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Developing an equal appearing interval scale on job efficiency of veterinary assistant surgeons of Tamil Nadu

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Abstract
Job efficiency is a level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs. Efficiency also can be stated as the act of being adequate in performance with a minimum of waste, effort, time. Effectiveness "is the capability of producing a desired result. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression". According to that, if an employee is efficient so perhaps he may be also effectiveness even after training.Hence the present study was undertaken to develop a Thurstone's Equal Appearing Interval Scale to measure the job efficiency of the Veterinary Assistant Surgeons of Tamil Nadu. Purposive sampling was employed and Erode district of Tamil Nadu was purposively selected for the study. Sixty Veterinary Assistant Surgeons working in Erode District were randomly selected as judges. At the time of interview, all the 109 statements were presented to the Veterinary Assistant Surgeons and they were requested to sort out the 109 attitude statements on an 11 point continuum from the 'least favourable' to 'most favourable'. Statements with larger Q-values were eliminated from the final list of statements. Thus the final list comprises of 18 statements.

Keywords: Job efficiency, performance and effectiveness

Introduction
Animal husbandry has traditionally been a part of agriculture in India with almost two thirds of rural households engaged in livestock farming. It plays an important role in poverty alleviation and overall socio-economic development of the rural community. Each state has a department of animal husbandry to provide varied types of livestock services like livestock health services, livestock breeding services and livestock extension services. Under Department of Animal Husbandry & Dairying, responsibility for the delivery of these services lies exclusively with the Veterinary Surgeons (VSs) and the field staff working at Government Veterinary Hospitals (GVHs) and Government Veterinary Dispensaries (GVDs). Basically, these grass root officials are the lifeline of the livestock system in a state not only by dispensing services to the farmers but also by preserving and protecting the livestock from various diseases and protecting the human community from zoonotic diseases.

Success of any organization depends on the commitment of its human resource, bringing about their individual developments and ensuring their efficiency (Aydogdu and Asikgil, 2011) [1] and can be competitive only when their employees are satisfied with their jobs (Franek and Vecera, 2008). The success of a veterinary practice depends not only on the clinical skills of the professional veterinary staff but also on non-clinical skills related to organizing and managing the practice. In many veterinary practices, the non-clinical skills associated with human resource management, financial management, and service delivery are the responsibility of the State Veterinary Assistant Surgeons.

Competencies of VAS are defined as demonstrated behaviours, skills and abilities associated with high performance on a job. They are the personal attributes that differentiate effective from ineffective workers and should form the basis of hiring decisions. The goal of a job analysis is to identify and determine in detail the particular job duties and requirements for a given job, and the relative importance of these duties. The critical requirements of a job are then linked to knowledge, skills and abilities that determine success on the job.

Job efficiency is a level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs. Efficiency also can be stated as the act of being adequate in performance with a minimum of waste, effort, time.

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Effectiveness "is the capability of producing a desired result. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression". According to that if an employee is Efficient so perhaps he may be also Effectiveness even after training.

Against this backdrop, an attempt was made to develop a Thurstone's Equal Appearing Interval Scale to measure the job efficiency of the Veterinary Assistant Surgeons of Tamil Nadu.

Methodology

Thurstone's technique of equal – appearing interval scale is used in psychology and sociology and it was the first formal technique to measure an attitude. Basically it is used to assess the attitude of people regarding any social phenomena. "A Thurstone scale is a way of measuring people's attitudes along a single dimension by asking them to indicate whether they agree or disagree with each of a large set of statements that are about that attitude." - Wikipedia"

Interval scale

An interval scale is one on which the distances between points on the measuring instrument are known, and on which equal numerical distances represent equal distances along the continuum being measured. Such a scale enables one to compare differences or changes in attitude, since the difference between a score of 3 and a score of 7 is equivalent to the difference between a score of 6 and a score of 10, and to the difference between any other two scores that are four points apart.

Results and Discussion

Developing an Equal Appearing Interval Scale on Job efficiency of Veterinary Assistant Surgeons of Tamil Nadu

Collection of attitude statements

Job chart of the VAS was referred and after the consultation of relevant literature, professionals etc., large number of statements, which is called universe of statements was generated. The items or opinion, to be endorsed by the respondents, making up an attitude scale are called "statements". The statements were then carefully scrutinised and edited based on the 14 guidelines suggested by the Edwards (1969) [2]. Finally they were 13 statements in Technical ability, 5 statements in Creativity, 8 statements in Communication skill, 6 statements in organizational skill, 6 statements in Initiative, 5 statements in Decision making, 7 statements in Empathy, 7 statements in Positive attitude, 6 statements in Leadership quality, 7 statements in Credibility, 5 statements in Planning ability, 5 statements in Self - confidence, 5 statements in Co - ordination ability, 7 statements in Professionalism, 5 statements in Accountability, 4 statements in Stress - personal stress, 8 statements in Job stress and a total of 109 statements under 17 domains. A well-structured interview schedule was developed for collecting the data from the judges. Purposive sampling was employed and Erode district of Tamil Nadu was purposively selected for the study. Sixty Veterinary Assistant Surgeons working in Erode District were randomly selected as judges.

Judge's ratings of attitude statements

At the time of interview, all the 109 statements were presented to the Veterinary Assistant Surgeons and they were requested to sort out the 109 attitude statements on an 11 point continuum from the 'least favourable' to 'most favourable'. The responses of all the 60 judges first checked possible indifferent or careless judging and found none.

Hence, all the 60 judges (VAS) were retained for final selection of statements for construction of the attitude scale.

Computation of Scale Value

Since, the median of the distribution of judgements for each statement was taken as the scale value of the statement, the scale value was calculated from the data by means of the formula given by Edwards (1969) [2].

$$S = l + \frac{(0.50 - \Sigma pb)}{pw} X i$$

Where,
S = the median or scale value of the statement
L = the lower limit of the interval in which the median falls
Σpb = the sum of the proportion below the interval in which the median falls
Pw = the proportion within the interval in which the median falls
I = the width of the interval and is assumed to be 1.0.

Computation of Q Values

In equal – appearing intervals it is not enough to have the scale values by computing the medians of judges' responses. The ambiguity, uncertainty or disagreement amongst the judges in sorting each statement in a particular category have to be found out. This is done by computing the Interquartile range Q which is an index of dispersion of the statements on the scale (Edwards, 1969) [2]. Statements with larger Q values are omitted. To determine the Q – value it is necessary to find out two other point measures, the 75th centile (C_{75}) and the 25th centile (C_{25}).$Q = C_{75} - C_{25}$

$$C75 = l + \frac{(0.75 - \Sigma pb)}{pw} X i$$

Where,
L = the lower limit of the interval in which the 75th centile falls
Σpb = the sum of the proportion below the interval in which the 75th centile falls
pw = the proportion within the interval in which the 75th centile falls
i = the width of the interval and is assumed to be 1.0.

$$C25 = l + \frac{(0.25 - \Sigma pb)}{pw} X i$$

Where,
L = the lower limit of the interval in which the 25th centile falls
Σpb = the sum of the proportion below the interval in which the 25th centile falls
Pw = the proportion within the interval in which the 25th centile falls
i = the width of the interval and is assumed to be 1.0.

Final selection of attitude statement

Thurstone and Chave regarded large Q –value primarily as an indication that a statement was ambiguous. Statements with larger Q- values were eliminated from the final list of statements.

Table 1: The final selected attitude statement

S. No	Statements	S value	Q value
T1	I consider myself that I am possessing necessary knowledge and skills to treat cases which are brought to my clinic/hospital.	9.27	2.27
T6	I am skilled in doing Artificial Insemination	9.22	2.30
Cre 3	At times, the Veterinary Assistant Surgeon should go beyond traditional ways to address livestock farmers issues despite obstacles	9.16	1.90
Com 5	I am skilled enough to use multimedia, mobile and other e-tools effectively for technology transfer to livestock and poultry farmers	9.82	2.18
O5	I am able to build good rapport with livestock farmers	9.74	2.18
I1	When the situation demands, I used to initiate appropriate action on my own	9.16	1.15
D1	As a veterinarian, I Know the consequences of decisions at farmers level	9.66	2.60
E1	I always listen patiently and understands client farmers feelings and opinions	9.63	2.14
Po5	I feels that farmers can develop if they are provided with needed help and advice	9.62	1.15
L3	In my opinion, a veterinarian should have the ability to motivate farmers to participate in Animal Husbandry Extension activities	9.85	1.15
Cre 6	I keeps promises given to livestock farmers	9.78	1.13
Pla 2	I am able to select problems based on the needs and interests of the farmers and to determine priorities of problems and tasks	9.62	2.11
S C1	I used to focuses my attention on possibilities rather than obstacles	9.89	1.29
Co or 2	I used to apologizes readily and genuinely when one is hurt by me	9.85	1.15
Acco3	I used to prepare success stories that are informative and outcome oriented	9.82	2.18
P S 1	Do not have sufficient time for personal work	9.85	1.94
JS 3	Involvement in additional unrelated work is interfering with quality of the job	9.44	1.85
JS 5	Superiors at job are merely interested in getting work done and are unconcerned about feelings and reactions	9.62	1.15

Reliability of the scale
Reliability is the precision or accuracy of a measuring instrument. It is the frequency with which a scale produces consistent results with a sample. Reliability in respect of internal consistency of the scale was ensured by using the split-half method. A reliability coefficient of 0.83 was obtained which indicated high internal consistency of the instrument testifying that it had high reliability.

$$\text{Reliability coefficient} = \frac{2\,(reliability\ coefficient\ of\ the\ half - test)}{1 + (\text{reliability coefficient of the half test})}$$

Content validity of the scale
The validity of the scale was ascertained through content validity, which means the representativeness of universe or sampling adequacy of the content of a measuring instrument.

Conclusion
The final scale consists of 18 statements can be used for periodic appraisal of work force which will improve the organisations performance, hence this scale would be helpful in shaping the state AH department.

References
1. Aydogdu S, Asikgil B. An empirical study of relationship among job satisfaction, organizational commitment and turnover intention. International Review of Management and Marketing 2011;1(3):43-53.
2. Edwards AL. Techniques of Attitude Scale construction. P. XVI., Vakils, Feffer and Simons Pvt. Ltd, Bombay 1969.
3. Franek M, Vecera J. Personal characteristics and job satisfaction. Ea M: Ekonomie a Management 2008;11(4):63-76.