



# Scale to Measure Working Self-Confidence of Youth to Adopt Dairy Farming as an Occupation

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## ABSTRACT

To find out the gap between existing and advisable working self-confidence to adopt dairy farming as a dependable occupation, it is necessary to have the tool to measure it. Thus, a scale to measure working self-confidence of youth to adopt dairy farming was developed using “Scale Product Method’ which is a combination of Thurston’s technique of Equal Appearing Interval Scale for an assortment of the statements and Likert’s method of summated rating for determining the response on the scale. A provisional list of 33 statements was prepared to keep in view the applicability of statements matched with the topic of study. The collected statements were edited as per the suggested standard. The score of each individual item on the scale was calculated by summing up the weightage of the individual items. The Median or Scale and Q values were found out by using Thurston and Chave inter-quartile range. Finally, 10 statements where median (scale) values greater than Q values were selected. However, when a few statements had the same scale values, statements with the lowest Q value were chosen by arranging the scale value in order. Reliability was tested with 20 farmers and its value was 0.88 and validity of the scale was examined. After measuring the working self-confidence to be a successful dairy farmer with the ten selected statements, it was concluded that majority (95.50 %) of the dairy farmers’ sons had a very high level of the overall operational or working self-confidence to be a successful dairy farmer.

**Key Words:** Scale, Dairy Farming, Working Self Confidence.

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## INTRODUCTION

Animal Husbandry contributes significantly to the socio-economic development of our country. It plays a considerable role in supplementing family incomes and generating employment in the rural sector. However, nowadays availability of the required vigorous practicable self-confident human resource for managing dairy farming for a sustainable future of animal husbandry is a big problem experienced by the planners, trainers and policymakers concerned in the expansion of rural India. It is expected that practising farmers’ sons should be encouraged to develop working self-confidence to adopt dairy farming as a permanent occupation. The working self-confidence is a

feeling of dependence on own abilities, qualities and judgement to perform various work and activities needed to be a successful human resource of animal husbandry occupation. To find out the gap between existing and advisable working self-confidence to adopt dairy farming as a dependable occupation, it was necessary to have the tool to measure it. There was no such tool available earlier, realizing this, a scale to measure the working self-confidence of youth to adopt dairy farming was developed.

## MATERIALS AND METHODS

Among the methods available for the construction of the scale, the “Scale Product Method’ which is a combination of Thurstone’s

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**Table 1. Calculation of S values and Q values to Measure Working Self-Confidence of Youth to Adopt Dairy Farming as an Occupation.**

Sr. No	Statement	Scale Value	Quartile Value	Decision
1	I am confident in my working ability to manage dairy farming.	1.4	1.062	<b>Selected</b>
2	I have the expertise to select the ideal breed of milch animals.	1.5	1.154	<b>Selected</b>
3	I can recognize symptoms of heat in dairy animals.	1.6	1.610	Rejected
4	I can select an ideal bull for the reproduction of dairy animals.	1.8	1.267	Rejected
5	I enjoy offering water to our dairy animals.	2.1	1.538	<b>Selected</b>
6	I know how to feed milch animals.	1.7	1.104	Rejected
7	I have the ability to use a chaff cutter.	1.7	1.208	Rejected
8	I get pleasure cleaning animal shed.	1.8	1.234	Rejected
9	I enjoy cleaning milch animals.	1.9	1.047	<b>Selected</b>
10	I know milking dairy animals.	1.5	1.194	Rejected
11	I know growing all season green fodder for dairy animals.	1.7	1.190	Rejected
12	I enjoy grazing dairy animals.	2.1	1.967	Rejected
13	I feel self-reliant in adopting dairy farming permanently.	2.2	1.738	<b>Selected</b>
14	I am familiar with butter-milk making procedure.	1.9	1.241	Rejected
15	I enjoy offering daily roughage to dairy animals.	2.0	1.122	Rejected
16	I like giving daily green fodder to dairy animals.	1.9	1.067	Rejected
17	I know the ideal time for colostrums feeding to a newborn calf.	1.4	1.069	Rejected
18	I am confident in maintaining cattle during pregnancy.	1.6	1.043	<b>Selected</b>
19	I am confident in managing the health of dairy animals.	1.8	0.987	<b>Selected</b>
20	I am able to buy ideal concentrate for dairy animals.	1.7	1.023	<b>Selected</b>
21	I can prepare urea treated straw for dairy animals.	1.8	1.234	Rejected
22	I can diagnose the illness of dairy animals.	1.6	1.248	Rejected
23	I know giving first aid treatment to dairy animals.	1.6	1.190	Rejected
24	I can handle the successful marketing of dairy products.	2.0	0.788	<b>Selected</b>
25	I am able to maintain the milk production record of dairy animals.	1.5	1.238	Rejected
26	I know cleaning newborn calves of our dairy animals.	1.7	1.082	Rejected
27	I know the schedule of vaccination in milch animals.	1.5	1.286	Rejected
28	I have ability of profitable ways of milk selling.	1.4	1.120	Rejected
29	I participate in dairy milk cooperative of my village.	1.7	1.104	Rejected

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30	I am familiar with different schemes related to dairy farming.	1.8	1.197	Rejected
31	I know rearing of calves of dairy animals.	1.7	1.028	Rejected
32	I can start animal husbandry occupation on my own ability.	1.4	1.155	Rejected
33	I have the practical ability needed to be a successful dairy farmer.	1.3	1.097	<b>Selected</b>

method of equal appearing interval scale to choose the perfect items and Likert's method of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown (1949) was used. The procedures adopted by Gulkari and Chauhan (2014), Patel and Chauhan (2015), Khatri and Chauhan (2018) and Tankodara and Chauhan (2021) were utilized.

**Item collection:** As a first step in budding the scale, 33 statements were collected from the appropriate literature, learning from the academicians, researchers and extension educators. The chosen statements were corrected using the standard procedure advocated by Thurstone and Chave (1928), Wang (1932), Likert (1932) and Edward and Kilpatrick (1948) before sending them for the judgement.

**Judge's rating:** To decide the degree of acceptance or agreement to rejection or disagreement of each statement on the five-point equal appearing interval continuum, a team of 50 judges was selected. The judges selected for the study were extension educators, experts from Veterinary College of Anand Agricultural University and economists as well as the statisticians from different State Agricultural Universities. The judges were contacted with a letter of instructions to guide for rating each statement in the desired manner. The selected judges were requested to give their responses, whether each of the listed statements should be included in scale to measure the working self-confidence to be a successful dairy farmer or not.

**Determination of Median or Scale and Quartile Values:** The five points of the rating scale were assigned, ranging from 1 for the most rejection

or most disagreement and 5 for most approval or most agreement. On the base of judgment, the Median Value or Scale Value of the distribution and the Quartile Values for the statement concerned were worked out, the interquartile range for each statement was also worked out for determination of ambiguity involved in the statement from the following formulas.

Where,

- S = The Median or Scale value of the statement
- L = Lower limit of the interval in which the Median (50<sup>th</sup> centile) falls
- $\Sigma P_b$  = The sum of proportion below interval in which Median (50<sup>th</sup> centile) falls
- P<sub>w</sub> = The proportion within the interval in which Median (50<sup>th</sup> centile) falls
- i = The width of the interval and is assumed to be equal to 1.0

Thurstone and Chave (Edwards, 1957) used the inter-quartile range Q as a means of the variation of the distribution of the judgments for a given statement. To determine the value of Q, two other points viz. the 75<sup>th</sup> centile and 25<sup>th</sup> centile were calculated using the following formulas.

The 25<sup>th</sup> centile value was obtained by the following formula

Where,

- = The 25<sup>th</sup> centile value of the statement
- L = Lower limit of the interval in which the 25<sup>th</sup> centile falls
- = The sum of proportion below interval in which 25<sup>th</sup> centile falls

**Table 2. Final selected statements to measure Working Self-Confidence of Youth to Adopt Dairy Farming as an Occupation**

No.	Statements	SA	A	UD	DA	SDA
1	I am confident in my working ability to manage dairy farming.					
2	I have the practical ability needed to be a successful dairy farmer.					
3	I feel self-reliant in adopting dairy farming permanently.					
4	I have the expertise to select the ideal breed of milch animals.					
5	I am confident in maintaining cattle during pregnancy.					
6	I am able to buy ideal concentrate for dairy animals.					
7	I am confident in managing the health of dairy animals.					
8	I enjoy offering water to our dairy animals.					
9	I enjoy cleaning milch animals.					
10	I can handle successful marketing of dairy products.					

- = The proportion within the interval in which 25<sup>th</sup> centile falls
- i = The width of the interval and is assumed to be equal to 1.0
- The 75<sup>th</sup> centile value was obtained by the following formula

Where,

- = The 75<sup>th</sup> centile value of the statement
- L = Lower limit of the interval in which the 75<sup>th</sup> centile falls
- = The sum of proportion below interval in which 75<sup>th</sup> centile falls
- = The proportion within the interval in which 75<sup>th</sup> centile falls
- i = The width of the interval and is assumed to be equal to 1.0

Then the inter quartile range or Q value was calculated by - .

**Statements or Items for final scale :** When there was a good agreement among the judges, in judging the degree of agreement or disagreement of a statement, values of Q was noticed smaller as compared to the S values, when there was relatively low agreement among the judges it was reverse. Only those statements were selected, whose Median values (S value) were greater than

Q values. However, when a few items had the same scale values, items having the lowest Q values were selected as advocated by (Thurstone, 1946). Based on the Median and Q values, 10 statements were finally selected to constitute scale.

**Reliability of the scale :** The split-half method of testing reliability was used. The 10 statements were divided into two halves with five odd-numbered in one half and the other five even-numbered statements in the other half. These were administered to 20 farmers. Each of the two sets of the statements was treated as a separate scale and then these two subscales were correlated. The coefficient of reliability was calculated by Rulon’s formula (Guilford, 1954), which was 0.80. The reliability coefficient has been calculated as the value of half size of the original scale. Thus, correction factor was calculated by using the Spearman-Brown formula as applied by (Naveenkumar and Chauhan, 2020) and Tankodara and Chauhan (2021) as mentioned below.

- rtt= Coefficient of reliability of original test
- roe= reliability of coefficient of odd and even score

The coefficient of reliability was calculated by the Spearman-Brown formula which came to be 0.88. Thus, the scale developed has been found highly reliable.

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**Table 3. Per cent of dairy farmers' son according to their working self confidence.**

No.	Overall self working confidence	Number	Per cent
1	Very low (Up to 10 score)	00	00.00
2	Low (above 10 to 20 score)	00	00.00
3	Medium (above 20 to 30 score)	00	00.00
4	High (above 30 to 40 score)	09	04.50
5	Very high (above 40 to 50 score)	191	95.50

**Content validity of the scale:** The content validity of the scale was examined through discussion with specialists, extension academicians and statisticians. It was concluded that the present scale satisfied content validity.

**Scoring system:** The finally selected 10 statements for the final format of the scale were randomly arranged to avoid response biases, which might contribute to low reliability and detract from the validity of the scale. The responses can be collected on five points continuums *viz.*, strongly agree, agree, undecided, disagree and strongly disagree with respective weights of 5, 4, 3, 2, and 1 for the favourable statements and with the respective weights of 1, 2, 3, 4 and 5 for the unfavourable statements. The working self-confidence to adopt the dairy farming score of each respondent can be calculated by adding the scores of all the ten statements.

The final scale was called to be the standardized one which contains 10 statements. The scale developed to measure the working self-confidence of youth to adopt dairy farming as an occupation, where responses have to be recorded on a five-point continuum as mentioned earlier. This statements were used in interview schedule and measured the working self confidence of 200 dairy farmers.

### RESULTS AND DISCUSSION

It can be seen from Table 3 that the overwhelming majority (95.50 %) of the dairy farmers sons had a very high level of the overall operational or working self-confidence to be a successful dairy farmer, followed by 4.50 per cent of them were with

the high level of the overall operational or working self-confidence to be a successful dairy farmer, while none of them was with a very low, low or medium level of the overall operational or working self-confidence to be a successful dairy farmer.

Thus, it can be concluded that the overwhelming majority (95.50 %) of the dairy farmers' sons had a very high level of the overall operational or working self-confidence to be a successful dairy farmer. The positive attitude, high level of basic and animal husbandry related knowledge, expected level of practical skill and ability to do the tasks confidently, high level of working exposure to many of the animal husbandry related activities and association with this occupation from childhood might have helps them to have high to a very high level of the overall operational or working self-confidence to be a successful dairy farmer.

### CONCLUSION

This standardized scale was made available to measure the working self-confidence of youth to adopt dairy farming as an occupation. This tool is helpful to measure the working self-confidence of rural youth and agricultural graduates. After measuring the working self-confidence to be a successful dairy farmer with the ten selected statements, it was concluded that majority (95.50 %) of the dairy farmers' sons had a very high level of the overall operational or working self-confidence to be a successful dairy farmer. This scale is useful to the planners and policymakers in developing policies for the development of animal husbandry workability of the rural youth.

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