Scale development to measure the perceived extent of crisis in sheep farming

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Abstract
The present study scale was developed to measure the level of crisis perception of sheep farmers about sheep farming. Initially 70 items/statements on eight dimensions of crisis were selected to measure the crisis of sheep farmers. Based on 40 jury opinions the relevancy weightage score for each item was worked out. Relevancy weightage score of 0.70 and above were finally include in the study. A total of 25 items which fulfilled criteria were selected for study. Reliability test was done by using split-half method co-efficient of correlation was found to be 0.86 which was found to be significant at 0.01 level of probability indicating high internal consistency of the scale. Hence scale developed was highly reliable to measure the perceived extent of crisis in sheep farming.

Keywords: Scale, measure, perceived, crisis, sheep farming

Introduction
In India livestock acts as safeguard during the subsistence crisis (Kitalyi et al. 2005) [3] Sheep husbandry occupies a prominent place in the farming systems due to their ability to convert resources unusable by man, with limited land or water providing ‘year round employment’ and ‘sustainable income’ (Dinakar et al. 2019) [1]. Sheep farming enterprise has inherent qualities such as early maturity, ability to thrive even under harsh environment and, act as insurance during crop failure (Dixit et al. 1995) [2]. The success of any enterprise depends mainly on its efficient management in achieving higher production and productivity. However, the frequent occurrence of natural calamities such as cyclones, flood, drought and disease outbreaks etc., causes sudden disturbances in economic equilibrium of the enterprise. Sheep farms have experienced a structural crisis for last two decades (Rivas et al. 2019) [4]. Sheep enterprise is no exception to this and the sheep farmers often face severe crisis on successfully managing their enterprise due to several unforeseen factors. The scale was developed with utmost care in eight dimensions such as environmental, disease outbreaks, management factors, marketing, governmental, institutional, personal, managerial and marketing of crisis in sheep farming.

Items/statements collections
The content of scale is consisted of statement called items. Based on the exhaust review of literature, as well as consultation with experts, professional colleagues, subject matter specialist and extension functionaries’ items were collected. Initially 70 items/statements on eight dimensions of crisis were selected to measure the crisis of sheep farmers. Based on these items a schedule was developed.

Operationalization
It was defined as a perceived situation of concentrated period of disturbance caused by environmental and/or man made factors affecting sheep production and productivity and in turn the sheep farmers income, thereby stimulating action on the part of sheep farmers to overcome crisis situation.

Editing of items/statements
The 70 items/statements selected were sent to 60 experts/judges comprising of experts in the field of Animal Husbandry Extension and Veterinary Assistant Surgeons to indicate the relevancy of each item/statement on a four point continuum ranging from “most relevant”,
“least relevant” and “not relevant” with assigned weightages of 4, 3, 2 and 1 respectively. Out of 60 judges, 40 judges responded.

Result and Discussion

Item selection
In the present study, the relevancy weightage score for each item / statements was worked out. The 25 items / statement which possessed the relevancy weightage score of 0.70 and above were finally included for the study. The selected items/statements along with their relevancy weightage score are given in Table 1.

Scoring Pattern
The sheep farmers were requested to indicate their degree of perception on the selected items keeping in mind its occurrence in the last three years on a four point continuum of “strongly felt” “felt” “least felt” and “not felt” with respective scores of 4, 3, 2 and 1. The scores of each item were summed up to arrive at the total score which ranged from 25 to 100 for an individual respondent.

| S. No | Crisis statements                                                                 | Relevancy weightage score* |
|-------|-----------------------------------------------------------------------------------|----------------------------|
| 1     | Gastro-intestinal parasitism                                                      | 0.890                      |
| 2     | Exploitation by middlemen                                                         | 0.882                      |
| 3     | Occurrence of Enterotoxaemia                                                       | 0.875                      |
| 4     | Acute shortage of green fodder                                                    | 0.875                      |
| 5     | Occurrence of sheep pox                                                           | 0.859                      |
| 6     | High lamb mortality                                                               | 0.843                      |
| 7     | Liver fluke infestation                                                           | 0.843                      |
| 8     | Absence of organized marketing                                                    | 0.843                      |
| 9     | Occurrence of Bluetongue                                                          | 0.828                      |
| 10    | Non-availability of grazing land                                                   | 0.828                      |
| 11    | Prolonged period of drought                                                       | 0.781                      |
| 12    | Frequent attack of sheep flock by predators like stray dog, foxes, etc.           | 0.781                      |
| 13    | Occurrence of PPR                                                                 | 0.765                      |
| 14    | Tick infestation                                                                  | 0.765                      |
| 15    | Occurrence of Anthrax                                                             | 0.757                      |
| 16    | Heavy rain during monsoon                                                         | 0.750                      |
| 17    | Vaccination failure                                                               | 0.750                      |
| 18    | Indebtedness                                                                      | 0.742                      |
| 19    | High cost of concentrate feed                                                      | 0.718                      |
| 20    | Coccidial infection                                                               | 0.718                      |
| 21    | Proclamation of legislation/executive orders preventing grazing of sheep in forest land | 0.718                      |
| 22    | Extreme hotness/heatstroke                                                        | 0.710                      |
| 23    | Wound myiasis                                                                     | 0.710                      |
| 24    | Lack of formal crisis/disaster management institution nearby                      | 0.710                      |
| 25    | Occurrence of FMD                                                                 | 0.703                      |

Relevancy weightage score = (Actual score/Maximum possible score) x 100

Table 1: Relevancy weightage score

Reliability of the scale
The reliability of the crisis items was tested in the following way

Split-half method
In this study the split half method was employed to work out the reliability. In this method the scores for the odd and even numbered items / statements of the 20 pre-tested samples were correlated. The co-efficient of correlation was found to be 0.86 which was found to be significant at 0.01 level of probability indicating high internal consistency of the scale.

Validity of the Scale
The crisis items in the preliminary test pertaining to the crisis in sheep were collected from literatures. Apparently the scale possesses concurrent and face validity, as it involved rigorous approach in developing the scale.

Measurement of extent of crisis in sheep farming
It was arrived by ranking the 25 items/statements selected for the study based on the index of each item which was calculated as follows:

\[ \text{Crisis Index} = \frac{\text{Actual score for an item}}{\text{Maximum possible for that item}} \times 100 \]

Based on score obtained, the respondents were classified as high, medium and low level categories using mean and standard deviation.

Conclusion
The scale developed to assess the perceived extent of crisis in sheep will give an idea about sheep farmers crisis. Suitable measures can be taken to enhance management level of farmers. Institutions and Non Govermental Organization can organize various activities such training, sensitization programme will helpful to overcome crisis. Hence the developed scale was highly reliable and content validated for measuring the perceived extent of crisis.

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