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Situation Assessment of Livestock Markets in Central Plain Zone of Punjab

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A B S T R A C T

The present study was conducted to evaluate the scenario of the livestock markets in central plain zone of Punjab. There are total 5 big livestock markets in the central plain zone of Punjab. Out of these three markets namely Jagraon, Sadhugarh and Khanna deals majorly with productive animals sale purchase while rest two deals with sale-purchase of unproductive buffaloes (senile, calves etc) for meat purpose only. Present study was conducted in above mentioned three productive animal markets, two of which are modern and one is of traditional nature. A total 105 respondents selected randomly but equally from these three markets were interviewed personally on a pretested interview schedule. Descriptive Analysis of the data so collected was done and result revealed that majority of the respondents (56.2%) were in middle age group and studied 12th and above (62.9%) and about 1/3rd (31.4%) travelled more than 60 KMs to reach the market with a intention to fetch a handsome price of their animal(s). Brokerage system is widely prevalent in these animal markets and farmer felt it as a necessity for successful transaction of animals. Majority dairy animals were sold or purchased in second to third parity. There is dearth of common facilities like shed for all, water, fodder availability, emergency care in all the livestock markets studied. Price range, lactation yield, shed facilities, stray animals problems and market condition varies significantly ($P<0.05$) between modern and traditional animal markets studied. It was concluded that there is dire need to strengthen livestock markets in term of number, infrastructure, basic facilities, and vet facilities at market in order to smoothen the exchange of precious animals along with enhancing the awareness among livestock farmers.

Introduction

Animal husbandry being an integral part of Indian agriculture provides livelihood support to a majority of rural population. India stood first in the world in i) total livestock population (512.05 million) ii) in buffalo population with 56.7% of world total population and iii) in cattle population with 12.5 % of world total population (Livestock census, 2012). Punjab one of the smallest states of India located at northwest part of India with latitude and longitude ranged between 29"30'N - 32"32'N and 73"55'E -

76"50'E respectively. The total livestock population of Punjab state is 8.1 million. Total Bovine population in Punjab region is 7.5 million, which comprises of 2.06 million total exotic/crossbred cattle, 363 thousand total indigenous cattle and 5.15 million total buffaloes. Market is considered as vital part of livestock system as it provide an easy mechanism for livestock holder to exchange their animals for cash or other animals to fulfill their variety of needs ranging from food items, clothing, marriage of siblings to purchase of new animals or other inputs and supplies (Safdar 2011). Majorities of these markets are held in traditional way and at sporadic places. Government though developed few modern livestock markets (n=8) in Punjab to provide the better platform to livestock farmers to exchange their animals, but data on functionality, practices, pricing, brokerage , facilities available in these markets is very scarce. So, an attempt was made through this study to evaluate the scenario of modern and traditional markets of central plain zone of Punjab.

Materials and Methods

Three livestock markets (Jagraon, Sadhugarh & Khanna) have been selected from central plain zone of Punjab. Jagraon (Ludhiana) and Sadhugarh (Fatehgarh Sahib) were modern markets while Khanna (Ludhiana) is old traditional market. Modern livestock markets are those markets which were claimed as modern due to overhauling in certain basic facilities for animals by government in these places. Jagraon market held on date 22nd & 23rd, Sadhugarh on 2nd & 12th and Khanna on 8th, 15th & 28th of every month. It was observed that around 1000-1500 animals were brought in these markets for sale. A total 105 respondents were selected. (35 respondents from each market) randomly from these markets and were interviewed personally through using pretested interview schedule cum questionnaire. The study covers i) Socio-demographic characteristics of respondents ii) Market information sources iii) Travelling behaviour of the marketers iv) Market Charges v) Animal Pricing vi) Practices followed by livestock farmers before selling the animals vii) Market cleanliness and grading and viii) Comparison between modern and traditional livestock markets.

Data so collected were entered in excel sheets and were analysed descriptively. Chi square test was conducted to compare the modern and traditional livestock markets parameters.

Results and Discussion

Socio demographic characteristics of respondents:

Majority of the respondents were in middle age group (56.2%), 34.3% respondents were studied 12th and above (62.9%), having nuclear family (63.8%) , agriculture as main occupation source(54.3%) and were having less than five acre land holding(46.6%). NSSO (2013) survey also revealed that majority bovine population is with the marginal and small farmers having less than 5 acres of land holding. About 45% respondents have herd size of less than five (Table 1). All respondents were male. Earlier Girei *et al* (2014) also reported that cattle's marketing is a totally male oriented practice which may be due to tradition, culture and social belief or may be due to strength/energy requirement.

Market information source

Majority respondents (61%) get information from their friends and 34.3% of the respondents revealed that their market information source is from their own experience and markets itself as dates are prefixed (Table 2). Online livestock marketing gaining popularity nowadays but 61.9% respondents were not aware about online

marketing of the animals while rest (38.1%) have knowledge about online marketing from which few even sold or purchased animals online Earlier, Safdar (2011) also mentioned that there was no system to spread the market information & it only through personal contact. Friends/neighbours/ relatives, veterinary Officers, were key sources of information for dairy farmers (Singh et al, 2016)

Travelling behaviour of respondents

About 1/3rd (31.4%) respondents travelled more than 60 kms to reach the market for which 60% respondents used hired vehicles for transportation. Majority (53.3%) spent Rs.1000-2000 on transportation (Table 2). Mode of animal transportation to these markets could be either trekking or conventional methods like vehicles (Girei *et al*, 2014) and farmer choice depend upon distance, availability and affordability.Reason for selling and purchasing was trading purpose for 41.9% respondents and 76.2% respondents did not carry any first aid kit during transportation. 52.4% respondents revealed that they have average experience of marketing (Table 2).

Market charges and facilities

Market entry fee levied was Rs.20, reported 23.8% respondents and it varies from Rs 20 to more than Rs 50 while 71.4% revealed that there were no other market charges except market fee. Majority (68.6%) felt that middleman was necessary for successful transaction of animal(s) and middleman charges from seller varies from Rs.500 to above Rs 1000 whereas from the buyers these charges varies from Rs.500-5000 (Table 3). Major marketing channel observed in these markets was seller- broker- buyer. Respondents revealed that they purchased drinking water for animals (57.1%) and fodder facility was also lacking in the markets (76.2%). (Table 4). Transport cost, feeding at market, preparation cost and miscellaneous cost were reported as major cost component for seller and buyers (Das *et al*, 2014)

Animal pricing

Murrah breed of buffalo was found over numbered compared to other buffalo breeds in markets and it also fetches the highest price (83.8%). Similarly, HF crossbred cattle fetches the highest price among all cattle breeds (84.8%). Majority (39%) stated that price of the livestock was highest during the second lactation. There was no change in the price of animals due to sex of the calf at heal (51.4%) and majority (63.8%) reported an increase in price of the livestock from the previous years.

Body condition (91.4%), horns (58.1%), udder size (61.9%), gait (75.2%), lactation (78.1%), breed (61%), milk yield (52.4%), height (7.6%) and hoof structure (7.6%) were taken into consideration for declaring the price of animals by marketers. Body condition and age were the most governing attributes for the dairy animal price revealed Tesfaye (2010). Recently, Dixit *et al* (2016) also reported milk yield , parity and stage of lactation, shape and size of udder as the most important criteria used by the farmers in determining the price of a buffalo . Respondents judge the age of the animals by different ways. More than half (57.1%) considered the teeth's, 21% saw body condition and 18.1% judge the animal age from both teeth's & body condition. Only 3.8% expressed that they have ample experience of judging the age of the animals with naked eye along with above mentioned parameters. The maximum buffalo price in the market was reported to be between 70,000-1 lakh by majority (54.3%) and maximum cattle price ranged between 30,000-50,000 (Table 6).

Price of the animals varies in different seasons. Majority (51.4%) respondents quoted that they get higher price in winter season (table 2). While 16.2% revealed that there is no change in the price of animals due to seasons and 13.3% does not know if there is any change in the price. Khan *et al* (2006) also reported the seasonal variation in the price of meat & milch buffalo. They quoted highest price of milch buffalo during Jan-Feb months the milk yield in Himachal Pradesh.

Table.1 Socio-demographic characteristics of the respondents

Variable	Type	Frequency	Percentage
Age	Upto 30 yrs	22	21.0%
	30-50 yrs	59	56.2%
	Above 50 yrs	24	22.9%
Education	Illiterate	11	10.5%
	Below 10^{th}	13	12.4%
	Metric	15	14.3%
	12^{th}	36	34.3%
	Graduation and above	30	28.6%
Family Size	Upto 5	67	63.8%
	Above 5	38	36.2%
Land Holding	No land	8	7.6%
	< 5 acre	41	39.0%
	5-10 acre	33	31.4%
	Above 10 arce	23	21.9%
Main Occupation source	Agriculture	57	54.3%
	Livestock Rearing	17	16.2%
	Both	22	21.0%
	Others	9	8.6%
Herd Size(No.)	No Animals	2	1.9%
	< 5	47	44.8%
	05-15	44	41.9%
	15-25	11	10.5%
	Above 25	1	1.0%
Family involvement	Yes	73	69.5%
	No Education	32	30.5%
Duration of rearing livestock	< 10 yrs	22	21.0%
	10-20 Yrs	26	24.8%
	20-40 yrs	20	19.0%
	> 40 yrs	37	35.2%

Table.2 Travelling behaviour of the respondents

Variable	Type	Frequency	Percentage	Variable	Type	Frequency	Percentage
Type of animal	Male Buffalo calf	3	2.9%	Reason for selling/purchasing	High Number of animals	17	16.2%
	Female Buffalo calf	1	1.0%		Ecnomic Problem	15	14.3%
	Heifer	12	11.4%		Decrease in milk yield	7	6.7%
	Bull	7	6.7%		old Animal	3	2.9%
	Ist Lactation Buffalo	18	17.1%		Trading	44	41.9%
	II -III Lactation Buffalo	42	40.0%		Slaugther purpose	9	8.6%
	Female cattle calf	6	5.7%		Stock Exchange	10	9.5%
	Male cattle calf	1	1.0%	Carrying Medication	NA	2	1.9%
	Ist Lactation cattle	6	5.7%		Yes	23	21.9%
	II -III Lactation cattle	12	11.4%		No	80	76.2%
	Dry Buffalo	1	1.0%	Marketing Experience	High	35	33.3%
	Cattle Bull	2	1.9%		Medium	55	52.4%
	Old Animal (> 5 lactation)	7	6.7%		Low	15	14.3%
Distance Travelled	10-20 km	23	21.9%	High Price in which season	Summer	20	19.0%
	20-40 km	31	29.5%		Winter	54	51.4%
	40-60 km	18	17.1%		No change	17	16.2%
	> 60 km	33	31.4%		Don't Know	14	13.3%
Mode of transportation	Own Vehicle	42	40.0%	Market Information source	Friends	64	61.0%
	On Rent	63	60.0%		Newspaper	2	1.9%
Cost on transportation	Upto Rs 1000	37	35.2%		Internet	3	2.9%
	Rs 1000-2000	56	53.3%		Other (own experience)	36	34.3%
	Above Rs 2000	12	11.4%				

Table.3 Market charges

Variable	Type	Frequency	Percentage
Market entry fees	No fees	10	9.5%
	20 Rs	25	23.8%
	25 Rs	10	9.5%
	30 Rs	21	20.0%
	40 Rs	7	6.7%
	50 Rs	18	17.1%
	Above 50 Rs	14	13.3%
Other market charges(Rs.)	No	75	71.4%
	100-300 Rs	13	12.4%
	300-500 Rs	17	16.2%
Middleman necessary or not?	Yes	72	68.6%
	No	33	31.4%
Middleman charges from Seller	200-300 Rs	7	6.7%
	500 Rs	33	31.4%
	500-1000 Rs	13	12.4%
	Above 1000 Rs	6	5.7%
	No charges	17	16.2%
	Don't Know	29	27.6%
Middleman charges from buyer	Upto 500 Rs	15	14.3%
	500-1000Rs	37	35.2%
	1000-2000 Rs	20	19.0%
	1000-5000 Rs	14	13.3%
	Above 5000 Rs	1	1.0%
	Don't Know	18	17.1%

Table.4 Facilities in the market

Variable	Type	Frequency	Percentage
Availability of water	Yes (Free)	39	37.1%
	Paid (200 Rs/Tub)	60	57.1%
	Don't know	6	5.7%
Availability of fodder	No	80	76.2%
	Paid @1-5 Rs/Kg	6	5.7%
	Paid @5- 10 rs/Kg	7	6.7%
	Paid @100 Rs/Block	6	5.7%
	Don't Know	6	5.7%
Availability of sheds	Yes	43	41.0%
	No	55	52.4%
	Only for milch animals	1	1.0%
	For Regular traders	6	5.7%

Table.5 Animals pricing parameters

Variable	Type	Frequency	Percentage	Variable	Type	Frequency	Percentage
High price Buffalo breed	Murrah	88	83.8%	Effect on price due to sex of the calf at heal	Yes	50	47.6%
	Nili Ravi	8	7.6%		No	54	51.4%
	Bhadawari	9	8.6%		Don't Know	1	1.0%
High price cattle breed	HF cross	89	84.8%	Change in price of animals	Increases	67	63.8%
	Jersey	10	9.5%		Decreased	10	9.5%
	Non-Descript breed	6	5.7%		No change	21	20.0%
Price of animal Vs lactation	Ist Lactation	10	9.5%		Don't Know	7	6.7%
	IInd lactation	41	39.0%	Price as per demand	More	18	17.1%
	IIIrd Lactation	10	9.5%		Less	40	38.1%
	Ist & IInd lactation	24	22.9%		Yes	29	27.6%
	Ist to IIIrd lactation	20	19.0%		Fluctuation	18	17.1%

Table.6 Maximum price variation in dairy animals

Variable	Price	Frequency	Percentage
Buffalo price	Upto 50,000	2	1.9%
	50,000-70,000	21	20.0%
	70000-1.0 lakh	57	54.3%
	1.0-1.5 lakhs	23	21.9%
	Above 1.5 lakh	2	1.9%
Cattle price	20,000-40,000	21	20.0%
	30,000-50,000	52	49.5%
	50,000-70,000	23	21.9%
	70,000-1.0 lakh	9	8.6%

Practices followed by livestock Farmers before selling the animals

Various feeding practices were followed by the farmers prior to the marketing of the animals to enhance the animal outlook and production. High green fodder(18.1%) feeding to the animals , feeding ghee(oil) & Jaggery/sugar karha (7.6%), extra concentrate and choker feeding(31.4) and jaggary and boiled wheat feeding (4.8%) were certain practices reported to be followed by the seller. To make the udder look sizeable, sellers skip one (59%) to two (11.4%) milking of animals prior to the marketing. Sharma *et al* (1998) also highlighted the practices of giving jaggery for temporarily increasing

Market hygiene and grading

Majority respondents (58.1%) reported the average condition of livestock market studied on good, average and bad scale, 28.6% respondents observed good market conditions and the remaining 13.3% put on view that the market conditions were bad. Almost all (97.1%) disclosed that there was no provision of health certification, no vet help for fallen animals due to non availability of veterinarian in the livestock markets (Table 2). Present results are in agreement with Saafdar (2011) who also reported non availability of veterinary staff in livestock market for disease checking and health certification. Majority (52.4%) encountered with problems of stray dogs and animals and further, they (76.2%) found no facility for their resting.

Comparison between modern and traditional livestock market facilities

Chi-square test results found no significant difference ($P>0.05$) between the socio-demographic characteristics of the respondents, travelling behaviour, market charges, middleman charges, availability of water and fodder, feeding practices before selling of animals , health certification by veterinarians, ramp facilities etc in modern and traditional livestock market however significant difference($P<0.05$) were observed in shed facility for animals, maximum cattle price, milk yield, market condition, stray animal problems, cleanliness of animal tethering place/market, drainage of water and resting place between modern livestock market and traditional livestock market. Ghafoor *et al* (2017) revealed that majority of the farmers were satisfied with facilities in the model cattle market as compared to traditional livestock market of west Punjab. They found significant difference in education of the farmers, farming experience, land holding, distance of farmers from model cattle market, number of visits of extension workers, and perceptions of farmers about prices in model cattle markets compared to traditional cattle markets .

In conclusions, majority animals sold or purchased at Jagraon, Sadhugarh and Khanna markets were productive in nature. In spite of various constraints, farmer's preferred specified livestock markets to sell their animals at higher price and for which they often travelled an average distance of more than 40 Km and spent Rs. 1000-2,000 on transport of animals. Among the productive animals markets of the central plain zone studied, Jagraon market is reported as best on price and facility basis. There is dearth of common facilities like free shed, water, fodder, emergency care in all the livestock markets studied. Price range and lactation yield varies significantly ($P<0.05$) between modern and traditional productive animal market. Majority of dairy animals were sold or purchased in second to third lactation. Market charges, middleman charges, facilities and market condition vary significantly between modern and traditional livestock markets. Brokerage system is widely

prevalent in live productive animal market and farmer felt it as a necessity.

Some Suggestions to improve the livestock marketing function

1. Government should focus on strengthening the livestock markets both in terms of number and infrastructure in the State besides promoting the livestock framings.
2. Efforts should be taken to enhance the information literacy of the dairy farmers about farming and marketing through strengthening livestock extension wings where exists and through convergence of line departments. Wider dissemination of well updated information to the farmers especially marginal and small can play a role in improving their access to livestock markets as well as their trading ability.
3. Livestock markets can act as risk points to spread the zoonotic diseases to other animals or to human beings especially for traders and brokers. So health certification from the authorized veterinarian should be made mandatory before taking the animals to these markets. All measure should be taken to avoid the stray animals contact with domestic animals in these markets.
4. At least two veterinarians along with supporting staffs should be deputed in every livestock markets on stipulated dates, in order to check the health certificate and to provide the emergency services.
5. Official and transparent record of all animals arrived, successful transactions should be maintained. For this animal identification through RFID chip should be made mandatory.

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