Statistical Tool Used in Water Resource Management

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Abstract –

These service deficiencies primarily affect the poorest segments of the population in developing countries. In these countries, water supply and sanitation for urban and rural areas represents one of the most serious challenges in the years ahead. Water is increasingly seen as a key constraint on food production, on a par with, if not more crucial than, land scarcity. All human activities need water and produce waste, but some of them need more water or produce more waste per job than others. This consideration has to be taken into account in economic development strategies, especially in regions with scarce water resources. Water has a value as an economic good.

Keyword - Survey People, Domestic variable, Agriculture variable,

1 INTRODUCTION

The present investigation was undertaken by using normative survey method. The survey method gathers data from a large number of cases at particular time. It is interested in knowing something about the whole population. The present investigation aims to bring out the water resource management strategy with reference to 3R technology.

2 METHODOLOGY

Survey is a procedure in which data is systematically collected from a population through some form of direct solicitation such as face interview, questionnaire or schedule. According to John. W. Best (1959) "The survey is extensive and cross sectional, dealing with a relatively large number of cases at a particular time and yielding statistics that are abstracted from particular cases.

The survey approach to educational problems is one of the most commonly use approaches. It goes beyond mere gathering and tabulation of data. It involves interpretation, comparison, measurement, classification, evaluation and generalization all directed towards a proper understanding and solution of significant educational problems. It brings into the focus of our attention to existing educational problems and also suggests ways of meeting them. It gives importance to what is rather than why it is so.

1. Factual information regarding existing status enables members of the profession to make efficient plans about future course of action.
2. It provides comprehensive of underlying issues in the areas of study.
3. It focuses, the attention upon the needs that otherwise world remain unnoticed.
4. It provides extensive information about the nature of educational phenomena.

3 RESULT ON DESCRIPTIVE ANALYSIS

3.1 FOR DOMESTIC SECTOR

Descriptive analysis provides the features of the data under study. The descriptive measures used for this research work comprises of the measures of central tendency i.e. the mean, median and mode; measures of variability-standard deviation and co-efficient of skewness and kurtosis.

Following table provides the information of the descriptive analysis for the usages of Domestic Sector, followed by the interpretation and a valid conclusion.

Table No 01 Total Distributions of the Scores of the Water Resource Management at Domestic Sector

Variables	No. of Parameters	Mean	N	Median	Mode	SD	Skewness	Kurtosis
Domestic	29	36.64	150	36.00	34.00	5.76	-1.66	6.28
Reduce	15	19.29	150	19.00	19.00	3.27	-4.10	21.57
Recycle	8	10.06	150	10.00	8.00	2.61	-0.61	1.45
Reuse	6	7.29	150	7.00	7.00	1.62	-1.58	7.37

Usage of Facilities	16	9.59	150	8.50	12.00	2.99	0.17	-0.75

Interpretation

Overall Domestic Sector Usages: Based on all the 29 parameters covered under the 3Rs, the scores of the water resource management at Domestic Sector is found with a mean of 36.64 and a standard deviation of 5.76. In addition the Median with 36.00 nearby coincide with mean value and the Modal value of 34.00 determines the maximum occurring value which stands near to but less than the calculated mean value. The mean value of the model, based on its weights and number of items is 29 hence the water resource management is high. The coefficient of skewness of the distribution is found to be -1.66, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 6.28 which is a leptoykurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

Reduce: Based on the 15 parameters under the practice of Reduce criterion at Domestic Sector is found with a mean of 19.29 and a standard deviation of 3.27. In addition the Median with 19.00 and the Modal value of 19.00 also coincide with mean value. The mean value of the model, based on its weights and number of items is 15 hence the reduce of water management is high. Since the modal value is slightly less than the mean value, the coefficient of skewness of the distribution is found to be -4.10, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 21.57 which is a leptokurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

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Recycle: Based on the 8 parameters under the practice of Recycle criterion at Domestic Sector is with a mean of 10.06 and a standard deviation of 2.61. In addition the Median with 10.00 which coincide with mean value and also the Modal value of 8.00 determines the maximum occurring value which stands just near but less than the calculated mean value. The mean value of the model, based on its weights and number of items is 8 hence the recycle of water resource management is high. Since the modal value is less than the mean value, the coefficient of skewness of the distribution is found to be -0.61, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 1.45 less than 3 which is a platykurtic distribution. The flatness indicates that the scores concentrate away from the central value.

Reuse: Based on the 6 parameters under the practice of Reuse criterion at Domestic Sector is found with a mean of 7.29 and a standard deviation of 1.62. In addition the Median with 7.00 which coincide with mean value and also the Modal value of 7.00 determines the maximum occurring value which stands just near but slightly less than the calculated mean value. The mean value of the model, based on its weights and number of items is 6 hence the reuse of water resource management is high. Since the modal value is less than the mean value, the coefficient of skewness of the distribution is found to be -1.58, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 7.37 much more than 3 which is a leptokurtic distribution. The flatness indicates that the scores concentrate away from the central value. The excess peakness indicates that the maximum scores concentrate near the central value.

Usage of Facilities: Based on the 16 parameters under the usage of facilities at Domestic Sector is found with a mean of 9.59 and a standard deviation of 2.99. In addition the Median with 8.50 indicates that out of 16 facilities almost half of the respondents utilize 8 to 9 facilities where as the Modal value of 12.00 indicates that around 12 facilities are utilized by maximum of the respondent which is much larger as compared to the mean value. The mean value of the model, based on its weights and number of items is 15 hence the reduce of water management is high. Since the model value is much larger than the mean value, the coefficient of skewness of the distribution is found to be 0.17, which is positively skewed and consequently the scores are amassed at the left end of the distribution. The coefficient kurtosis of the distribution is found to be -0.75 which is a platykurtic distribution. The flatness indicates that the scores concentrate away from the central value.

3.2 FOR AGRICULTURE SECTOR

Following table provides the information of the descriptive analysis for the usages of agriculture sector, followed by the interpretation and a valid conclusion.

Table -02 Total Distributions of the Scores of the Water Resource Management at Agriculture Sector

Variables	No. of Factors	Mean	N	Median	Mode	SD	Skewness	Kurtosis
Agriculture	25	33.09	185	33.00	33.00	2.69	-4.85	41.92
Reduce	17	22.48	185	22.00	22.00	2.10	-3.43	31.80
Recycle	4	5.58	185	6.00	6.00	1.00	-3.35	14.37
Reuse	4	5.03	185	5.00	5.00	1.12	-1.74	11.07
Usage of Facilities	3	1.78	185	2.00	1.00	1.00	0.02	-1.38

Interpretation

Overall Usage of Agriculture Sector: Based on all the 25 parameters covered under the 3Rs, the scores of the water resource management at Agriculture sector is found with a mean of 33.09 and a standard deviation of 2.69. In addition the Median with 33.00 nearby coincides with mean value and the Modal value of 33.00 determines the maximum occurring value which stands near to the calculated mean value. The mean value of the model, based on its weights and number of items is 25 hence the water resource management is high. The coefficient of skewness of the distribution is found to be -4.85, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 41.92 much greater than 3 which is a leptoykurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

Reduce: Based on the 17 parameters under the practice of Reduce criterion at Agriculture sector is found with a mean of 22.48 and a standard deviation of 2.10. In addition the Median with 22.00 and the Modal value of 22.00 almost coincide with mean value. The mean value of the model, based on its weights and number of items is 17 hence the reduce of water management is high. The coefficient of skewness of the distribution is found to be -3.43, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 31.80 much greater than 3 which is a leptokurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

Recycle: Based on the 4 parameters under the practice of Recycle criterion at Agriculture sector is with a mean of 5.58 and a standard deviation of 1.00. In addition the Median with 6.00 which coincide with mean value and also the Modal value of 6.00 determines the maximum occurring value which stands just near the calculated mean value. The mean value of the model, based on its weights and number of items is 4 hence the recycle of water resource management is high. The coefficient of skewness of the distribution is found to be -3.35, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 14.37 much more than 3 which is a leptokurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

Reuse: Based on the 4 parameters under the practice of Reuse criterion at Agriculture sector is found with a mean of 5.03 and a standard deviation of 1.12. In addition the Median with 5.00 which coincide with mean value and also the Modal value of 5.00 determines the maximum occurring value which stands just near but slightly less than the calculated mean value. The mean value of the model, based on its weights and number of items is 4 hence the reuse of water resource management is high. Since the modal value is less than the mean value, the coefficient of skewness of the distribution is found to be -1.74, which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The coefficient kurtosis of the distribution is found to be 11.07 much more than 3 which is a leptokurtic distribution. The excess peakness indicates that the maximum scores concentrate near the central value.

Usage of Facilities: Based on the 3 parameters under the usage of facilities at Agriculture sector is found with a mean of 1.78 and a standard deviation of 1.00. In addition the Median with 2.00 indicates that out of 3 facilities almost half of the respondents utilize 2 facilities where as the Modal value of 1 indicates that only 1 facility is utilized by maximum of the respondent which is smaller as compared to the mean value. The mean value of the model, based on its weights and number of items is 3 hence the all of the facilities utilization of water management seems to be slightly low. The coefficient of skewness of the distribution is found to be 0.02, which is positively moderately skewed and consequently the scores are amassed at the left end of the distribution. The coefficient kurtosis of the distribution is found to be -1.38 which is a platykurtic distribution. The flatness indicates that the scores concentrate away from the central value.

4 CONCLUSION

The means values of Domestic Sector as well as Agriculture sectors stand high in case of overall usages as well as the 3R parameters. But in case of facilities usages the mean values are less which indicates the requirement in increasing the usage of available facilities in both Domestic Sector as well as the Agriculture sector.

The Median and Modal values almost coincide with their respective mean value. This provides a stand for data tending towards normal distribution. This provides the support for further investigation or inferential statistics.

The variability recorded on the basis of the output of the calculation of the responses. It can be noticed that the SD values of agriculture sector are less as compared to the Domestic Sector. This means that the framers are more concern about the Water Resource Management.

Negatively skewness indicates maximum utilization of parameters except the recycle of the Domestic Sector. The leptokurtic curve indicates maximum concentration towards the central value. But both the Domestic Sector and the agriculture sector lack this in case of the utilization of facilities. As indicated in case of mean values, the requirement in increasing the usage of available facilities in both Domestic Sector as well as the Agriculture sector.

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