

CRISIS MANAGEMENT PRACTICES ADOPTED BY BROILER POULTRY FARMERS

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ABSTRACT

An investigation was carried out to study the crisis management practices adopted by the broiler poultry farmers with objectives to study profile, crisis management practices adopted and to find out relationship between profile and crisis management practice adopted. Ex-post facto research design with fifty broiler poultry farmers were selected randomly from Anand and Vadodara district. Thus, 100 poultry farmers were total sample size. Data collected by personal interview and was classified, tabulated and analyzed. Majority of poultry farmers do not plan money in advance. Almost all of the poultry farmers surveyed always or sometimes use to spread gunny bags over the roof of poultry farm. Majority of the farmers always use more electric bulb during winter. Majority of poultry farmers took preventive measure in outbreak of diseases. One third of the poultry farmers surveyed always do construction of deep litter instead of cage system. More than half of the poultry farmers prepared feed by their own. More than half of poultry farmers always carried out the practice of debeaking to control feed wastage. Age, type of family and experience in poultry farming found non-significant. The constraints faced by poultry farmers in adoption of crisis management practices are discussion with suggestions.

Keywords: crisis management, adoption, broiler poultry farming

INTRODUCTION

Crisis management is a strategic approach used by individuals, organizations or governments to navigate and respond effectively to unexpected and potentially damaging events. This involves a range of actions, processes and plans aimed at minimizing the adverse impact of a crisis and swiftly restoring stability. The population of India has crossed the 140 cores mark (Census of India, 2021). Although there are large numbers of projects for agriculture and allied sectors, there is no surety of filling the empty stomach of the people of our country in the years to come. Searching the other area of food production can solve this problem. Poultry farming offers one of the most promising avenues to alleviate the growing demographic pressures on agriculture. Apart from this it is the most potent source for subsidiary incomes for landless and poor farmers (Patel *et al.*, 2022). Poultry is an enterprise with low initial investment but higher economic returns (Thorat *et al.*, 2019) and can easily be managed by women, children and old aged persons of the households (Thorat *et al.*, 2016). To a large extent, poultry production benefits from the adoption of effective crisis management practices by farmers. In addition to addressing challenges such as high input costs and low market prices, further crisis management strategies should be considered to enhance production (Vinaya *et al.*, 2016). These measures can help reduce overall costs and ensure the easier availability of poultry products.

The man made as well as environmental factors play vital role on the production of poultry farming. Dynamic capabilities are thus are the keys to overcoming these

challenges effectively (Lisdiono *et al.*, 2022). It is therefore essential for poultry farmers to possess sound knowledge and skills in poultry management, along with the ability to remain proactive in handling crisis situations through the adoption of effective management practices. The use of such techniques may be linked to farmers' personal, socio-economic, and psychological characteristics. If these associations are identified, valuable inferences can be drawn to encourage and accelerate the adoption of crisis management practices among poultry farmers. Keeping this background, it was considered worthwhile to carry out the investigation on crisis management practices adopted by the poultry farmers in Anand and Vadodara district of middle Gujarat with following objectives.

OBJECTIVES

- (1) To study profile of poultry farmers
- (2) To study crisis management practices adopted by poultry farmers
- (3) To find out relationship between profile and crisis management practice adopted by poultry farmers
- (4) To seek suggestions for overcome constraints in adoption of crisis management practices

METHODOLOGY

Study was conducted in Vadodara and Anand district of middle Gujarat. Ex-post facto research design was applied for this study. From each district 50 poultry

farmers were selected randomly with minimum five years of involvement in poultry enterprise to include in the study. Quantitative methodological choice is used. Therefore, 100 poultry farmers were total sample size for this study. Survey based research strategy was used for present study. Data was collected by personal interview method and well-structured interview schedule was prepared in accordance with objectives. The data thus, collected were classified, tabulated and analyzed in order to make the finding meaningful. The statistical measures, such as percentage, mean score, standard deviation and correlation coefficient were used to analysis the data.

RESULTS AND DISCUSSION

Profile of broiler poultry farmers

Crisis management in poultry farming is understood as the set of activities undertaken by farmers to withstand and overcome various challenges whenever they arise. Majority of broiler poultry farmers belongs to the middle age group (65%) followed by old age group (25%). Only 10% of the broiler poultry farmers surveyed came from young age group (Table 1). Considering education, majority of broiler poultry farmers surveyed are educated upto primary schooling followed by upto secondary level (29%) followed by upto higher secondary level (19%). These findings are well corroborated with the findings of Ankuya and Ashwar (2014). Interestingly, 6% of the farmers surveyed have education level of graduate and above category. The possible reason for

this might be that the poultry farmers were aware regarding importance of education majority of poultry farmers are educated and accepted poultry farming as an occupation (Thorat *et al.*, 2025).

Coming to the type of family farmers belongs, it is observed that vast majority (90%) of the broiler poultry farmers are staying in joint family and only 10% of the farmers are staying in nuclear family. It is evident from the table 1 that exactly half of the broiler poultry farmers surveyed have annual income from poultry farm is between ₹ 50,000 to 1 lakh followed by 22% having ₹ 1 lakh above annual income from poultry farm. Only 12% of broiler poultry farmers surveyed showed the annual income from poultry farm upto ₹ 50,000 (Table 1). Considering occupation nearly one third of the broiler poultry farmers have animal husbandry along with poultry farm and nearly 40% have agriculture as an occupation along with poultry farm. Nearly one third (30%) of the broiler poultry farmers do some other business along with poultry farm. Considering the experience in poultry farm majority of farmers (42%) have experience of 6 to 10 years, followed by 30% of farmers have experience upto 5 years. Nearly 28% of the broiler poultry farmers surveyed have experience of more than 10 years in poultry farm. Coming to the size of poultry farm, 39% broiler poultry farmers surveyed have more than 10000 birds at their farm followed by 39% have 1000 birds at their poultry farm. Only 22% of the farmers have upto 500 birds at their poultry farm. These findings are in line with the findings of Ankuya and Ashwar (2014).

Table: 1 Profile of broiler poultry farmers

(n=100)

Profile	Category	Frequency (No.)	Percentage (%)
Age	Young	10	10
	Middle	65	65
	Old	25	25
Education	Illiterate	3	3
	Primary	43	43
	Secondary	29	29
	Higher secondary	19	19
	Graduate and above	6	6
Type of Family	Nuclear	10	10
	Joint	90	90
Income From Poultry	Up to 50,000/-	12	12
	Between 50001 to 1 Lakh	50	50
	1 Lakh above	22	22

Profile	Category	Frequency (No.)	Percentage (%)
Occupation	Poultry and Animal husbandry	31	31
	Poultry with Agriculture	39	39
	Poultry with some other business	30	30
Experience in Poultry	Up to 5 years	30	30
	6 to 10 years	42	42
	More than 10 years	28	28
Size of Poultry Farm	Up to 500 birds	22	22
	501 to 1000 birds	39	39
	More than 10001 birds	39	39

Crisis management practices followed by broiler poultry farmers

Finance related crisis management practices

Majority of poultry farmers (90%) do not plan money in advance for crisis management (Table 2). However, only 10% of poultry farmers have advanced planning for crisis management. Financial risks can be managed by diversifying funding sources and implementing careful financial planning. (Murrja *et al.*, 2023). Majority of poultry farmers never think of establishing poultry farm with partnership. Nearly 47% of poultry farmers sometimes or always plan their poultry farm establishment with one or more partners. Almost all poultry farmers surveyed during this study increases the number of birds as profit increases. This is also evident from the first rank in finance related crisis management practices. Similarly, Majority (89%) of poultry farmers surveyed during this study have initially started poultry farm with less number of birds. Interestingly, only 44% of poultry farmers surveyed during this study started poultry farm with government subsidy (Table 2). Borrowing or lone from banks for running poultry farm ranks last (VI) in finance related crisis management practices. This suggests that poultry farmers do not depend on loan or government subsidy for starting poultry farm, they do use their own capital for establishment of poultry farm. This is also evident from this survey that 81% of poultry farmers never borrowed loan from banks for running poultry farm (Table 2). Akanni (2007) also reported that farmers mostly rely on personal and cooperative funding and face economic difficulties due to limited access to investment capital. This findings are in line with Murrja and Braha (2021) and Anusha *et al.* (2023).

Crisis management related to high temperature and lower temperature

Almost all of the poultry farmers (99%) surveyed always or sometimes use to spread gunny bags over the roof of poultry farm to manage high temperature during summer season (Table 2). Gunny bags over the roof of poultry farm were generally used to reduce the temperature in farm. Similar to this, majority of poultry farmers (96%) surveyed always or sometimes painted upper side of roof with white color and lime to reduce the temperature in their poultry farm. Saeed *et al.* (2019) suggested similar heat stress management in poultry farms. However, only 58% of poultry farmers always or sometimes used to keep fan inside poultry farm. Only 8% of poultry farmers use to arrange fogger in summer, half of the poultry farmers surveyed use foggers sometimes and 42% of the farmers never use fogger in their poultry farm during summer. This may be due to the cost involved in installation of fogger in poultry farm. Goswami *et al.* (2024) also suggested to use fogger to manage high temperature at poultry house. Construction of poultry farm in east west side is of little significance as evident from this study that 42% of farmers never thought of constructing poultry farm in east west direction. However, 52% of the farmers have thought of constructing poultry farm in east west direction sometimes and only 6% of poultry farmers thought for the same (Table 2) and this strategy ranks II in this study. Similar observations were recorded by Goswami *et al.* (2024). Majority of the farmers (48%) always use more electric bulb used during winter for birds and 47% of poultry farmers sometimes use more electric bulb used during winter for birds. The use of electric bulb during winter season is common and cheap technique to keep bird warm during winter season (Table 2). Use of more electric bulb used during winter for birds for crisis management related to high temperature and lower temperature ranks first in this study.

Table 2: Crisis management practices followed by broiler poultry farmers

(n=100)

Sr. No	Practices	Always	Sometimes	Never	Mean score	Rank
Finance related crisis management practices						
1	Increase number of birds with profit	39	60	1	1.38	I
2	Planning for money in advance	10	90	0	1.10	II
3	Started poultry farm with government subsidy	34	10	56	0.78	III
4	Planning poultry farm in partnership	8	39	53	0.55	IV
5	Initially started with less birds	41	48	11	0.30	V
6	Borrowed lone from banks for running poultry farm	8	11	81	0.27	VI
Crisis management related to high temperature and lower temperature						
1	More electric bulb used during winter for birds	48	47	5	1.43	I
2	Construct poultry farm in East West side	6	52	42	1.24	II
3	Spread gunny bags over the roof of poultry farm	23	76	1	1.22	III
4	Painted upper side of roof with white color and lime	14	82	4	1.10	IV
5	Arrange fogger in summer	8	50	42	0.66	V
6	Keep fan inside poultry farm	6	52	42	0.64	VI
Health care related crisis management practices						
1	Take preventive measure in outbreak of diseases	35	65	0	1.35	I
2	Obtain guidance of Veterinarians to check health of birds	33	58	9	1.24	II
3	Adopt bio security measures	32	57	11	1.21	III
4	Isolation of sick birds	31	38	31	1.00	IV
5	Managed litter properly	35	26	39	0.96	V
6	Take insurance of birds	12	11	77	0.35	VI
Housing related crisis management practices						
1	Construction of deep liter instead of cage system	35	32	33	1.02	I
2	Use soil instead of cement in construction of floor	35	30	35	1.00	II
3	Construction site of poultry house should be at higher elevated place	28	42	30	0.98	III
4	Construct small poultry farm initially	23	49	28	0.95	IV
5	Construction site of poultry farm have 24 hour water and electric facility	26	38	36	0.90	V
6	Poultry house should be near to market place and main road	23	42	35	0.88	VI
Feed related crisis management practices						
1	Carried out debeaking to control feed wastage and cannibalism	56	35	9	1.47	I
2	Stored feed in rodent proof storage	55	36	9	1.46	II
3	Procured feed of standard company	22	58	20	1.02	III
4	Prepare feed by your own	20	54	26	0.94	IV

Health care related crisis management practices

Health care related crisis is a significant challenge to poultry sector to safeguards consumer health and environmental safety and poultry health (Paula *et al.*, 2018; Chapot *et al.*, 2024). Majority of poultry farmers (65%) took preventive measure in outbreak of diseases and (35%) of the poultry farmers surveyed always took preventive measure in outbreak of diseases which is a good sign for crisis management. This strategy ranks first among health care related crisis management practices. Majority of poultry farmers (58%) obtained the guidance of veterinarians to check health of birds sometimes and (33%) of the poultry farmers surveyed always seek the guidance of veterinarians to check health of birds (Table 2) which is a good sign to prevent

any unforeseen crisis or disease outbreak. This strategy ranks second among health care related crisis management practices. Majority of poultry farmers (57%) adopt bio security measures sometimes at their poultry farm and (32%) of the poultry farmers surveyed always adopt bio security measures at their poultry farm which is a good practice for the prevention of disease causing agents entering or leaving any place where they can pose a risk to farm animals, other animals, humans, or the safety and quality of a food product. Bio security measures ranks third among health care related crisis management practices. Nassar and Abbas (2025) also suggested health monitoring and preventive planning for poultry farms. Majority of poultry farmers (77%) are not serious about taking insurance of their birds and they never do that. However, only 12% of poultry farmers surveyed

always take insurance of their birds and 11% of them take insurance sometimes.

Nearly one third of the poultry farmers surveyed always managed litter properly at their farm and one fourth of the poultry farmers surveyed managed litter properly sometimes at their farm (Table 2). However, nearly 40% of the poultry farmers surveyed never think of managing litter properly at their farm. This ranks fifth among health care related crisis management practices. This may be harmful to the environment and may cause hygienic problems in adjacent areas. Nearly one third of the poultry farmers surveyed always do the practice of isolation of sick birds at their farm and nearly 40% of the poultry farmers surveyed do the practice of isolation of sick birds at their farm. However, one third of poultry farmers surveyed never think of isolation of sick birds at their farms (Table 2). This may create the problem of disease outbreak at their farm and may cause management related crisis at farm which can be prevented by timely isolation of sick birds.

Housing related crisis management practices

Poultry housing which plays a central role in managing internal climatic conditions essential for the well-being, growth and productivity of birds. Nassar and Abbas (2025) emphasizes the importance of recognizing risk management in housing related crisis management practices. In this study more than one third of the poultry farmers (35%) surveyed always do construction of deep litter instead of cage system at their farm and nearly 32% of the poultry farmers surveyed do construction of deep litter instead of cage system sometimes at their farm (Table 2). This ranks first among housing related crisis management practices. Interestingly, one third of the poultry farmers (33%) surveyed never think construction of deep litter instead of cage system at their farm. Majority of poultry farmers think of construction of deep litter as the choice of poultry housing system depends on the prevailing climatic conditions of the region where the farm is located with the aim of achieving greater production efficiency (Kumar *et al.*, 2018; Ilyas Lahlouh *et al.*, 2020). It is evident from this study that one fourth of the poultry farmers (23%) surveyed always started with construction small poultry farm initially. Nearly half of the poultry farmers surveyed have thought of starting with construction of small poultry farm initially. However nearly one third of the poultry farmers never thought of construction small poultry farm initially, they started with capital they have preferably big one (Table 2).

A practice of use soil instead of cement in construction of floor is always followed by 35% of the farmers, sometimes this practice is followed by 30% of

the poultry farmers surveyed. However 35% of the poultry farmers never think of following the practice of use soil instead of cement in construction of floor at their farm. One fourth of the poultry farmers always think of construction site of poultry farm to have 24 hour water and electricity facility. However, 38% of the poultry farmers sometimes think of construction site of poultry farm to have 24 hour water and electricity facility. Interestingly, one third of the poultry farmers never think of construction site of poultry farm to have 24 hour water and electricity facility (Table 2). These two aspects should be given maximum attention to have a profitable poultry farm. Only one fourth of the poultry farmers surveyed always think that their poultry house should be near to market place and main road and 42% of farmers think this important aspect sometimes. However, one third of the farmers never think of this important aspect of having market place nearby. Only one third of the poultry farmers always think that the construction site of poultry house should be at higher elevated place. Nearly half (42%) of the poultry farmers sometimes think that the construction site of poultry house should be at higher elevated place. This ranks third among housing related crisis management practices. One third of the poultry farmers never think that the construction site of poultry house should be at higher elevated place. They start the poultry farm at the place which is easily available and cheap (Table 2). However, Reddy (2023) suggested that poultry house should be constructed at higher elevated place.

Feed related crisis management practices

In poultry farm, feed is important aspect and should be given maximum attention as the productivity of the farm is depend on proper and optimum nutrition. More than half of the poultry farmers (54%) sometimes prepared feed by your own. Nearly, 20% of the poultry farmers always prepared feed by your own at their farm. However, 26% of poultry farmers never prepared feed by your own at their farm (Table 2). This may be due to sudden feed price volatility and high price of readymade feed. Farmers evaluated these risks and applying preventive strategies such as home-made feed (Nassar and Abbas, 2025). Nearly 22% of the poultry farmers always procured feed of standard company for their birds. More than half of poultry farmers (58%) sometimes procured feed of standard company for their birds. This strategy ranks third among feed related crisis management practices. More than half of poultry farmers (54%) always stored feed in rodent proof storage for their birds which is good practice. This strategy ranks second among feed related crisis management practices. However, 36% of poultry farmers sometimes stored feed in rodent proof storage for their birds at either rented for nearby store house. Nearly 9% of poultry farmers surveyed never stored feed in rodent proof storage for their

birds (Table 2).

More than half of poultry farmers (56%) always carried out the practice of debeaking to control feed wastage. Only 36% of the poultry farmers sometimes carried out the practice of debeaking to control feed wastage. This strategy ranks first among feed related crisis management practices. This important practice of debeaking to control feed wastage as well as cannibalism is never practice by the nearly 10% of the poultry farmers surveyed (Table 2).

Relationship between the profile of broiler poultry farmers and adoption crisis management practices

Age, type of family and experience in poultry farming found non-significant (Table 3). Education and size of poultry farm found highly significant because with education poultry farmers know more about crisis management practices. The result shows that high level education of the farmers played a role in making them capable to understand process of adoption of crisis management practices (Vaidya and Chauhan, 2012b). Annual income and occupation found significant because with have optimum income they can manage their finances in crisis situation. The level of adoption of crisis management practices in poultry farming by the poultry farmers was observed positively significant with their education, annual income, occupation and size of in poultry farming.

Table 3: Relationship between the profile of broiler poultry farmers and adoption of crisis management practices
(n = 100)

Sr. No.	Independent variables	Correlation Co-efficient (r value)
X ₁	Age (Years)	0.1573 (NS)
X ₂	Education	0.2612 **
X ₃	Type of family (Nos.)	0.0898 (NS)
X ₄	Annual Income (₹)	0.2256 *
X ₅	Occupation	0.2169 *
X ₅	Experience in poultry farming (Years)	0.0834 (NS)
X ₆	Size of poultry farm (No. of birds)	0.3188 **
NS = Non significant, * = significant at 0.05 level, ** = Significant at 0.01 level		

Constraints

The constraints faced by poultry farmers in adoption of crisis management practices are high death rate at disease

outbreak (92.00%), shortage and high rate of labour (90.00%), high rate of day-old chick (70.67%), difficulty in getting bank loan (78.33%), high cost of equipment (62.67%) (Table 4).

Table 4: Constraints in adoption of crisis management practices

Sr. No.	Constraints in adoption of crisis management practices	(%)
1	High death rate at disease outbreak	92.00
2	Shortage and high rate of labour	90.00
3	High rate of day-old chick	70.67
4	Difficulty in getting bank loan	78.33
5	High cost of equipment	62.67

Suggestion to overcome constraints

Some suggestion to overcome constraints in adoption of crisis management practices given by the broiler poultry farmers are presented in Table 5. Major suggestions are availability of good quality chicks and price need to be lower, lower price of feed and equipment, government subsidy need to provide for the poultry farm, diseases resistance strain need to develop, regular vaccination of poultry need to carried out by government.

Table 5: Suggestion to overcome constraints in adoption of crisis management practices

Sr. No.	Constraints in adoption of crisis management practices	(%)
1	Availability of good quality chicks and price need to be lower	95.00
2	Lower price of feed and equipment	93.33
3	Government subsidy need to provide for the poultry farm	87.67
4	Diseases resistance strain need to develop	70.33
5	Regular vaccination of poultry need to carried out by government	100.00

CONCLUSION

From the study it is concluded that crisis management practices are of paramount significance for the success of poultry farm. Finance related crisis management practices were either followed or sometimes followed by the farmers. Similar case is with the crisis management related to high temperature and lower temperature, health care and housing and feed related crisis management practices. Relationship between education and size of family found highly significant because with education poultry farmers can know more about crisis management practices. Therefor more emphasis should be given to create more awareness on finance and health care related crisis management practices to extract maximum

economic return from their broiler poultry farm.

IMPLICATIONS

The findings of this study would facilitate in knowing awareness regarding various crisis management practices among the broiler poultry farmers. The study concluded that more emphasis should be given on finance, health care, housing and feed related crisis management practices to create more awareness among the poultry farmers. Extension functionaries should find the ways and means for creating awareness and adoption of above mentioned crisis management practices by the poultry farmers. Policy makers should plan and develop a policy on crisis management practices in broiler poultry farm by considering major issues such as high death rate during disease outbreak, shortage and high rate of labour, high rate of day-old chick, difficulty in getting bank loan and high cost of equipment etc.

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CONFLICT OF INTEREST

No conflict of interest among researchers.

REFERENCES

- Akanni, K. (2007) Effect of micro-finance on small scale poultry business in South Western Nigeria. *Emirates J. Food Agric.* 19(2):38-47.
- Ankuya, K. J. and Ashwar, P. B. (2014) Influence of socio-economic factors on adoption of poultry farming. *Gujarat Journal of Extension Education.* 25(1):33-34.
- Anusha V. V. S. S., S. R. Patel and Vinaya Kumar, H. M. (2023). Unlocking agricultural information networks: A social network analysis approach. *Gujarat Journal of Extension Education*, 36 (2): 104-111. <https://doi.org/10.56572/gjoeec.2023.36.2.0019>
- Census of India (2021) Provisional population totals: Census of India, 2021. Government of India. Available at: <https://censusindia.gov.in>
- Chapot, L., Hibbard, R., Ariyanto, K. B., Maulana, K. Y., Yusuf, H., Febriyani, W. and Faverjon, C. (2024) Needs and capabilities for improving poultry production and health management in Indonesia. *PLOS One* 19(8):e0308379.
- Goswami, R., Arya, D., Siddiqui, R., Bharadwaj, M. and Arora, N. (2024) Heat stress in broilers and effective mitigation strategies. *Just Agric.* 4(10):380-383.
- Ilyas Lahlouh, F. R., Elakkary, A. and Sefiani, N. (2020) Experimental implementation of a new multi-input multi-output fuzzy-PID controller in a poultry house system. *Heliyon* 6:2405-8440.
- Kumar, A., Sahu, S. P., Singh, S. K., Sinha, M., Das, S. K. and Anish Kumar (2018) Broiler management and feeding practices adopted by the farmers of Bihar. *Int. J. Curr. Microbiol. Appl. Sci.* 7:5132-5139.
- Lisdiono, P., Said, J., Yusoff, H. and Hermawan, A. A. (2022) Examining leadership capabilities, risk management practices and organizational resilience: The case of state-owned enterprises in Indonesia. *Sustainability* 14(10):6268.
- Murija, A. and Braha, K. (2021) Farm risk, resources and management tools - a literature review. *Soc. Stud.* 3(15):5-13.
- Murija, A., Maloku, S. and Vuniqui, D. (2023) Risk management in the intensive poultry industry in Kosovo. In: Proc. 2nd Int. Sci. Conf. "BRIDGE".
- Patel, J. B., Vinaya Kumar, H. M. and Saini, H. (2022) A tool to measure the self-working confidence to be successful poultry farmers. *Gujarat Journal of Extension Education.* 34(1):152-154.
- Paula, A., Etges, S., Grenon, V., Souza, J. D., José, F., Neto, K. and Felix, E. A. (2018) ERM for health care organizations: An economic enterprise risk management innovation program. *Value Health Reg. Issues* 17:102-108.
- Reddy, J. (2023) Poultry housing types equipment and construction. Available at: <https://www.agrifarming.in/poultry-housing-types-equipment-and-construction>
- Saeed, M., Abbas, G., Alagawany, M., Kamboh, A. A., Abd El-Hack, M. E., Khafaga, A. F. and Chao, S. (2019) Heat stress management in poultry farms: A comprehensive overview. *J. Therm. Biol.* 84:414-425.
- Thorat, G. N., Patel, D. C. and Wadhwani, K. N. (2019) Backyard poultry farming practices adopted by farmers in Dahod district. *Gujarat Journal of Extension Education.* Special Issue:86-89.

- Thorat, G. N., Vahora, S. G. and Ramjiyani, D. B. (2025) Correlates of knowledge of poultry entrepreneurs about poultry management practices. *Gujarat Journal of Extension Education*. 26(1):127-131.
- Thorat, G. N., Vahora, S. G. and Trivedi, M. M. (2016) Management efficiency of poultry owners. *Gujarat Journal of Extension Education*. 27(1):18-19.
- Vaidya, A. C. and Chauhan, N. B. (2012a) Constraints faced by poultry farmers in adoption of crisis management practices and solutions. *Gujarat Journal of Extension Education*. 23:7-70.
- Vaidya, A. C. and Chauhan, N. B. (2012b) Factors affecting level of crisis management practices adopted by poultry farmers. *Gujarat Journal of Extension Education*. 23:81-84.
- Vinaya Kumar H. M., Shivamurthy M. and Biradar G.S. (2016). A Scale to Measure climate-induced Crisis Management of Farmers in Coastal Karnataka (India). *Advances in Life Sciences*. 5(16): 6206-6212.

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