

## ***Interactive comment on “Domestic water consumption pattern by urban households” by Amarasingam Narmilan et al.***

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Reviewer 1 1. Why don't author use linear regression, for example? I strongly suggest authors do extra analysis, i.e. linear regression, to have stronger results. Models Based on Linear Regression

Table 2 R R Square Adjusted R Square Std. Error 0.982 0.965 0.962 23.8504

Linear regression analysis was conducted to examine the effects of the potential predictors on per capita water consumption in urban households. The model was statistically significant as household size, age, education level, number of taps and household income showed statistical significance ( $p \leq 0.05$ ) and together they accounted for 96.5% of the variation in per capita water consumption in the wet season ,  $R^2 = 0.965$ ,  $F =$

C1

375.813. 2. The draft structure is also poor, e.g., start the sub-section by a table. I suggest accepting this draft ONLY if they can improve the manuscript significantly. Draft structure changed. 3. Abstract: Please state clearly what the benefits are in the abstract. Stated the benefit.

4. Keywords: change "efficiency" to "water efficiency". Changed 5. Methods: 1. Please put the map of the location. Included

6. Please elaborate all statistical analyses you did in the methods section, e.g. correlation test, PCA, etc. Statistical Analysis Quantitative data on socio-demographic and water consumption characteristics were entered into the Statistical Package for Social Sciences (SPSS 25.0). Correlation and linear regressions were used to examine the relationships between per capita water consumption and the potential predictors The predictors were chosen based on the review of the results of studies conducted by Thompson et al.,(2001) and House-Peters and Chang, (2011).. A linear regression analysis was used to determine the predictors of water consumption. Each variable was entered in a sequence and its value was assessed with statistical significance set at  $p \leq 0.05$ . 3. A Simple random sampling technique was followed to select households -> Please elaborate what you mean by "simple". Removed the word 4. How did you come up with "75 households belonging to the 20 urban area in Batticaloa District in Manmurai Pattu"? 75 households are not enough to represent an urban area with, let say, 1000 households. if the total population is thousands, then 75 is too small. A systematic random sampling was performed to select the sample households. The total number of households in the urban area was 300. A random number (K) was determined for the first selection. Desired sample size was estimated from the following equation.  $K = \text{Population size} / \text{Sample size}$  The estimated desired sample size was 75. Each household from the Manmurai Pattu was given a unique identification number. From the list of households every 300th houses were selected and the data were collected. 5. How did you come up with the demographic variables used in the analysis? for example, why did you choose income and not other things? Please support

C2

with literature. Cited under the statistical analysis sub section Results and discussion: 1. Never start a new section or sub-section by a table or picture. Always start by sentences/paragraph. Please edit the whole sub-section! Edited, Tables were replaced after the text.

2. Please include mean/average, min, max in table 1, if applicable. Variable Mean Max Min Std. Dev Age (Years) 51.41 72 31 11.3 Education (Years) 3.01 4 0 0.86 Average income (Rs/ month) 36,045.47 80,000 7,000 18,042.25 Family size 4.03 7 2 1.14 Number of taps 5.88 10 1 2.34 4. You don't need to show the table of Pearson correlation between 2 variables. write only the correlation value and p-value to shorten the draft. Please edit all tables with Pearson correlation! All the tables were edited Age of household members It is shown that the total domestic water consumption is negatively correlated with age and the correlation coefficient was -0.944 (p<0.01). Living standards Total domestic water consumption is positively correlated with living standards as p<0.01 (Table 2). Income level It is shown that the total domestic water consumption is positively correlated with income level and the correlation coefficient was 0.968 (p<0.01).

Education level The education level also influences the water consumption in a household. It is shown that the total domestic water consumption is negatively correlated with education level and the correlation coefficient was -0.873 (p<0.01) (Table 4). Number of taps The number of taps also influences the water consumption in a household. Table 5 shows that the total domestic water consumption is positively correlated with the number of taps and the correlation coefficient was 0.951 (p<0.01).

Household size Table 6 shows that the total domestic water consumption is positively correlated with household size and 0.95 (p<0.01).

5. Please improve all pie charts, they are in bad quality, maybe use a normal chart without variation; improve also chart in Figure 3.

6. There is no data that support all sentences in no. 2 (age of household members).

C3

This looks like empty discussion, without supporting data/results. Supporting data was included.

Conclusion: 1. Never write the software used in the conclusion! Edited 2. What is/are the implication of this study?? These findings would be useful in managing the water demand and help to reduce the water consumption in urban areas.

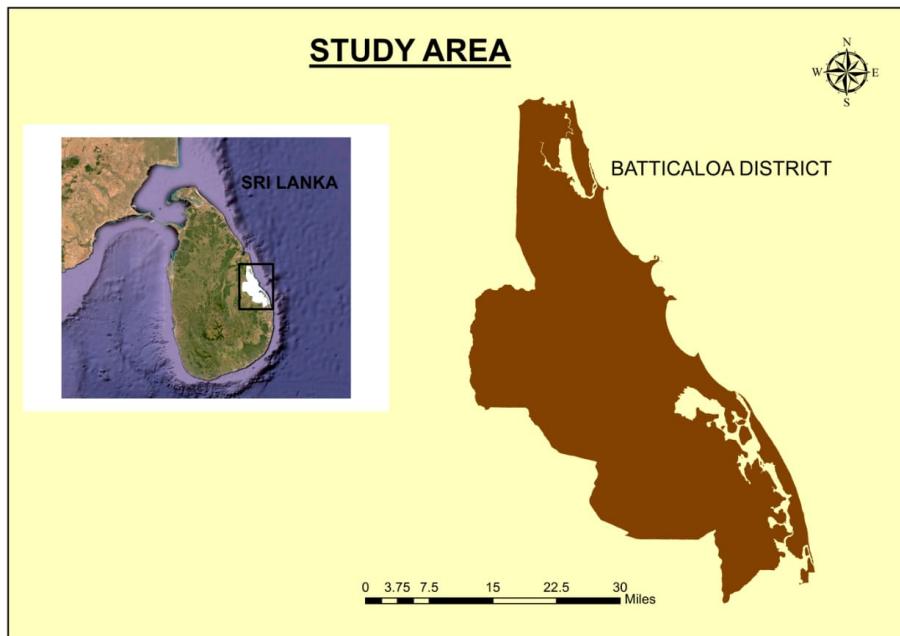
Please also note the supplement to this comment:

<https://dwes.copernicus.org/preprints/dwes-2020-32/dwes-2020-32-AC1-supplement.pdf>

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Interactive comment on Drink. Water Eng. Sci. Discuss., <https://doi.org/10.5194/dwes-2020-32>, 2020.

C4



**Fig. 1.** Map

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