

CASTE AND SOCIETAL MOVEMENT TOWARDS ADOPTION OF CROSS BREEDING TECHNOLOGY IN PIGGERY: A CASE OF 'T&D' PIG BREED IN EASTERN INDIA

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Abstract: The study explore the uptake of 'T&D' pig breed innovation among pig farming communities in Eastern region of India by revisiting diffusion of innovation theory. Livestock innovations must have maximum favourable attributes to attract the attention of the potential users of the technology. Most important attributes which draws farmers to the innovations are relative advantage over the technology it is going to replace, cultural compatibility and observability. Survey was conducted over 240 pig farmers' purposively selected from four states, viz., Jharkhand, Bihar, Chhattisgarh and West Bengal and one district was selected from each state, based on the concentration of pig farmers with the assistance of Krishi Vigyan Kendras (KVKs) in these states. As such, 240 pig farmers @ 60 pig farmers from each district were selected randomly across 4 states. Authors found that adoption of 'T&D' pig innovation was strongly influenced by socio-cultural grouping i.e. caste and other factors such as premium price, profitability, decrease in input cost, reduction in marketing uncertainty, litter size, comfort and time issue. Study revealed that the maximum pig farmers belonged to Schedule Tribe category (52.50%), Scheduled Caste community (28.30%), Other Backward Caste (11 The respondents from all the four states under the study stated that they typically received 100 per cent price premium on adoption of 'T&D' pig..70%) and 7.5 per cent of pig farmers belonged to General category in the study area.

Keywords: Caste, society, innovation, adoption, 'T&D' pig, India.

Introduction

Adoption behavior can be explained by perception about information needs, information input and information output patterns (Mudukuti and Miller, 2002; Randhir *et al.*,1996),

inter-system and intra-system communication pattern and knowledge level about farm technologies (Vasanta and Somasundaram 1988). Information input, information output, farmers' intra-system communication, farmer-researcher communication, farmer-extensionist communication, availability of input facilities and overall knowledge about dairy farming technologies has been found to be having positive and highly significant relationship with overall adoption level of farmers with respect to dairy farming technologies in East Azerbaijan of Iran (Rezvanfar,1997). Ensuring active partnership between livestock farmers, researchers and communication agents and availability of required inputs among livestock owners helps diffuse technologies towards speedier adoption of livestock innovations. Francis and Sibanda (2001) concluded that farmer participation should be an integral component of agricultural Research and Development programmes. The Diffusion of Innovation framework can be a useful tool to study livestock technology adoption behavior by the resource poor farmers from a number of resource rich farmers perspectives Pig production in India is characterized with wide gap between research and adoption. Most of the research results and recommended innovations concerning pigs in particular have remained confined to the four walls of laboratories and libraries. 'T&D' pig is one of the technologies developed and considered appropriate, thus, promoted and widely spread in Jharkhand, Bihar, West Bengal, MP and North Eastern states in India for enhancing sustainable livestock production with both environmental and socio-economic benefits. Especially, in recent past, its adoption is growing at fastest rate throughout Jharkhand as its benefit is observable over the years (Singh 2009, Seth 2012, Seth *et al.* 2014 and Seth *et al.* 2015). 'T&D' pig, therefore, is an innovation being diffused for adoption by the farmers through different channels under different schemes towards varying degree of its acceptance by the different caste/categories of farmers.

Material and Methodology

The study employed purposive and multistage random sampling technique to select the ultimate sampling units. 'T&D' pig was developed at Birsa Agricultural University, Ranchi, Jharkhand in 1989 and gradually spread within Jharkhand state (23° 23' N and 85° 23' E) and in its adjoining states, viz. West Bengal (23° 14' N and 87° 07' E), Bihar (42° 49' N and 85° 01' E) and Chhattisgarh (22° 53' N and 84° 12' E) were selected for the study. The latitude and longitude depicted districts were selected based on highest concentration of pig farmers. Most of the farmers in the selected regions were tribal and pork consumption was comparably very high among these communities. Surveys for the study purposely targeted

farmers who were engaged in pig husbandry for a minimum period of 5 years so as to have proper and reliable response on different variables. A semi-structured interview schedule was administered to 60 randomly selected farmers in each state, thus, making a sample size of 240 farmers.

Result and Discussions

Caste / Category

In rural India, caste still remains a matter of vital importance having influences on various aspects of rural life. The social stratification in terms of caste of the selected farmers is shown in Table 1. A perusal of this table reveals that about 61.7 per cent (Jharkhand), 70.0 per cent (West Bengal), 75.0 per cent (Chhattisgarh) and only 3.3 per cent (Bihar) of the pig farmers belonged to the Scheduled Tribe. Majority of pig farmers from Bihar (73.40%) followed by few farmers of West Bengal (20.00%), Chhattisgarh (11.70%) and Jharkhand (8.30%) belonged to the Schedule Caste community. About 16.7 per cent (Jharkhand), 6.7 per cent (West Bengal), 8.3 per cent (Chhattisgarh) and 15.0 per cent (Bihar) respondents were of Other Backward class category. Across the four selected states in study, only about 13.3 per cent (Jharkhand), 3.3 per cent (West Bengal), 5.0 per cent (Chhattisgarh) and 8.3 per cent (Bihar) of pig farmers belonged to General category. Overall, the maximum pig farmers belonged to Schedule Tribe category (52.50%), Scheduled Caste community (28.30%), Other Backward Caste (11.70%) and 7.5 per cent of pig farmers belonged to General category in the study area. Heffernan (2011), found that the adoption of *particular* vaccines was strongly influenced by socio-cultural grouping, i.e. caste, rather than other factor such as income, age, education-level or gender. Singh (1982, Singh *et al.* 1985 and Buttel 1990), observed that education was an important factor in influencing adoption of new agricultural technologies. This can be partly attributed to adoption to the new innovations tend to be better accepted in their social community and the category includes so called opinion leaders. Findings of study are referenced with Padel (2000), who reported that perception of relative profitability is more important than the actual values. Status aspects of farmers in adopting 'T&D' pig also appeared having important place in the respondents' considerations. The main comment provided by the respondents in terms of the status aspects of 'T&D' pig farming related was the consumers with the increased relationship and were curious about their pig farming and marketing practices Seth (2012). Pandey and Kumar (1999) observed that respondents' education was found to be positively and significantly associated with the adoption of improved pig rearing practices in all caste/categories in social system of the plateau region of

Bihar. Seth *et al.* (2016) reported that the 'T&D' pig innovator adopters were high level of social participation and high innovativeness.

Relative advantages of 'T&D' pig innovation perceived by society

The pig growers described several advantages of 'T&D' pig farming over conventional and traditional practices of rearing local pigs the most common of which as the price premium and profitability of the 'T&D' pig. Table 2 shows that respondents from all the four states under the study stated that they typically received 100 per cent price premium for the adoption of 'T&D' pig. The respondents from all the four states under the study stated that they typically received 100 per cent price premium on adoption of 'T&D' pig. The views of pig farmers on economic advantage of innovation revealed that profitability increased (100.00%), 74.60 per cent and 70.80 per cent viewed reduction in marketing uncertainty and decrease in input cost, respectively through adoption of 'T&D' pig farming. Most of the respondents (71.70%) perceived adoption of innovation decreased the amount of time spent on performing farming activities and increased the comfort level (75.40%) of farmers. Further, 88.75 per cent farmers received immediacy of reward from the social network and government officials due to adoption of 'T&D' pig innovation. Singh (2001) reported that pigs were reared by tribal farmers as subsidiary occupation irrespective of categories of farmers. It was an important source of income and employment for landless households, which provided 185 man day's annual employment and contributed 49% to total annual income. Seth (2012), Seth *et al.* (2014) and Seth *et al.* (2015) reported that the adoption of 'T&D' pig innovation has a greater positive impact in Eastern and north-eastern India which is observed through improved socio-economic conditions across caste and categories of the pig farmers. Further, commented that 'T&D' pig which is developed based on local needs and aspiration all categories of the people is widely diffused and adopted due to relative advantages, faster growth rate and high premium price over local pig.

Thus, it has inferred that livestock innovations must have maximum favourable attributes to attract the attention of the potential users of the technology. Most important attributes which draws farmers to the innovations are relative advantage over the technology it is going to replace, cultural compatibility and observability. The farmers must see clear benefits when taking decision to adopt the innovation or reject it. A technology must be simple, feasible to practice, compatible to the context of the farmers and their farming circumstances, needs and experiences.

Conclusions

It has concluded that the pig farming was traditionally predominant occupation of socially weaker sections like scheduled tribes and scheduled castes, who were also the major consumer of pork and had high values attached to pigs for the reasons of culture, custom, festivities and rituals. With increasing urbanization, industrialization, commercialization in the society, other sections of the society were finding piggery as an economically rewarding proposition, thus adoption of pig innovation was not restricted to the traditional pig keepers but it was also being opted by the farmers belonging to higher strata of society. The future of pig farming appeared to be bright with advancing time.

References

- [1] Francis, J. and Sibanda, S. 2001. Participatory action research experiences in smallholder dairy farming in Zimbabwe. *Livestock Research for Rural Development*, 13: 3.
- [2] Hoffernan, C., Thomson, K. and Nielsen, L. 2011. Caste, Livelihood and livestock: An exploration of the uptake of Livestock Vaccination adoption among poor farmer in India. *Journal of International Development*, 23 (1): 103-118.
- [3] Mudukuti, A.E. and Miller, C. 2002. Factors related to Zimbabwe women's educational needs in agriculture. *Journal of International Agricultural Extension and Education*, 9 (2): 47-53.
- [4] Padel, S. 2000. Unpublished research in progress .Aberystwyth: University of Wales.
- [5] Pandey, A.K. and Kumar, R. 1999. Factors affecting adoption of improved pig rearing practices in tribal areas. *Indian Journal of Animal Sciences*, 69 (5):350-351.
- [6] Randhir, R., Tyagi, K.C. and Singh, R. 1996. A study of communication behavior of dairy farmers. *Indian Journal of Dairy Science*, 45 (8): 405-408.
- [7] Rezvanfar, A. 1997. Communication and socio-personal factors influencing adoption of dairy farming technologies amongst livestock farmers. *Livestock Research for Rural Development*, 19: 3.
- [8] Seth, P. 2012. Diffusion and Adoption of 'T&D' Pig Innovation. Ph.D. Thesis, Indian Veterinary Research Institute (Deemed University), Izatnagar, India.
- [9] Seth, P., Chander, M., Rathod, P.K. and Rewani, S.K., 2014. Cross-Breeding Interventions in Piggery: Genesis, Diffusion and Adoption of 'T&D' Pig Breed in Eastern India. *Journal of Interacademia*,18(1): 141-148.

- [10] Seth, P., Chander, M., Singh, N. and Kumari, R. 2016. Characteristics of adopter categories of 'T&D' pig breed innovation in Eastern India. *International Journal of science, Environment and Technology*, 5 (5): 3381-3386.
- [11] Seth. P., Chander M., Pandey, H.K. and Kumari, R. 2015. Motivation to convert from traditional to improved livestock breed innovation: A case of 'T&D' pig breed farming in eastern region of India. *Annals of Plant and Soil Research* 17 (Special Issue):91-93
- [12] Singh, Balkishan, Mahipal and Tyagi, K.C. 1985. Some selected socio-economic characteristics of the farmers of progressive and non- progressive dairy villages. *Indian Journal of Extension Education*, XXI: 3-4.
- [13] Singh, R.D. 1982. Location effects on the adoption of new farm technology in North India. *Indian Journal of Agricultural Economics*, 37 (4): 495-502.
- [14] Singh, R.P. 2001. Contribution of pig enterprise in the tribal economy of Jharkhand state. *Indian Journal of Dairy and Biosciences*, 12: 84-86.
- [15] Singh, S.K. 2009. Farmer reap pig profit. *The Telegraph*, Calcutta, India. Monday, July 13.
- [16] Vasanta, K.J. and Somasundaram, D. 1988. Communication behavior of tribal leaders and their followers in progressive and less progressive settlements. *Indian Journal of Extension Education*, 24(34): 7-15.

Table 1: Distribution of the respondents on the basis of their caste/category

Category	Jharkhand		West Bengal		Chhattisgarh		Bihar		Pooled	
	f	%	f	%	f	%	f	%	f	%
SC	05	8.3	12	20	07	11.7	44	73.4	68	28.3
ST	37	61.7	42	70	45	75.0	02	3.3	126	52.5
OBC	10	16.7	04	6.7	05	8.3	09	15.0	28	11.7
General	08	13.3	02	3.3	03	5.0	05	8.3	18	7.5
Total	60	100	60	100	60	100	60	100	240	100

Table 2: Relative advantage of 'T&D' pig farming perceived by pig farmers

Relative advantage	Jharkhand (n=60)			West Bengal (n=60)			Chhattisgarh (n=60)			Bihar (n=60)			Pooled (n=240)		
	Y	N	NC	Y	N	NC	Y	N	NC	Y	N	NC	Y	N	NC
Economic factors															
Ability to secure a premium price for piglets & pork	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	240 (100)	-	-
Profitability of farm increased	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	240 (100)	-	-
Decrease in input cost	45 (75)	10 (16.7)	5 (8.3)	41 (68.3)	17 (28.3)	2 (3.3)	44 (73.3)	8 (13.3)	8 (13.3)	40 (66.7)	18 (30)	2 (3.3)	170 (70.8)	53 (22.1)	17 (7.1)
Reduction in marketing uncertainty	48 (80)	12 (20)	-	43 (71.7)	17 (28.3)	-	46 (76.7)	14 (23.3)	-	42 (70)	18 (30)	-	179 (74.6)	61 (25.4)	-
Increased litter size	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	240 (100)	-	-

Increased body weight	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	60 (100)	-	-	240 (100)	-	-
Increased credibility with buyers	55 (91.7)	5 (8.3)	-	52 (86.7)	8 (13.3)	-	48 (80)	12 (20)	-	45 (75)	15 (25)	-	200 (83.3)	40 (16.7)	-
Other farmers' viewed 'T&D' pig grower more positively	52 (86.7)	-	8 (13.3)	50 (83.3)	-	10 (16.7)	53 (88.3)	-	7 (11.7)	42 (70)	-	18 (30)	197 (82.1)	-	43 (17.9)
Comfort and time issues															
Decrease in the amount of time spent performing	44 (73.3)	11 (18.3)	5 (8.3)	45 (75)	9 (15)	6 (10)	43 (71.7)	9 (15)	8 (13.3)	40 (66.7)	12 (20)	8 (13.3)	172 (71.7)	41 (17.1)	27 (11.2)
Increase in comfort level	46 (76.7)	-	14 (23.3)	43 (71.7)	-	17 (28.3)	47 (78.3)	-	13 (21.7)	45 (75)	-	15 (25)	181 (75.4)	-	59 (24.6)
Immediacy of reward															
Received from farmers and Government official	58 (96.7)	-	2 (3.3)	55 (91.7)	-	5 (8.3)	52 (86.7)	-	8 (13.3)	48 (80)	-	12 (20)	213 (88.75)	-	27 (11.25)

Y : Yes; N : No; NC : No comment

Figures in parenthesis indicate per cent