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Drinking Water Engineering and Science Discussions

Interactive comment on "Rapid evaluation of water supply project feasibility in Kolkata, India" *by* K. Dutta Roy et al.

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Dear Reviewer, Thanks for your critical comments on the paper. Please find the reply to the specific points about this article:

Point 1: The literature reviews shall be shortened and technical details (like Monte Carlos simulations results advised in query 3) shall be included in the final version as advised. The flow diagram as presented in Fig. 1 shall be added in the methodology section.

Point 2: Regression model based on capacity cost curves were used initially (Art: 3.4, P: 75, Ln: 2). The ANN was adopted for better correlations. The correlation coefficient R2 in ANN has been found to be 0.81 (Art: 3.4, P: 76, Ln: 29 and Fig. 3, P: 102).

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The R2 for regression model was worked out to be 0.58 but not presented in the paper. The correlations of regression and ANN models are compared in Fig. 2. The existing correlation graph (Fig. 3, P: 102) may be substituted in the paper with the graphs in Fig. 2.

The structures of ANN were presented in Art: 3.4 (P: 76, Ln: 7-22). Six network structures were compared for optimum selection. The training was made with data from eight units and validation was based on two units which were not present in the training data set (Art: 3.4, P: 76, Ln: 23-26). The testing and validation results have been presented in Table 4 (P: 96).

Point 3: The Monte Carlos simulation (MCS) was used twice. Firstly, MCS was used in eqn. 3 for estimating the present value of costs (Art 3.3, P: 74, Ln: 6-13). The results (i.e. mean and standard deviations) were used in Fig. 2 at page 101 (Art 3.3, P: 74, Ln: 17-19).

Secondly, the MCS was used in eqn. 4 for estimating the net present value (Art: 5.2, P: 83, Ln: 23). The input values for simulation have been presented in Table 6 (P: 98). The results of the simulation (i.e. mean and standard deviations) for typical cases have been presented in Figure 5 (P: 104).

In each simulation, the numbers of run were ten thousands. MCS results of eqn. 4 for typical three cases have been presented in Fig. 3 as examples. These details were not included in the paper but shall be incorporated in the final version as advised.

Interactive comment on Drink. Water Eng. Sci. Discuss., 3, 65, 2010.

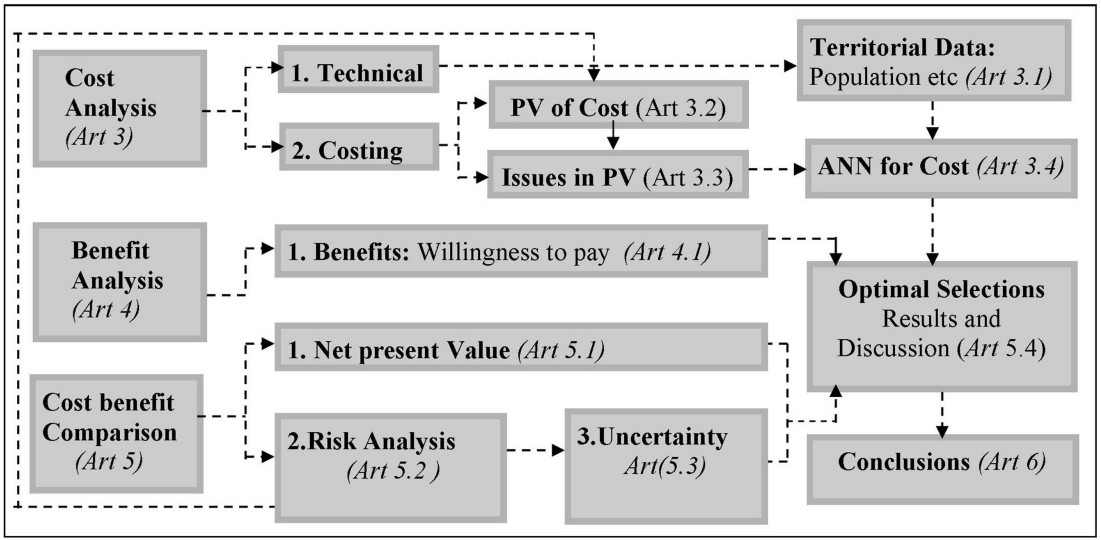

Fig. 1. Flow diagram of the cost benefit analysis

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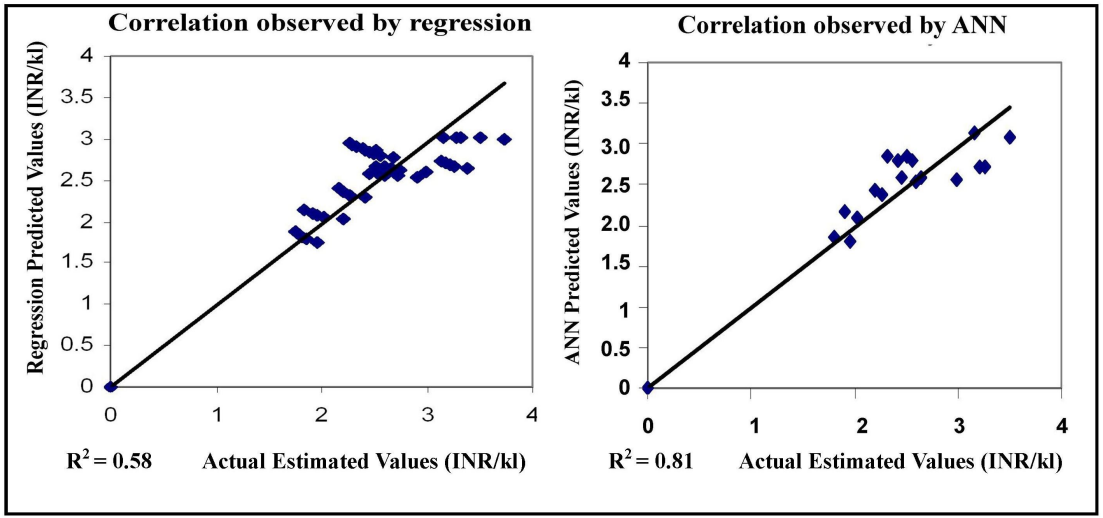

Fig. 2. Correlation coefficient (R2) for estimated prediction and actual values

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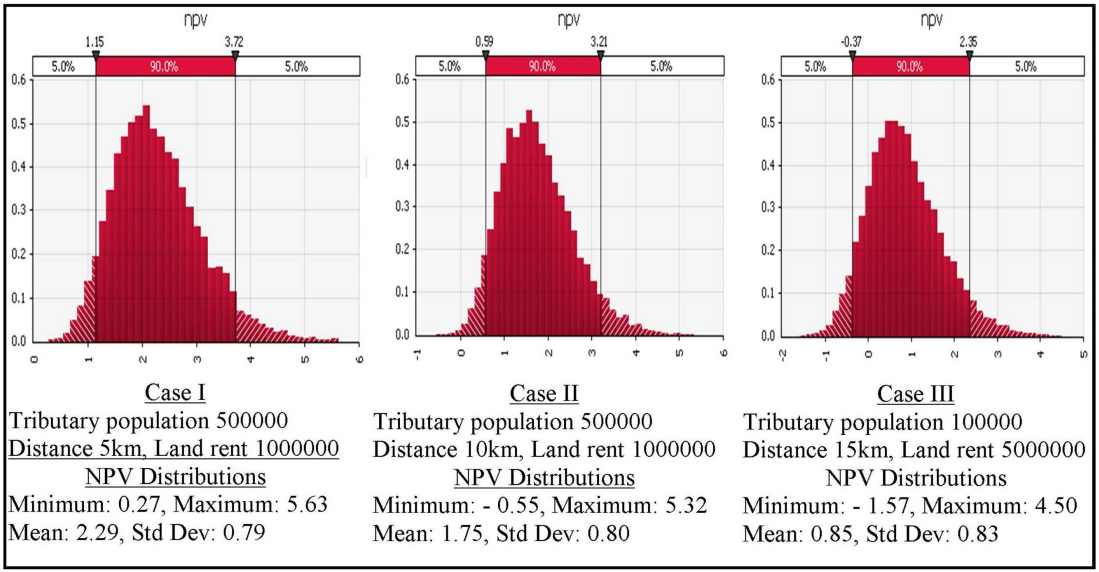

Fig. 3. Histograms for typical NPV simulations

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