

International Journal of Agriculture Sciences

ISSN: 0975-3710&E-ISSN: 0975-9107, Volume 8, Issue 51, 2016, pp.-2216-2220. Available online at http://www.bioinfopublication.org/jouarchive.php?opt=&jouid=BPJ0000217

Research Article

SCALE TO MEASURE THE UTILITY PERCEPTION OF CATTLE OWNERS

PISURE B.L.*, DESHMUKH P.R. AND AHIRE R.D.

Department of Extension Education, College of Agriculture, Vasantrao Naik Marathwada Agricultural University, Krishinagar, Parbhani, 431402, Maharashtra, India *Corresponding Author: Email-braj_agri@rediffmail.com

Received: July 25, 2016; Revised: July 30, 2016; Accepted: August 01, 2016; Published: October 27, 2016

Abstract- The term utility perception about cattle by the owners has been a problem for a researcher in agriculture. Keeping in view the subjectivity, there was a need to evolve a methodology, which would introduce much needed objectivity in the assessment of utility perception of cattle. In this content, it is worth mentioning that the study of utility perception about Deoni cattle and other Non-descriptive cattle by the cattle owners is a means to making animal husbandry more useful. Development of a scale to measure utility perception of cattle by the cattle owners was attempted by using the normalized rank approach recommended by Guilford, 1978. The scale developed was found reliable and valid. This utility perception scale was administrated to 240 cattle owners in Latur district of Maharashtra state. The results revealed that majority (83.00 %) of deoni cattle owners belonged to medium category of utility perception and more than two third (66.50 %) of non-descriptive cattle owners were having medium utility perception about cattle.

Keywords- Scale, Utility, Perception, Utility perception, Cattle, Cattle owners

Citation: Pisure B.L., et al., (2016) Scale to Measure the Utility Perception of Cattle Owners. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 8, Issue 51, pp.-2216-2220.

Copyright: Copyright©2016 Pisure B.L., et al., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Academic Editor / Reviewer: Dr Harshadkumar B. Patel, Sreenivas D

Introduction

In the rural agriculture, the most commonly employed farm power apart from manual labour invariably comes from cattle, which distinctly stand out from other farm animals. Efficient use of these animals in turn depends on their feeding, maintenance of their health and fitness and training them to adapt to different kinds of work has a definite say in successful agriculture. A good measure of efficiency of livestock enterprise in any country is its contribution to the country's national income. Livestock production and agriculture are intrinsically linked, each being dependent on the other, and both crucial for overall food security. Cattle are an important source of livelihood for the rural people particularly for women, landless labour and marginal farmers living in the interior areas, who do not have the other means of survivals. Cattles are a multifunctional animal and plays a significant role in the economy and nutrition of the people. Cattles are kept as a source of additional income and as an insurance against disaster in farming. In addition to this, cattles have religious and ritualistic importance in many societies. Cattle rearing is very good enterprise for small and marginal farmers, and landless agricultural labours [2]. Cattle provide milk, which has medicinal value recommended for patients suffering from peptic ulcers, jaundice, insomnia, etc. The term utility perception about cattle by the owners has been a problem for a researcher in agriculture. Keeping in view the subjectivity, there was a need to evolve a methodology, which would introduce much needed objectivity in the assessment of utility perception of cattle. In this content, it is worth mentioning that the study of utility perception about Deoni cattle and other Non-descriptive cattle by the cattle owners is a means to an end of making animal husbandry more useful. Considering the importance and utility of cattle in Indian culture and economy the present study was conducted with objective of developing a scale to measure the utility perception of cattle owners.

Materials and Methods

The study was conducted in twenty four villages in Latur district of Maharashtra state. Two hundred forty cattle owners were personally interviewed using the scale developed to measure their utility perception towards cattle. The collected data were scored and analyzed using frequency and percentage. Development of a scale to measure utility perception of cattle by the cattle owners was attempted by using the normalized rank approach recommended by Guilford, 1978 [1]. The advantage of this method was that it can be used with almost any number of variables and does not require a large number of judges for ranking the variables. Hence, this method was used in developing the present instrument. This procedure included collection of items, allocation of weight ages to them, standardization of the scale including the testing of its reliability and validity, norms of distribution of scores. The details of the steps actually followed in developing present instrument are discussed as under.

Item collection

Items related to utility perception of cattle were collected from the various sources. Items were selected from different literature, articles and publications. Researcher has contacted the experts in the field of extension education, veterinary extension and also experts in the department of animal husbandry and dairy science who were working in different agricultural universities all over India. Forty-eight statements were included in the scale to measure the utility perception of cattle by the cattle owners. It was necessary to list sub-items under each main item to help in administering the scale and to have objective assessment of the scale items. These forty eight statements were categorized into six subcategories *viz*, general utility, social utility, physical utility, economic utility, management utility and health utility of the cattle. There are 05 statements under general utility, 04 statements under social utility, 08 statements under physical utility and 14 statements under economic utility of the cattle. Whereas, 05 and 12 statements under the management utility and health utility, respectively.

International Journal of Agriculture Sciences

Selection of the judges

In order to judge the relevancy of the item and also to obtain the rank for the selected items, 80 judges were selected, who were expert in the field of extension education/sociology, veterinary extension and animal husbandry and dairy science working in different agricultural universities all over India.

Obtaining the judge's opinion

Judges were requested to select relevant items, which, they felt, contributed to the

utility perception of cattle. The judges were also requested to add the items, which they feel appropriate for its inclusion in the scale.

Relevancy of scale items

The responses received from the judges supported the relevancy of all the sixty eight items. Those items, which received more than 75 per cent relevancy were considered as 'relevant' for inclusion in the scale. Thus on the basis of their relevancy finally forty eight items were included in the final scale.

Table-1 Computed scale values of different items of the scale

A) Central utility 1. Cattle are laying a significant role in improving financial status of owners. 2. Cattle are laying a significant role in improving financial status of owners. 3. Cattle are laying a significant role in improving financial status of owners. 4. A cattle rearing is one of the important enterprise for small and marginal farmers and landless labours. 5. Cattle are laying a significant role in in untilition of cattle owners. 6. Cattle are step as a sinsurance against dissester farming. 7. Cattle are scapeled as drivine. 7. Cattle are accepted as drivine. 8. Feeding of cattle is part of daily rituals in the society. 9. Cattle are accepted as drivine. 9. Cattle are retardate as member of family in the society. 9. Cattle are treated as member of family in the society. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are witable for rearing at low or high temperature. 9. Cattle are witable for rearing at low or high temperature. 9. Cattle are witable for rearing at low or high temperature. 9. Cattle are witable for rearing at low or high temperature. 9. Cattle are witable in cattle. 9. Cattle are witable in cattle. 9. Cattle are witable in the cattle. 9. Cattle are witable in the cattle. 9. Cattle are witable in cattle. 9. Cattle are witable are witable are witable are witable and an are are all and the propose. 9. Cattle are rearing a source of additional and continuous income throughout the year. 11. All low cost investment owners can get higher income by rearing of cattle. 9. Cattle are rearing assource of additional and continuous income throughout the year. 11. All low cost measures are all the source of nitrogen, phosphorus and potash (NPK). 9. Selling of other		Table-1 Computed scale values of different items of the scale	Scale
A) General utility Cattle are multi-functional animals 0.3.75	Sr. No	Items/Statements in final scale	
2. Cattle are playing a significant role in improving financial status of owners. 3. 3.03 3. A cattle are playing a significant role in nutrition of cattle owners. 4. A cattle rearing is one of the important enterprise for small and marginal farmers and landless labours. 5. Cattle are kept as insurance against disaster faming. 6. Cattle are kept as insurance against disaster faming. 7. Cattle are kept as insurance against disaster faming. 7. Cattle are accepted as divine. 7. Cattle are accepted as divine. 8. Cattle are accepted as divine. 8. Cattle are treated as member of family in the society. 9. Cattle are attractive than other livestock animals. 9. Cattle are attractive than other livestock animals. 9. Cattle are attractive than other livestock animals. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle have high disease resistance power. 9. Cattle are used in seath in cattle. 9. Cattle are used in seath in cattle. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Covering seeds in dung before plaining helps to protect against pests and diseases. 9. Covering seeds in dung before plaining helps to protect against pests and diseases. 9. Covering seeds in dung before plaining helps to protect against pests and diseases. 9. Covering seeds in dung before plaining helps to protect against pests and diseases.	A)	General utility	74.40
3. Cattle are playing a significant role in nutrition of cattle owners. 4. A cattle rearing is one of the important enterprise for small and marginal farmers and landless labours. 5. Cattle are kept as insurance against disaster farming. 6. Tattle are very as insurance against disaster farming. 7. Cattle have religious importance in the society. 7. Cattle are accepted as divine. 8. Cattle are accepted as divine. 8. Cattle are accepted as divine. 9. Cattle are treated as member of family in the society. 9. Cattle are treated as member of family in the society. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle require less space for rearing. 9. Cattle are suitable for rearing at low or high temperature. 9. Cattle have high disease resistance power. 9. Cattle have high doring the cattle. 9. Cattle have high doring the cattle. 9. Cattle are used for both milk and other purpose. 9. At low cost investment owners can get higher income by rearing of cattle. 9. At low cost investment owners can get higher income by rearing of cattle. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. At low cost investment owners can get higher income by rearing of cattle. 9. Cattle are used for both milk and other purpose. 9. Cover miles as source of additional and continuous income throu	1.	Cattle are multi-functional animals.	03.75
A cattle reakept as insurance against disaster farming. Cattle are kept as insurance against disaster farming. Cattle have religious importance in the society. Cattle are accepted as divine. Cattle are treated as member of family in the society. Cattle are treated as member of family in the society. Cattle are treated as member of family in the society. Cattle are attractive than other livestock animals. Cattle are suitable for rearing, at low or high temperature. Cattle are suitable for rearing, at low or high temperature. Cattle are suitable for rearing, at low or high temperature. Cattle have high disease resistance power. Dippendia less in the cattle. Object have high disease resistance power. Cattle are less for high and high properties high disease. Cattle are used for both milk and other purpose. Cattle are used for both milk and other purpose. Cattle are used for both milk and other purpose. Cattle are used for both milk and other purpose. Cattle are used for both milk and other purpose. Cattle are used for both milk and other purpose. Cattle are used for both milk and believe planting helps to product against pests and diseases. Out will be used as inse	2.	Cattle are playing a significant role in improving financial status of owners.	03.50
Scale are kept as insurance against disaster farming. Cattle have religious importance in the society. Cattle have religious importance in the society. Cattle are accepted as divine. Reeding of cattle is part of daily rituals in the society. Cattle are treated as member of family in the society. Cattle are treated as member of family in the society. Cattle are attractive than other livestock animals. Cattle are autractive than other livestock animals. Cattle are suitable for rearing at low or high temperature. Cattle require less space for rearing. Cattle require less space for rearing. Cattle require less space for rearing. Cattle fave high disease resistance power. Age at first calving is earlier in cattle. Dry period is less in the cattle. Age of puberty is earlier in cattle. Dry period is less in the cattle. Pregnancy period is less in cattle. Cattle gets good price in the market. Cattle gets good price in the market. Cattle gets good price in the market. Cattle are used for both milk and other purpose. Lattle are used for both milk and other purpose. Lattle are used for both milk and other purpose. Lattle are used for both milk and other purpose. Milk and milk products from cattle have high demand and price in the market. Cow milk is used in preparing wholesome dishes and food products. Milk and milk products from cattle have high demand and price in the market. Cow milk is used in preparing wholesome dishes and food products. Cow dung slumy is used as manure for crops. Cow dung slumy is used as manure for crops. Cow dung slumy is used as manure for crops. Cow dung slumy is used as manure for crops. Cattle dung and univer are in shource of introgen, phosphorous and potash (NPK). Cow dung slumy is used as manure for crops. Cattle dung and univer are in the cattle shows and exhibition. Cattle dung and univer are in the cattle shows and exhibition. Cow dung slumy is used as manure for crops. Cattle dung and univer are the source of introgen, phosphorous and potash (NPK).	3.	Cattle are playing a significant role in nutrition of cattle owners.	03.03
B) Social utility 1. Cattle have religious importance in the society. 2. Cattle are accepted as divine. 3. Feeding of cattle is part of daily rituals in the society. 4. Cattle are treated as member of family in the society. 6. Physical utility 1. Cattle are attractive than other livestock animals. 2. Cattle are attractive than other livestock animals. 3. Cattle are attractive than other livestock animals. 4. Cattle have high disease resistance power. 4. Cattle have high disease resistance power. 5. Age at first activing is earlier in cattle. 6. Cattle have high disease resistance power. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle are resing as source of addinional and continuous income throughout the year. 11. At low cost investment owners can get higher income by rearing of cattle. 9. Cattle gets good price in the market. 9. Selling of cattle improves seasonal cash flow. 10. Cattle are rearing as source of addinional and continuous income throughout the year. 11. All comes in generated through cattle shows and exhibition. 10. Cattle are rearing in prepaning wholesome dishes and food products. 10. Selling of cattle improves seasonal cash flow. 10. Cattle dung and urine are inch source of nitrogen, phosphorous and potash (NPK). 10. Sall nicome is generated through cattle shows and exhibition. 10. Cattle dung and urine are inch source of nitrogen, phosphorous and potash (NPK). 10. Sall nicome is generated through cattle shows and exhibition. 10. Cattle dung and urine are inch source of nitrogen, phosphorous and potash (NPK). 10. Cattle dung and urine are inch source of nitrogen, phosphorous and potash (NPK). 10. Cattle dung and urine are inch source of ribrogen, phosphorous and potash (NPK). 10. Cattle dung and urine are inch source of ribro	4.	A cattle rearing is one of the important enterprise for small and marginal farmers and landless labours.	02.17
1. Cattle have religious importance in the society. 2. Cattle are accepted as divine. 3. Feeding of cattle is part of daily rituals in the society. 4. Cattle are treated as member of family in the society. 5. Cattle are attractive than other livestock animals. 6. Cattle are suitable for rearing at low or high temperature. 6. Cattle are suitable for rearing at low or high temperature. 6. Cattle are suitable for rearing at low or high temperature. 6. Cattle the equire less space for rearing. 6. Cattle the we high disease resistance power. 6. Age of puberty is earlier in cattle. 7. Age at first calving is earlier in cattle. 7. Dry period is less in the cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 9. Cattle ear used for both milk and other purpose. 9. Cattle ear used for both milk and other purpose. 9. Cattle ear earing as source of additional and continuous income throughout the year. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 9. Cattle are used for both milk and other purpose. 11.03 11.03 11.03 12. Cattle are used for both milk and other purpose. 11.04 12. Cattle are used for both milk and other purpose. 11.05 11.07 12. Milk and milk products from cattle have high demand and price in the market. 10. 7. Cow milk is used in preparing wholesome dishes and food products. 10. Cattle dung and unine are rich source of introgen, phosphorous and potash (NPK). 10. Cattle dung and unine are rich source of introgen, phosphorous and potash (NPK). 10. See See See See See See See See See Se	5.	Cattle are kept as insurance against disaster farming.	01.88
2. Cattle are accepted as divine. 02.95 3. Feeding of cattle is part of daily rituals in the society. 02.27 4. Cattle are treated as member of family in the society. 01.96 C) Physical utility 1. Cattle are attractive than other livestock animals. 05.70 2. Cattle are as utilable for rearing at low or high temperature. 06.33 3. Cattle require less space for rearing. 02.32 4. Cattle have high disease resistance power. 06.24 5. Age at first calving is earlier in cattle. 05.07 6. Age of puberty is earlier in cattle. 04.50 7. Dry period is less in the cattle. 04.23 8. Pregnancy period is less in cattle. 04.23 9. Pregnancy period is less in cattle. 03.15 D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 10.80 2. Cattle are used for both milk and other purpose. 11.03 3. Cattle are used for both milk and other purpose. 11.03 4. Cattle are rearing as source of additional and continuous income throughout the year. 11.41 5. Selling of cattle improves seasonal cash flow. 10.72 6. Milk and milk products from cattle theve high demand and price in the market. 07.45 7. Cow milk is used in preparing wholesome dishes and food products. 05.96 11. Cow dung siury is used as manure for crops. 04.08 10. Cattle dung and urine are inch source of ritrogen, phosphorous and potash (NPK). 05.98 11. Cow dung siury is used as manure for crops. 03.33 12. Cow dung also used in biogas plants. 03.33 13. Most cattle are easy to handle for anybody as compare to other livestock animals. 04.46 14. Management utility 1. Management utility 1. Management utility 1. Management used in season of the rivestock. 09.77 15. Read that the like has been derived in a milk of other livestock. 09.77 16. Cattle milk has been over the ready of the rivestock. 09.77 17. Cattle milk has been over the milk of other livestock. 09.77 18. Cattle milk has been over the milk of other livestock. 09.77 19. Cattle milk has been over the milk of other livestock. 09.77 19. Colostrums is very good source of vitamins and minerals. 06.5	B)	Social utility	
3. Feeding of cattle is part of daily rituals in the society. 4. Cattle are treated as member of family in the society. 6. Physical utility 1. Cattle are attractive than other livestock animals. 2. Cattle are suitable for rearing at low or high temperature. 3. Cattle require less space for rearing. 3. Cattle require less space for rearing. 4. Cattle have high disease resistance power. 6. Age at first calving is earlier in cattle. 6. Age of puberty is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 9. Cattle are used for both milk and other purpose. 1. At low cost investment owners can get higher income by rearing of cattle. 2. Cattle gets good price in the market. 9.9 44. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 11. All own cost investment owners can get higher income by rearing of cattle. 2. Cattle are rearing as source of additional and continuous income throughout the year. 11. All own cost involved for cattle have high demand and price in the market. 9. Selling of cattle improves seasonal cash flow. 10. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are inch source of nitrogen, phosphorous and potash (NPK). 13. Cov dung also used in hiogas plants. 14. Cov dung also used in hiogas plants. 15. Cov dung cakes used as sinecticide. 16. Management of cattle is seay than other milch animals. 17. Cattle require minimum concentrates during development period. 18. Management of cattle is seay than other milch animals. 19. Cattle require min	1.	Cattle have religious importance in the society.	03.19
4. Cattle are treated as member of family in the society. C) Physical utility 1. Cattle are attractive than other livestock animals. 2. Cattle are suitable for rearing at low or high temperature. 3. Cattle require less space for rearing. 4. Cattle have high disease resistance power. 5. Age at first catwing is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy pend is less in cattle. 9. 4.10 10. Dry period is less in cattle. 10. 423 8. Pregnancy pend is less in cattle. 10. 403 8. Pregnancy pend is less in cattle. 10. 410 10. At low cost investment owners can get higher income by rearing of cattle. 2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 11. All ow cost investment owners can get higher income by rearing of cattle. 2. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 11. Selling of cattle improves seasonal cash flow. 10. Cattle are rearing as source of additional and continuous income throughout the year. 11. All owners is generated through cattle shows and exhibition. 4. Cattle are rearing as source of additional and continuous income throughout the year. 11. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 9. 4. 6. Sall of the preparing wholesome dishes and food products. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 10. Cover dung slury is used as manure for crops. 10. Cover dung also used in biogas plants. 10. Cattle eril	2.	Cattle are accepted as divine.	02.95
C) Physical utility 1. Cattle are attractive than other livestock animals. 05.70 2. Cattle are suitable for rearing at low or high temperature. 06.33 3. Cattle require less space for rearing. 02.32 4. Cattle have high disease resistance power. 06.24 5. Age at first calving is earlier in cattle. 05.07 6. Age of puberty is earlier in cattle. 04.50 7. Dry period is less in the cattle. 04.23 8. Pregnancy period is less in cattle. 04.23 8. Cattle are used for both milk and other purpose. 10.80 2. Cattle age is good price in the market. 09.94 3. Cattle are rearing as source of additional and continuous income throughout the year. 11.41 5. Selling of cattle improves seasonal cash flow. 10.72 6. Milk and milk products from cattle have high demand and price in the market. 07.45 7. Cow milk is used in preparing wholesome dishes and food products. 05.96 8. Income is generated through cattle shows and exhibition. 04.63 9. Covering seeds in drug before planting helps to protect against pests and diseases. 04.08 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 05.98 11. Cow dung slury is used as manure for crops. 03.53 12. Cow dung also used in biogas plants. 03.23 12. Cow dung also used in biogas plants. 03.23 14. Cow urine is used as insecticide. 05.18 15. Management of cattle is easy than other milch animals. 04.46 16. Cattle require minimum concentrates during development period. 03.38 17. Management of cattle is easy than other milch animals. 04.46 18. Cattle milk is more nutritious than milk of other livestock. 09.77 19. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk is more nutritious than milk of other livestock. 09.77 3. Colostrums he pio in regulating cholesterol level. 09.34 4. Milk of cattle is peasy to describe miles of minerals. 06.51 5. Colostrums he pio in regulating cholest	3.	Feeding of cattle is part of daily rituals in the society.	02.27
1. Cattle are attractive than other livestock animals. 2. Cattle are suitable for rearing at low or high temperature. 3. Cattle require less space for rearing. 4. Cattle have high disease resistance power. 5. Age at first calving is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 9. Dry period is less in the cattle. 9. Dry period is less in the cattle. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle are used for both milk and other purpose. 11.03 12. Cattle are rearing as source of additional and continuous income throughout the year. 11.14 15. Selling of cattle improves seasonal cash flow. 10. Cattle are rearing as source of additional and continuous income throughout the year. 11. Selling of cattle improves seasonal cash flow. 10. Cattle are rearing as source of additional and continuous income throughout the year. 11. All low cost investment on cattle have high demand and price in the market. 10. 7. Cow milk is used in preparing wholesome dishes and food products. 10. Good ung cated in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung gates used a file. 12. Cow dung cakes used as full. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management of cattle is easy than other milch animals. 16. Management of cattle is easy than other milch animals. 17. Cattle milk has better digestibility than milk of other livestock animals. 18. Management of cattle is easy than other milch animals. 19. Cattle milk has better digestibility than milk of other livestock. 20. Cattle milk has better digestibility than milk of other livestock. 21. Cattle milk has better digestibility than milk of other livestock. 22. Cattle milk has better digestibility than milk of other livestock. 23. Cattle milk she high readcrinar	4.	Cattle are treated as member of family in the society.	01.96
2. Cattle are suitable for rearing at low or high temperature. 3. Cattle require less space for rearing. 4. Cattle have high disease resistance power. 5. Age at first calving is earlier in cattle. 6. Age of puberly is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in the cattle. 9. Dry period is less in the cattle. 9. Dry period is less in the cattle. 10. Dry period is less in cattle. 11. At low cost investment owners can get higher income by rearing of cattle. 2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are used for both milk and other purpose. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 9. Outing a durine are rich source of nitrogen, phosphorous and potash (NPK). 9. Selling of unine are rich source of nitrogen, phosphorous and potash (NPK). 9. Selling of unine are rich source of nitrogen, phosphorous and potash (NPK). 9. Selling of unine are rich source of nitrogen, phosphorous and potash (NPK). 9. Selling distury is used as manure for crops. 10. Cow dung also used in biogas plants. 10. Cow dung also used in biogas plants. 11. Cow dung also used in biogas plants. 12. Cow dung also used in biogas plants. 13. Amangement utility 14. Management utility 15. Management utility 16. Management utility 17. Cattle entile is easy than other milch animals. 18. Acttle entile imminimum concentrates during development period. 18. Most cattle allow any body to milk. 19. Cattle milk is sell medicinal value and will be used as precaution and control over many diseases. 19. Most cattle allow any body to milk. 19. Cattle milk is high med	C)	Physical utility	
3. Cattle require less space for rearing. 4. Cattle have high disease resistance power. 5. Age at first calving is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 90.215 8. Pregnancy period is less in cattle. 91. Dry period is less in the cattle. 92. Cattle gets good price in the market. 93. Cattle are used for both milk and other purpose. 93. Cattle are used for both milk and other purpose. 94. Cattle are rearing as source of additional and continuous income throughout the year. 95. Selling of cattle improves seasonal cash flow. 96. Milk and milk products from cattle have high demand and price in the market. 97. Com milk is used in preparing wholesome dishes and food products. 98. Income is generated through cattle shows and exhibition. 99. Covering seeds in dung before planting helps to protect against pests and diseases. 90. 40.8 100. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 99. Cow dung alurny is used as manure for crops. 100. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 101. Cow dung alurny is used as manure for crops. 102. Cow dung cakes used as fuel. 103. Cow dung cakes used as fuel. 104. Cow urine is used as insecticide. 105. Cow dung also used in biogas plants. 106. Cow dung also used in biogas plants. 107. Cow dung also used in biogas plants. 108. Cattle enumer is used as insecticide. 109. Self management utility 11. Management utility 12. Cattle require minimum concentrates during development period. 109. Self management utility 11. Cattle milk has better digestibility than milk of other livestock animals. 109. Cattle milk has better digestibility than milk of other livestock. 109. Or of the milk has better digestibility than milk of other livestock. 109. Cattle milk is more nutritious than milk of other livestock. 109. Cattle milk is most useful for growth and development of children. 109. Colostrums is a highly concentrated mixture of pr	1.	Cattle are attractive than other livestock animals.	05.70
4. Cattle have high disease resistance power. 5. Age at first calving is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Prepnancy period is less in cattle. 9. 03.15 D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle are used for both milk and other purpose. 11.03 1. Cattle are used for both milk and other purpose. 11.03 1. Cattle are rearing as source of additional and continuous income throughout the year. 11.03 1. Cattle are rearing as source of additional and continuous income throughout the year. 11.03 15. Selling of cattle improves seasonal cash flow. 10.72 16. Milk and milk products from cattle have high demand and price in the market. 10.745 17. Cow milk is used in preparing wholesome dishes and food products. 19. Good and income is generated through cattle shows and ord whibition. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 10. Cow dung slurny is used as manure for crops. 10. Cottle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurny is used as manure for crops. 12. Cow dung also used in biogas plants. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 15. Management of cattle is easy than other milch animals. 16. Management of cattle is easy than other milch animals. 17. Cattle require minimum concentrates during development period. 18. Management of cattle is easy than other milch animals. 19. Cattle require minimum concentrates during development period. 20. Cattle require minimum concentrates during development period. 21. Cattle milk is more nutritious than milk of other livestock. 22. Cattle milk is more nutritious than milk of other livestock. 23. Cattle milk is more nutritious than milk of other livestock. 24. Milk of cattle is good source of vitamins and minerals. 25. Cattle	2.	Cattle are suitable for rearing at low or high temperature.	06.33
4. Cattle have high disease resistance power. 5. Age at first calving is earlier in cattle. 6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Prepnancy period is less in cattle. 9. 03.15 D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 9. Cattle gets good price in the market. 9. Cattle gets good price in the market. 9. Cattle are used for both milk and other purpose. 11.03 1. Cattle are used for both milk and other purpose. 11.03 1. Cattle are rearing as source of additional and continuous income throughout the year. 11.03 1. Cattle are rearing as source of additional and continuous income throughout the year. 11.03 15. Selling of cattle improves seasonal cash flow. 10.72 16. Milk and milk products from cattle have high demand and price in the market. 10.745 17. Cow milk is used in preparing wholesome dishes and food products. 19. Good and income is generated through cattle shows and ord whibition. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 10. Cow dung slurny is used as manure for crops. 10. Cottle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurny is used as manure for crops. 12. Cow dung also used in biogas plants. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 15. Management of cattle is easy than other milch animals. 16. Management of cattle is easy than other milch animals. 17. Cattle require minimum concentrates during development period. 18. Management of cattle is easy than other milch animals. 19. Cattle require minimum concentrates during development period. 20. Cattle require minimum concentrates during development period. 21. Cattle milk is more nutritious than milk of other livestock. 22. Cattle milk is more nutritious than milk of other livestock. 23. Cattle milk is more nutritious than milk of other livestock. 24. Milk of cattle is good source of vitamins and minerals. 25. Cattle	3.	Cattle require less space for rearing.	02.32
6. Age of puberty is earlier in cattle. 7. Dry period is less in the cattle. 8. Pregnancy period is less in the cattle. 90.3.15 D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 90.94 2. Cattle gets good price in the market. 90.94 3. Cattle are used for both milk and other purpose. 11.03 4. Cattle are rearing as source of additional and continuous income throughout the year. 11.41 5. Selling of cattle improves seasonal cash flow. 10.72 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 94.08 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 95.98 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 2. Cattle milk has better digestibility than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk is more nutritious than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk so more nutritious than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk so most useful for growth and development of children. 6. C		, ,	
7. Dry period is less in the cattle. 8. Pregnancy period is less in cattle. 9. Q3.15 10. Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 10.80 2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 40.08 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 5. Selling of cattle ung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung also used in biogas plants. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 10. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk has beigh medicinal value and will be used as precaution and control over many diseases. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Cattle milk pee is rich source of vitamins and minerals. 6. Colostrums help in regulating cholesterol level. 7. Colostrums help in regul	5.	Age at first calving is earlier in cattle.	05.07
8. Pregnancy period is less in cattle. D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 10. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is more nutritious than milk of other livestock. 6. Cattle milk pee is rich source of vitamins and minerals. 6. Cattle milk pee is rich source of vitamins and minerals. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums halp in regulating cholesterol level. 9. Colostrums halp in regulating cholesterol level	6.	Age of puberty is earlier in cattle.	04.50
D) Economic utility 1. At low cost investment owners can get higher income by rearing of cattle. 2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 11.41 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. E) Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 15. Need not to take more management practices for cattle rearing. 16. Cattle milk is more nutritious than milk of other livestock. 17. Cattle milk has better digestibility than milk of other livestock. 18. Cattle milk has better digestibility than milk of other livestock. 19. Cattle milk has better digestibility than milk of other livestock. 20. Cattle milk is most useful for growth and development of children. 3. Colostrums is a highly concentrated mixture of proteins and minerals. 3. Colostrums is a very good source of vitamins and minerals. 3. Colostrums is a very good source of vitamins and minerals. 3. Colostrums is a very good source of vitamins and minerals. 3. Colostrums is a very good source of vitamins and minerals. 3. Colostrums has antiseptic properties. 3. Cattle urink has antiseptic properties.	7.	Dry period is less in the cattle.	04.23
1. At low cost investment owners can get higher income by rearing of cattle. 10.80 2. Cattle gets good price in the market. 99.94 3. Cattle are used for both milk and other purpose. 11.03 4. Cattle are rearing as source of additional and continuous income throughout the year. 11.41 5. Selling of cattle improves seasonal cash flow. 10.72 6. Milk and milk products from cattle have high demand and price in the market. 07.45 7. Cow milk is used in preparing wholesome dishes and food products. 05.96 8. Income is generated through cattle shows and exhibition. 04.63 9. Covering seeds in dung before planting helps to protect against pests and diseases. 04.08 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 05.98 11. Cow dung slurry is used as manure for crops. 03.53 12. Cow dung cakes used as fuel. 04.06 13. Cow dung also used in biogas plants. 03.23 14. Cow urine is used as insecticide. 05.18 15. Management utility 1. Management utility 1. Management of cattle is easy than other milch animals. 04.46 13. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 14. Most cattle allow any body to milk. 02.26 15. Need not to take more management practices for cattle rearing. 01.53 16. Cattle milk is more nutritious than milk of other livestock. 09.77 17. Cattle milk is more nutritious than milk of other livestock. 09.77 18. Cattle milk has better digestibility than milk of other livestock. 09.77 19. Cattle milk is most useful for growth and development of children. 09.67 19. Colostrums is a highly concentrated mixture of proteins and minerals. 06.38 10. Colostrums is a very good source of vitamins and minerals. 06.51 10. Colostrums hap in regulating cholesterol level. 03.93 10. Colostrums hap in regulating cholesterol level. 03.93 10. Colostrums hap antiseptic properties. 03.82	8.	Pregnancy period is less in cattle.	03.15
2. Cattle gets good price in the market. 3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 4. Most cattle milk is more nutritious than milk of other livestock. 5. Need not to take more management practices for cattle rearing. 4. Milk of cattle is good source of vitamins and minerals. 6. Cattle milk is most useful for growth and development of children. 6. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Cattle milk species inch source of vitamins and minerals. 6. Cattle milk species inch source of vitamins and minerals. 6. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Colostrums is a prey good source of vitamina and minerals. 6. Colostrums is very good source of vitamina and minerals. 6. Colostrums help in regulating cholesterol level. 7. Colostrums help in regulating cholesterol level.	D)	Economic utility	
3. Cattle are used for both milk and other purpose. 4. Cattle are rearing as source of additional and continuous income throughout the year. 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 94.08 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 95.98 11. Cow dung slurry is used as manure for crops. 93.53 12. Cow dung cakes used as fuel. 94.06 13. Cow dung also used in biogas plants. 94.06 13. Cow dung also used in biogas plants. 95.18 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 96. Cattle require minimum concentrates during development period. 97. Cattle require minimum concentrates during development period. 98. Most cattle are easy to handle for anybody as compare to other livestock animals. 99. Cattle milk is more nutritious than milk of other livestock. 99. Need not to take more management practices for cattle rearing. 90.153 14. Cattle milk is more nutritious than milk of other livestock. 90.77 15. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 90.934 16. Cattle milk is most useful for growth and development of children. 90.66 17. Cattle milk is most useful for growth and development of children. 90.67 18. Colostrums is a highly concentrated mixture of proteins and minerals. 90.63 19. Colostrums help in regulating cholesterol level. 91. Colostrums help in regulating cholesterol level. 92. Colostrums help in regulating cholesterol level. 93.39 10. Colostrums help in regulating cholesterol level.	1.	At low cost investment owners can get higher income by rearing of cattle.	
4. Cattle are rearing as source of additional and continuous income throughout the year. 5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung slurry is used as manure for crops. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 16. Cattle require minimum concentrates during development period. 17. Most cattle are easy to handle for anybody as compare to other livestock animals. 18. Most cattle allow any body to milk. 19. Need not to take more management practices for cattle rearing. 19. Need not to take more management practices for cattle rearing. 19. Cattle milk is more nutritious than milk of other livestock. 20. Cattle milk has better digestibility than milk of other livestock. 21. Cattle milk has better digestibility than milk of other livestock. 22. Cattle milk has botter of vitamins and minerals. 23. Cattle milk is most useful for growth and development of children. 24. Milk of cattle is good source of vitamins and minerals. 25. Cattle milk ghee is rich source of vitamins and minerals. 26. Cattle milk ghee is rich source of vitamins and minerals. 27. Colostrums is a highly concentrated mixture of proteins and minerals. 28. Colostrums help in regulating cholesterol level. 29. Colostrums may overcome the emerging problems relating to respiratory disorders. 20. 30. 30. 30. 30. 30. 30. 30. 30. 30. 3	2.	Cattle gets good price in the market.	
5. Selling of cattle improves seasonal cash flow. 6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Cattle milk sim most useful for growth and development of children. 6. Cattle milk spee is rich source of vitamins and minerals. 6. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Colostrums and voercome the emerging problems relating to respiratory disorders. 6. Cattle unich has antiseptic properties.	3.		11.03
6. Milk and milk products from cattle have high demand and price in the market. 7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 16. Management of cattle is easy than other milch animals. 17. Cattle require minimum concentrates during development period. 18. Most cattle are easy to handle for anybody as compare to other livestock animals. 19. Mealth utility 10. Cattle milk is more nutritious than milk of other livestock. 19. Cattle milk has better digestibility than milk of other livestock. 20. Cattle milk has better digestibility than milk of other livestock. 21. Cattle milk has better digestibility than milk of other livestock. 22. Cattle milk has better digestibility than milk of other livestock. 23. Cattle milk has better digestibility than milk of other livestock. 24. Milk of cattle is good source of vitamins and minerals. 25. Cattle milk is most useful for growth and development of children. 26. Cattle milk is most useful for growth and development of children. 27. Colostrums is a highly concentrated mixture of proteins and minerals. 28. Colostrums is a highly concentrated mixture of proteins and minerals. 28. Colostrums help in regulating cholesterol level. 29. Colostrums has antiseptic properties. 20. Cattle urine has antiseptic properties. 20. Cattle urine has antiseptic properties.			
7. Cow milk is used in preparing wholesome dishes and food products. 8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk has better digestibility and development of children. 6. Cattle milk sim most useful for growth and development of children. 6. Cattle milk sie most useful for growth and development of children. 6. Cattle milk see is rich source of vitamins and minerals. 6. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Colostrums help in regulating cholesterol level. 6. Colostrums has antiseptic properties. 6. Cattle urine has antiseptic properties. 6. Cattle urine has antiseptic properties.		· · · · · · · · · · · · · · · · · · ·	
8. Income is generated through cattle shows and exhibition. 9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung also used in biogas plants. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 2. Cattle require minimum concentrates for cattle rearing. 3. Most cattle allow any body to milk. 2. Need not to take more management practices for cattle rearing. 3. Need not to take more management practices for cattle rearing. 4. Most cattle milk is more nutritious than milk of other livestock. 5. Need not to take more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 4. Milk of cattle is good source of vitamins and minerals. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is most useful for growth and development of children. 6. Cattle milk ghee is rich source of vitamins and minerals. 6. Colostrums is a highly concentrated mixture of proteins and minerals. 6. Colostrums help in regulating cholesterol level. 7. Colostrums help in regulating cholesterol level. 7. Colostrums may overcome the emerging problems relating to respiratory disorders. 7. Cattle urine has antiseptic properties. 7. Cattle urine has antiseptic properties.	-	· · · · · · · · · · · · · · · · · · ·	
9. Covering seeds in dung before planting helps to protect against pests and diseases. 10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). 11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 2. Most cattle allow any body to milk. 2. Need not to take more management practices for cattle rearing. 5. Need not to take more management practices for cattle rearing. 1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has better digestibility than milk of other livestock. 4. Milk of cattle is good source of vitamins and minerals. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is most useful for growth and development of children. 6. Cattle milk ghee is rich source of vitamins and minerals. 6. Cattle milk ghee is rich source of vitamins and minerals. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums help in regulating cholesterol level. 9. Colostrums may overcome the emerging problems relating to respiratory disorders. 9. 3. 2. 03.82			
10. Cattle dung and urine are rich source of nitrogen, phosphorous and potash (NPK). Cow dung slurry is used as manure for crops. Cow dung cakes used as fuel. Cow dung also used in biogas plants. Cow dung also used in biogas plants. Cow urine is used as insecticide. E) Management utility 1. Management of cattle is easy than other milch animals. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.26 Most cattle allow any body to milk. Need not to take more management practices for cattle rearing. Thealth utility Cattle milk is more nutritious than milk of other livestock. Cattle milk has better digestibility than milk of other livestock. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. A Milk of cattle is good source of vitamins and minerals. Cattle milk is most useful for growth and development of children. Cattle milk is most useful for growth and development of children. Cattle milk piec is rich source of vitamins and minerals. Cattle milk piec is rich source of vitamins and minerals. Colostrums is a highly concentrated mixture of proteins and minerals. Colostrums help in regulating cholesterol level. Colostrums may overcome the emerging problems relating to respiratory disorders. Cattle urine has antiseptic properties.	-	· · ·	
11. Cow dung slurry is used as manure for crops. 12. Cow dung cakes used as fuel. 13. Cow dung also used in biogas plants. 14. Cow urine is used as insecticide. 15. Management utility 1. Management of cattle is easy than other milch animals. 2. Cattle require minimum concentrates during development period. 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 6. Cattle milk is more nutritious than milk of other livestock. 7. Cattle milk has bigh medicinal value and will be used as precaution and control over many diseases. 10. Cattle milk is most useful for growth and development of children. 2. Cattle milk is most useful for growth and development of children. 3. Cattle milk spee is rich source of vitamins and minerals. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk spee is rich source of vitamins and minerals. 6. Cattle milk spee is rich source of vitamins and minerals. 6. Colostrums is very good source of vitamin- A. 6. Colostrums is very good source of vitamin- A. 6. Colostrums may overcome the emerging problems relating to respiratory disorders. 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties.	-		
12. Cow dung cakes used as fuel. 04.06 13. Cow dung also used in biogas plants. 03.23 14. Cow urine is used as insecticide. 05.18 E) Management utility 1. Management of cattle is easy than other milch animals. 04.46 2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ighee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82	-		
13. Cow dung also used in biogas plants. 03.23 14. Cow urine is used as insecticide. 05.18 E) Management utility 1. Management of cattle is easy than other milch animals. 04.46 2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82			
14. Cow urine is used as insecticide. 05.18 E) Management utility 1. Management of cattle is easy than other milch animals. 04.46 2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82		· · · · · · · · · · · · · · · · · · ·	
E) Management utility 1. Management of cattle is easy than other milch animals. 04.46 2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82	-		
1. Management of cattle is easy than other milch animals. 04.46 2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82			05.18
2. Cattle require minimum concentrates during development period. 03.38 3. Most cattle are easy to handle for anybody as compare to other livestock animals. 02.85 4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle uri	,		04.40
3. Most cattle are easy to handle for anybody as compare to other livestock animals. 4. Most cattle allow any body to milk. 5. Need not to take more management practices for cattle rearing. 6. Cattle milk is more nutritious than milk of other livestock. 7. Cattle milk has better digestibility than milk of other livestock. 8. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 9. Cattle milk is most useful for growth and development of children. 9. Cattle milk ghee is rich source of vitamins and minerals. 9. Cattle milk ghee is rich source of vitamins and minerals. 9. Colostrums is a highly concentrated mixture of proteins and minerals. 9. Colostrums is very good source of vitamin- A. 9. Colostrums help in regulating cholesterol level. 9. Colostrums may overcome the emerging problems relating to respiratory disorders. 9. Cattle urine has antiseptic properties. 9. O3.82			
4. Most cattle allow any body to milk. 02.26 5. Need not to take more management practices for cattle rearing. 01.53 F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 09.77 2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82		,	
5. Need not to take more management practices for cattle rearing. Health utility 1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is most useful for growth and development of children. 6. Cattle milk ghee is rich source of vitamins and minerals. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums is very good source of vitamin- A. 9. Colostrums help in regulating cholesterol level. 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties. 10. Oalstrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties.			
F) Health utility 1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is most useful for growth and development of children. 6. Cattle milk ghee is rich source of vitamins and minerals. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums is very good source of vitamin- A. 9. Colostrums help in regulating cholesterol level. 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties. 10. Oalstrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties.			
1. Cattle milk is more nutritious than milk of other livestock. 2. Cattle milk has better digestibility than milk of other livestock. 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 4. Milk of cattle is good source of vitamins and minerals. 5. Cattle milk is most useful for growth and development of children. 6. Cattle milk ghee is rich source of vitamins and minerals. 7. Colostrums is a highly concentrated mixture of proteins and minerals. 8. Colostrums is very good source of vitamin- A. 9. Colostrums help in regulating cholesterol level. 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 10. Cattle urine has antiseptic properties. 10. O3.82			01.00
2. Cattle milk has better digestibility than milk of other livestock. 08.63 3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82		•	09.77
3. Cattle milk has high medicinal value and will be used as precaution and control over many diseases. 07.70 4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82			
4. Milk of cattle is good source of vitamins and minerals. 09.34 5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82			
5. Cattle milk is most useful for growth and development of children. 09.67 6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82			
6. Cattle milk ghee is rich source of vitamins and minerals. 06.38 7. Colostrums is a highly concentrated mixture of proteins and minerals. 06.51 8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82	5.		
8. Colostrums is very good source of vitamin- A. 05.07 9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82	6.	· · · · · · · · · · · · · · · · · · ·	06.38
9. Colostrums help in regulating cholesterol level. 03.93 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 03.44 11. Cattle urine has antiseptic properties. 03.82	7.	Colostrums is a highly concentrated mixture of proteins and minerals.	06.51
 10. Colostrums may overcome the emerging problems relating to respiratory disorders. 11. Cattle urine has antiseptic properties. 03.44 03.82 		Colostrums is very good source of vitamin- A.	
11. Cattle urine has antiseptic properties. 03.82			
1 1 1	-		
12. Being part of farming, food and medicine cattle also contribute to the health of the environment. 03.54			
	12.	Being part of farming, food and medicine cattle also contribute to the health of the environment.	03.54

Obtaining the scale value for the items

Normalized rank approach recommended by Guilford, 1978 [1], was used and scale value for each main item was worked out. The advantage of this method is that it can be used with almost any number of observers. Similar methodology was being adopted by Bawajir and Nandapurkar, 1984 [3] while developing the scale to measure the 'Socioeconomic Status' of the farmer, Chole, 1986 [4] for constructing 'Development Opportunity' scale, Tayade, 2006 [5] while developing the scale to measure the 'Empowerment of Rural Women', Lad, 2014 [6] for developing the scale to measure the 'Utility Perception of Mass Media' by the farm women and Sidam, 2015 [7] for developing the scale to measure the 'Disabilities' of Tribal People in Their Socio-economic Development'. The question of giving weight ages to various main items was considered on the basis of mean value. In many scales, arbitrary weight ages are given which is not scientific. Therefore, in obtaining the scale values for the main items following procedure was followed. The judges were asked to rank the items under each sub category of utility of cattle. The reverse weight ages were given i.e. first rank was given to the highest score and last rank was given to the lowest score. The scale values were worked out by using the following formula.

$$AM = \frac{\sum Wi \times Xi}{\sum Wi}$$

Where,

AM = Arithmetic mean Wi = Weight age Xi = Value of the variate

Reliability of the scale

In order to judge the reliability of the scale, test-retest reliability test was used. These final statements then again retested from the judges for their reliability and rank for including in the final statement of scale. After their judgments, the statements were finalized and included in the final scale, which was then applied to the cattle rearers for measurement of their utility perception about cattle. Test-retest reliability of the scale was calculated on the basis of the responses of sample of 40 cattle owners who were not included in the final sample. The scale was administered twice to these respondents. The second administration was done approximately three weeks after the first one. Pearson's product moment coefficient of correlation was used for the two sets of scores in order to obtain the test-retest reliability coefficient. The reliability coefficient obtained (0.362) was quite high, indicating that the developed scale was reliable. The coefficient of correlation was also statistically highly significant at 1 per cent level. This finding is in line with the findings quoted by Bawajir and Nandapurkar, 1984 [3], Chole, 1986 [4] and Tayade, 2006 [5], Lad, 2014 [6] and Sidam, 2015 [7].

Validity

The content validity of the scale was established in two ways, firstly the various main and sub items for inclusion in the scale were based on extensive literature review from Indian and foreign studies. Secondly, the opinion of the panel of 61 judges who were expert in the field of extension education / veterinary extension / animal husbandry and dairy science / administration and development was obtained to find whether the items suggested were relevant for inclusion in the scale

Norms of distribution of scores

In the present study, the following norms of distribution of scores were worked out.

I) Frequency distribution II) Measures of central tendency
For this purpose, the data obtained from two hundred forty cattle owners were considered.

I) Frequency distribution

The procedure recommended by Garrett, 1967 [8] was used to tabulate the frequency distribution and also to work out other graphical presentation. The data regarding utility perception of cattle scale was grouped into eight classes with class interval of 5 units. The frequency distribution has been given in [Table-2].

Table-2 Frequency distribution of UPI of 240 respondents

Sr. No.	Class Interval	Mid Point	Frequency	Smoothed frequency
1.	60.5 - 65.5	63	05	08.33
2.	65.5 – 70.5	68	20	23.66
3.	70.5 – 75.5	73	46	43.00
4.	75.5 – 80.5	78	63	54.66
5.	80.5 - 85.5	83	55	49.00
6.	85.5 – 90.5	88	29	33.00
7.	90.5 – 95.5	93	15	17.00
8.	95.5 – 100.5	98	07	07.33

Graphical presentation of the frequency distribution

The graphical presentation of the frequency distribution helps to translate numerical facts into more concrete and understandable form. The data in [Table-2] have been presented in histogram [Fig-1] shows the histogram based on observed and smoothed frequency in column number 4 and 5 of [Table-2]. Further, theoretical normal curve superimposed on smoothed frequencies asymmetrically and closed resembled to normal probability curve. This indicates that the scores of two hundred forty respondents were normally distributed.



Fig-1 Histogram of observed and smoothed frequencies with normal curve superimposed on smoothed frequency

Smoothed frequency

In smoothing, a series of 'moving' or 'running' averages were taken from which new adjusted frequencies were determined. This method is illustrated to find an adjusted or 'smoothed' frequencies, we add the frequency on the given interval and the frequencies on the two adjacent intervals (the interval just below and the interval just above) and divide the sum by 3.

Cumulative percentage curve and 'ogive'

Cumulative percentage curve is another graphical method of representing frequency distribution. To compute cumulative percentage, cumulative frequencies were required to be found out. [Table-3] indicates necessary conversion of cumulative frequencies into percentage of the total number of respondents (N). The cumulative percentage curve was later on drawn with interval limits laid on the x-axis and cumulative percentage on y-axis. Data are presented in [Fig-2]. The figure drawn was quite regular, thereby indicating that scores obtained by the instrument developed followed normal distribution.

Table-3 Percentage cumulative frequency of UPI of 240 respondents

Sr. No.	Class Interval	Upper limit	Frequency	Cumulative frequency	Cumulative per cent
1.	60.5 - 65.5	65.5	05	05	02.08
2.	65.5 – 70.5	70.5	20	25	10.42
3.	70.5 – 75.5	75.5	46	71	29.58
4.	75.5 – 80.5	80.5	63	134	55.83
5.	80.5 - 85.5	85.5	55	189	78.75
6.	85.5 – 90.5	90.5	29	218	90.83
7.	90.5 – 95.5	95.5	15	233	97.08
8.	95.5 – 100.5	100.5	07	240	100.00

II) Measures of central tendency

The different values of central tendency as indicated in the chapter 'methodology' were worked out for 240 respondents were as follows.

Mean : 79.97 Median : 79.17 Mode : 78.13

These values being very close, indicating that distribution followed normal curve.



Fig-2 Cumulative percentage curve (ogive) of utility perception index of 240 respondents

Results Overall utility perception

Table-4 Distribution of respondents according to overall utility perception

Sr. No.	Category	Deoni Cattle owners (n=120)			Non-Descriptive Cattle owners (n=120)		
		Score	F	%	Score	F	%
1.	Low	Up to 71	19	15.84	Up to 69	23	19.17
2.	Medium	72 to 84	82	68.32	70 to 81	80	66.67
3.	High	85 & above	19	15.84	82 &above	17	14.17
		Total	120	100	Total	120	100
		Mean	78.35		78.35 Mean		5.78
		SD	07	7.00	SD	00	6.64

The data presented in the [Table-4] revealed that, nearly two third (68.32 %) of Deoni cattle owners had medium level of perception regarding overall utility of cattle, while equal percentage i.e. 15.84 of them were having high and low level of perception about overall utility perception of cattle. In relation to non-descriptive cattle owners the data given in [Table-4] shows that, two third (66.67 %) respondents were having medium level of level of perception about overall utility perception of cattle whereas, 19.17 per cent had low level and 14.17 per cent had high level of perception regarding overall utility of cattle.

Utility perception index

Utility perception index of all the respondents was calculated and presented in the [Table-5]. It is apparent from [Table-5] that, majority (83.00 %) of deoni cattle owners belonged to medium category of utility perception, while 17.50 per cent and 16.00 per cent of them were from low and high utility perception of cattle, respectively.

 Table-5
 Distribution of respondents according to utility perception index

Sr. No.	Category	Deoni Cattle owners (n=120)			Non-Descriptive Cattle owners (n=120)		
		Score	F	%	Score	F	%
1.	Low	Up to 74.32	21	17.50	Up to 72.01	25	20.83
2.	Medium	74.33 to 88.90	83	83.00	72.02 to 85.84	81	67.50
3.	High	88.91 & above	16	16.00	85.85 & above	14	11.67
		Total	120	100	Total	120	100
			8′	1.61	Mean	78	8.93
		SD	07.29		SD	06.92	

It is also noticed from [Table-5] that more than two third (66.50 %) of non descriptive cattle owners were having medium utility perception followed by 20.83 per cent of them had low and 11.67 per cent of them had high utility perception of cattle.

Conclusions

In the present study, the scale to measure the utility perception of cattle by the owners was constructed. For the construction of scale, sixty eight items pertaining to utility perception of cattle were collected through review of literature and discussion with academic staff at various levels. These items/statements were sent to eighty judges, the academic and administrative extension personnel, veterinary extension personnel and experts from animal husbandry and dairy science working in various universities and institutions in India. The judges were requested to indicate whether each of the main items sent to them was relevant and suitable for inclusion in scale. Sixty one judges responded out of eighty. The responses received from the judges supported the relevancy of all the sixty eight items. Those items, which received more than 75 per cent relevancy, were considered as relevant for inclusion in the scale. Thus on the basis of their relevancy, finally forty eight items were included in the final scale. The scale values of finally selected items were worked out by using the Normalized Rank Approach.

The reliability of the scale was determined by Test-retest method. Pearson's Product Moment Coefficient of Correlation was worked out for correlating the two sets of scores for test-retest method. The value of correlation coefficient between two scores of Test-retest reliability was 0.362. Validity of scale was established by content validity method. The content validity was determined by using review of literature and opinion of 61 judges who were experts in the field of extension education, veterinary extension and animal husbandry and dairy science. Norms of distribution of utility perception score obtained by using the constructed scale indicated that the distribution was, in general, normal. This was tested and confirmed by the values of central tendency.

Utility perception of cattle owners were measured under six subcategories and finally their overall utility perception were measured. It relation to the deoni cattle owners, it was found that nearly two third (68.32 %) of deoni cattle owners had medium level of perception regarding overall utility of cattle, while equal percentage i.e. 15.84 of them were having high and low level of perception about overall utility of cattle. As far as non-descriptive cattle owners were concerned, it was found that two third (66.67 %) of non-descriptive cattle owners were having medium level of perception about overall utility perception of cattle whereas, 19.17 per cent had low level and 14.17 per cent had high level of perception regarding overall utility of cattle.

Acknowledgement

I greatly acknowledge to my Research Guide Dr. P.R. Deshmukh, Associate Professor and all the Professors in Department of Extension Education, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani for their support during research work. I express my deep sense of gratitude and indebtedness to Ministry of Science and Technology, Government of India, New Delhi, for providing financial assistance to me in the form "INSPIRE FELLOWSHIP" [INSPIRE Fellow No. IF130217] for the completion of my Ph.D. degree programme.

Conflict of Interest: None declared

References

- [1] Guilford J.P. (1978) Psychometric methods. Tata McGraw Hill Book Publication Company, Bombay: 178-196.
- [2] Anonymous (2013) Annual Report–2012-2013, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Government of India, New Delhi.
- [3] Bawajir and Nandapurkar (1984) Bawajir S.M.A. and G. G Nandapurkar. (1984). Development and standardization of the socio-economic status of the farmers. M.Sc. (Agri.) Thesis, MAU, Parbhani.
- 4] Chole R.R. (1986) Stratification, opportunity, structure and technological

- change in rural Marathwada. Ph.D. (Agri.) Thesis, MAU, Parbhani.
- [5] Tayade V.V. (2006) Empowerment of rural women in Marathwada region of Maharashtra state. Ph.D. (Agri.) Thesis, MAU, Parbhani.
- [6] Lad Anuradha Subhashrao (2014) Utility perception of mass media by the farm women. Ph.D (Agri.) Thesis, VNMKV, Parbhani (M.S.).
- [7] Sidam Vijay Narayanrao (2015) Disabilities of tribal people in their socioeconomic development. Ph.D (Agri.) Thesis, VNMKV, Parbhani (M.S.).
- [8] Garrett H. E. (1967) Statistics in psychology and education: Vakils Feffer and Simons, Pvt. Ltd., Bombay: 27-65.

||Bioinfo Publications|| 2220