage of meat and meat products for more than three days, which restrict the sale and consumption of frozen or chilled packaged meat products. This could be due to 45.60% consumers were unaware of the quality guiding principle for chicken or mutton. On the query regarding inevitability to raise awareness, almost all consumers (96.89%) were agreeing on the need to spread knowledge and awareness about quality, hygienic production and safety standards for meat.

CONCLUSION

The present study revealed that most of the Maharashtra consumers prefer chicken meat followed by mutton and other type of non-veg. From the findings of the study it can be concluded that maximum number of consumers purchased non-vegetarian foods one to two times in a week and they usually preferred freshly slaughtered meat processed in front of their eyes from same shop which is located near to their residence, where they had trust and ensure meat quality. Nonetheless, they showed their willingness to buy home delivery of machine cut, hygienic meat and they are ready to pay a slightly higher price for this. More than half percent consumers preferred to buy skinless chicken, which could be benefiting the meat processor, because scalding, defeathering machine will not require hence, an initial investment of the meat processor will be low. It can be also concluded that consumers are concerned about the safety of non-veg food, but maximum people were uninformed of the food laws and food safety, hence, there is a great necessity to educate consumers concerning issues related to meat quality and hygiene through trainings and awareness programs.

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