

THEME 8

**OPERATIONAL
EFFICIENCY
IMPROVEMENTS** 

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INTRODUCTION

High levels of Non-revenue water (NRW) reflects huge amount of water being lost and not being accounted to customers or National Water Supply and Drainage Board (NWS&DB). This study focuses on the above, in order to examine the relationship between NRW and employee attitudes. The researcher has selected Moratuwa OIC office under Regional Support Centre (Western South) as the sample study area.

Employees are seen as the key resources for the success of an organization. Due to this reason, employee attitudes towards the business goal will have a major effect on organizational success.

Negative attitudes of employee towards their organization are far more likely to be separated, fulfilling their works with lowest quality level. Based on employee attitudes toward work, employee feels more or less committed to the job. Positive attitude increase the result of courtesy, emotional engagement and real concern for the well-being and satisfaction of the customer.

Research Objectives are mainly focussed on the following areas.

- Objective 01: To identify the factors that are affecting the attitude of the NWSDB employees.
- Objective 02: To study the relationship between employee attitudes and Non-revenue water reduction programme.
- Objective 03: To recommend cause of actions to change employee attitudes so as to improve non-revenue water reduction programme.

People tend to be successful in life because they feel confident in taking challenges. Through this study, the researcher would look into the influence of employee attitudes towards the organizational revenue losses as it is important for the success of NWSDB.

METHODOLOGY

The research is focussed to study the relationship between two variables, employee attitude and revenue losses. The research has been conducted using primary and secondary source of data accumulation. Surveys and interviews have been conducted to determine the perception of the employees and management. A questionnaire was used in order to gather relevant data for the research. The sample was 25 employees out of 70, who are involved with the operational activities at the Moratuwa OIC office area.

Calculation of Data

Following formula was used to calculate water loss in Moratuwa area. This considers the difference between volume produced and volume consumed.

$$\text{NRW} = \frac{(\text{Quantity Supplied} - \text{Quantity Billed})}{\text{Quantity Supplied}} \%$$

Simple correlation: to test the relationship between two variables.

The basic principle of correlation analysis is to establish the relationship between two variables taken together. When sample coefficient of correlation is 1 or near +1 then there exist highly positively correlated variables. If the value is -1 or very close to -1, the two variables are negatively correlated.

Weighted average method with sample data

| X | Y |
|---------------|------|
| X1 (Belief) | 0.56 |
| X2 (Feelings) | 0.48 |
| X3 (Behavior) | 0.80 |

Table 01: Correlation between two variables

Regression and scatter plot:-

To calculate the regression of data, researcher has used the Minitab software.

$$r = \frac{n \sum XY - (\sum X)(\sum Y)}{\sqrt{[n \sum X^2 - (\sum X)^2][n \sum Y^2 - (\sum Y)^2]}}$$

RESEARCH OUTCOME

People act on the basis of their beliefs whether or not these beliefs are valuable to the organization objectives. Positive attitude enhance the result of courtesy, emotional engagement and real concern for the well-being and satisfaction of the customer. According to the survey employee attitude is the most important factor that organization should look upon. From the findings, it can be concluded that negative attitudes can affect to organizational performance. The research also concludes that there is a very strong positive relationship between employee attitudes and non-revenue water reduction.

NRW during June 2013 - December 2013

| Description | June -2013 | July-2013 | Aug.2013 | Sep.-2013 | Oct.-2013 | Nov.-2013 | Dec.-2013 |
|--|------------|------------|------------|-----------|-----------|------------|-----------|
| Total no. of production (m ³) | 1,001,643 | 1,024,948 | 1,013,006 | 905,888 | 1003,825 | 1,090,677 | 1,028,153 |
| Total no. of consumption (m ³) | 720,246 | 747,395 | 731,217 | 689,128 | 773,256 | 734,904 | 784,501 |
| Total NRW | 281,397 | 277,553 | 281,789 | 216,760 | 230,569 | 355,773 | 243,652 |
| NRW % | 28.09 | 27.08 | 27.82 | 23.93 | 22.97 | 32.62 | 23.70 |
| Revenue Losses (Rs.) | 11,255,880 | 11,102,120 | 11,271,560 | 8,670,400 | 9,222,760 | 14,230,920 | 9,746,080 |

Table 2: (Source :MIS report -2013, RSC-WS,NWSDB)

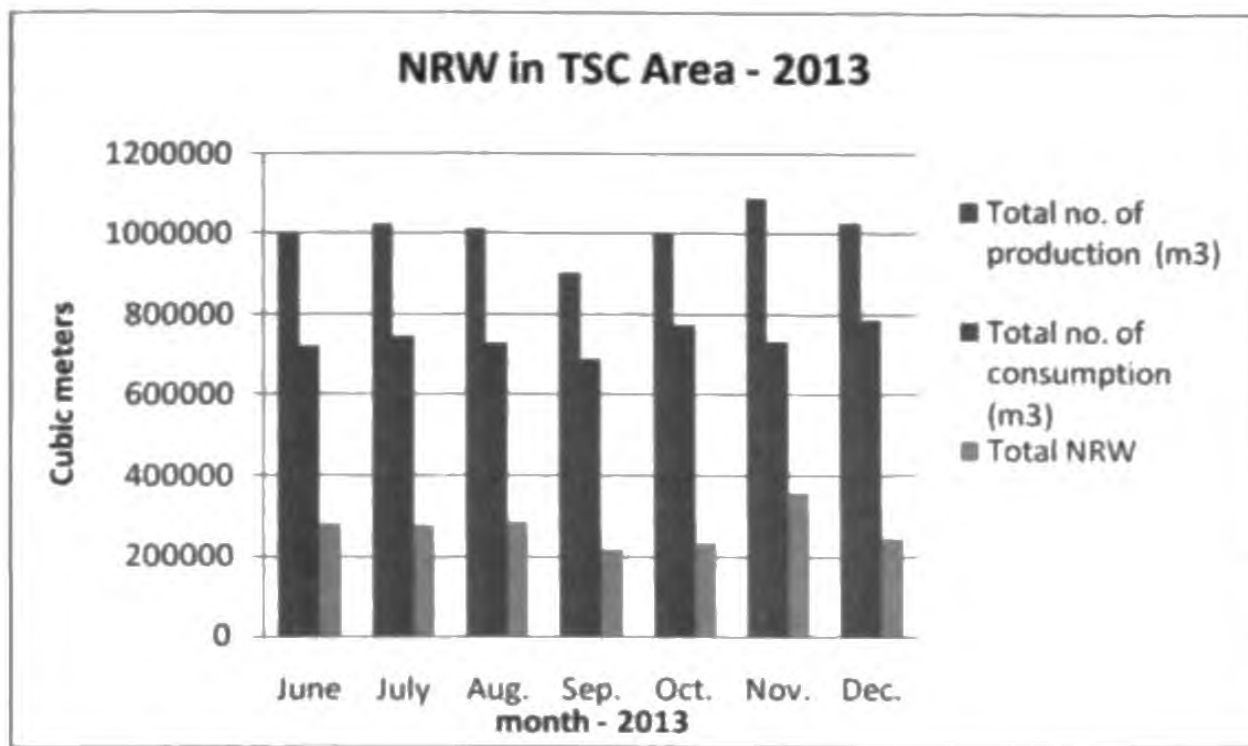


Figure 01: NRW

Objective 01: To identify the factors that are affecting attitude of the NWS&DB employees. Graphical analysis has been done to identify the factors that are affecting attitude of the NWS&DB employees.

Feeling of employees' "I haven't an idea how much water is lost".

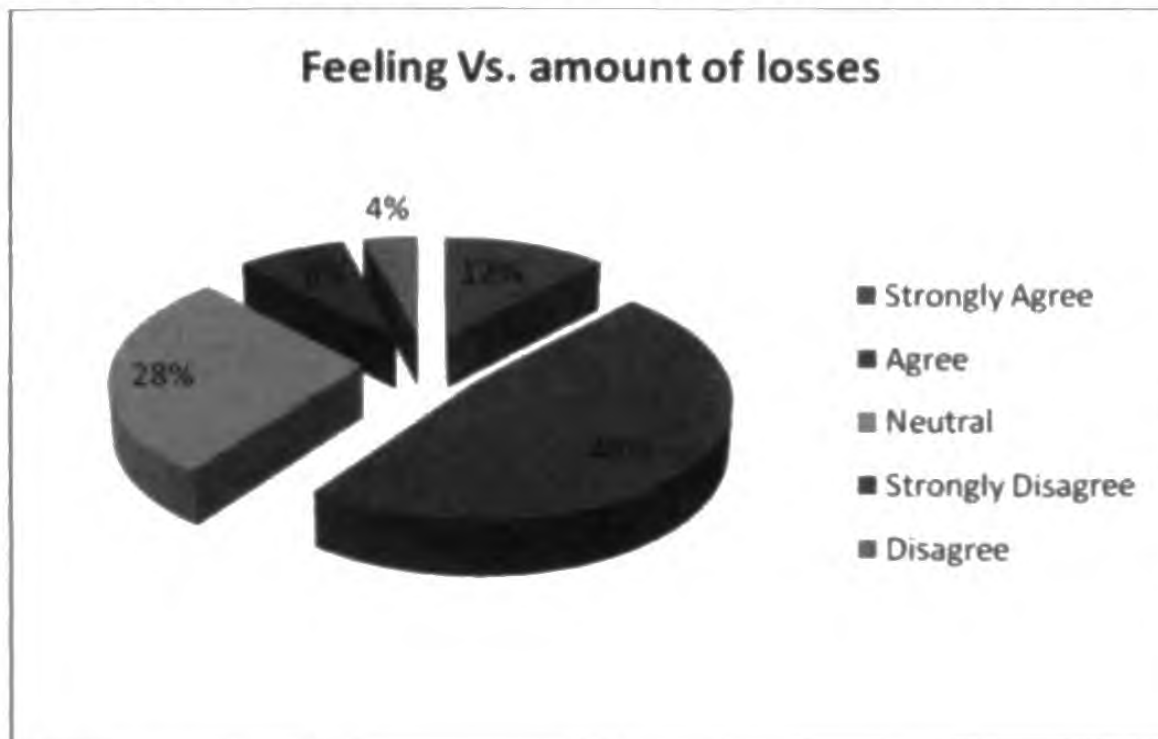


Figure 02: Feelings of employee

Employee belief vs. Organization:- " I feel that Organization is not appreciating my work performance."

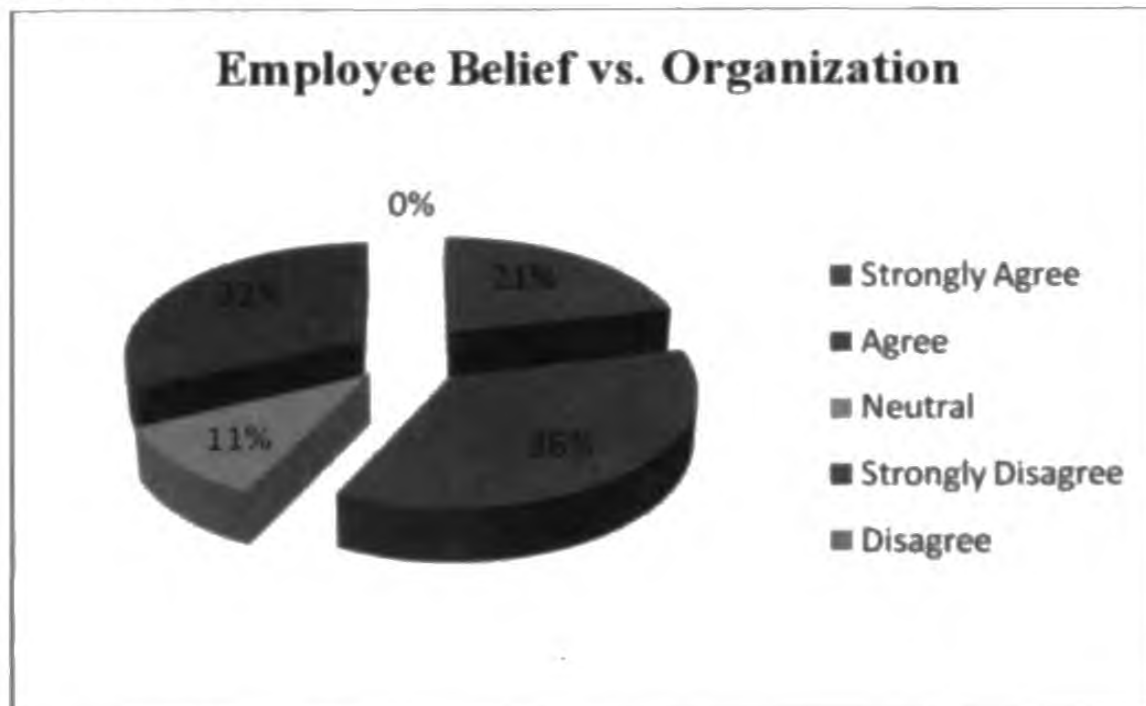


Figure 03: Belief of employee

Employee feelings vs. Work environment:- “I feel management has not created an open and comfortable work environment.”

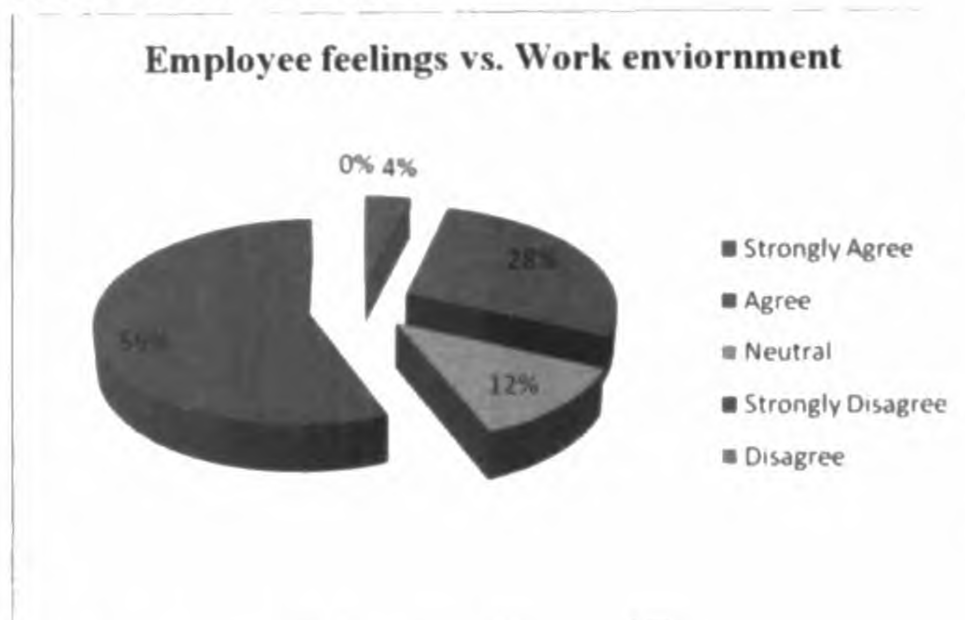


Figure 04: Feelings of employee

Organization assistance vs. Employee behaviour: - “ I have faced many difficulties due to lack of assistance from management.”



Figure 05: Behaviour of employee

Employee behaviour and their capabilities :- “I think management has not recognized my skills and abilities”

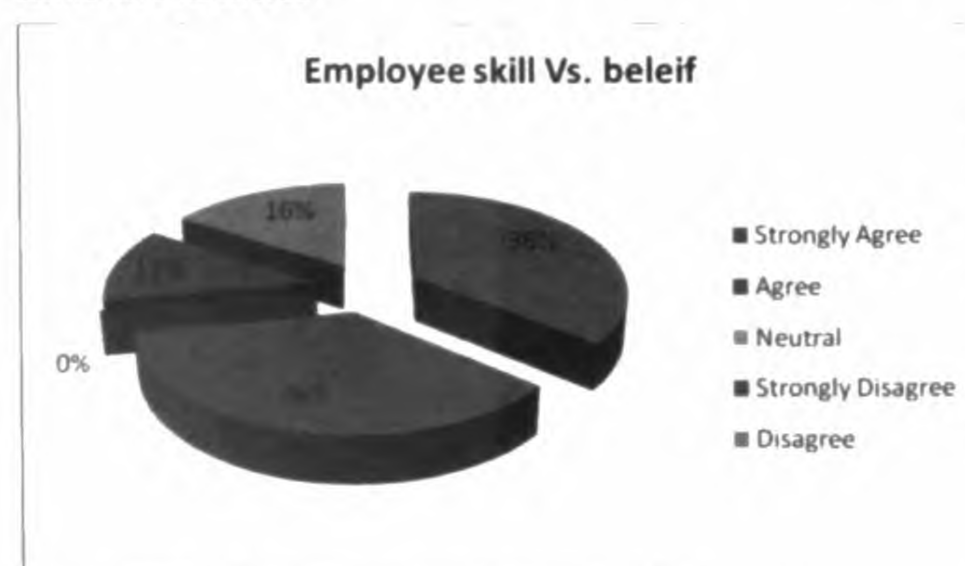


Figure 06: Belief of employee

Objective 02: To study the relationship between employee attitudes and Non-revenue water reduction programme.

Regression and scatter plot

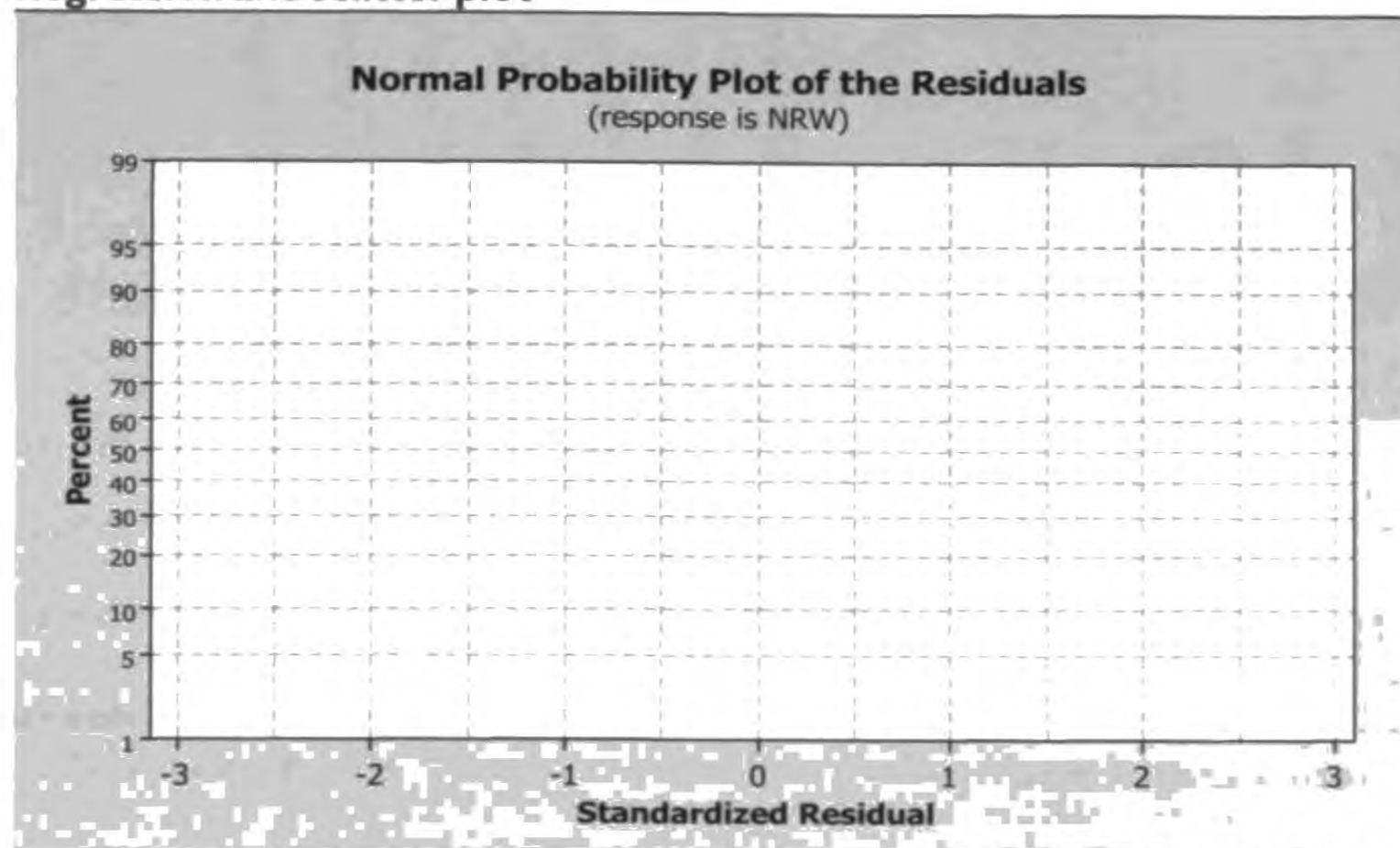


Figure 07: Employee attitude vs. NRW

According to the scatter plot, there is a close relationship between variable X (attitude) and Y (NRW percentage) where change in (X) causes a change in (Y). Based on employee attitudes towards their work, employee feels more or less committed to the job.

CONCLUSION

Objective 03: "To recommend the cause of action to change employee attitudes so as to improve non-revenue water reduction programme."

It is difficult for any organization to fulfil the personal needs and values of each employee. However if the organization provides an appropriate authority to design work activities to the individual employees, then it is highly possible that the work activities can match employees' needs that contribute to the organizational performance. That is a crucial issue to be considered seriously. Sometimes, the issue is not about non-availability of resources but it is about the management of the available resources in a particular location.

People are sensitive to differences between actions and beliefs. Therefore basically the management has to convert their negative beliefs to positive beliefs. Recognition of the inconsistency can be changed by providing guidance to mitigate negative attitudes.