

Review of: "Impact of Environmental Education on the Knowledge and Attitude of University of Benin Students towards Waste Segregation"

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Potential competing interests: No potential competing interests to declare.

Dear Author,

Thanks for your effort of putting into black and white an issue that is far from being popular in scientific journals, as is the situation of environmental sustainability in the Sub-Saharan African countries. I will try not to fall in eurocentric biases but I can't promise it, please beg my excuses in advance.

I read your article and also some of the precedent reviews, in order to avoid repetitions. In particular, Siba Theodore Koropogui's one is pretty detailed and interesting, please take a look on it <https://www.qeios.com/read/O75TR9>. I will focus in three main areas where, in my humble opinion, you can improve your paper. Taking it into consideration could mean not only a refinement, but maybe a re-design and re-writing of the article. However it could seem a major effort, it is not, as you have a purpose (studying and recommending actions to improve the current state-of-art of waste management in Benin, Nigeria, through the future educators and leaders) that fills a gap (environmental studies in Sub-Saharan Africa) and the field study to confirm or not, your hypothesis.

First comment is about your hypothesis and the research questions. If you want to prove the relevance of environmental education in the attitude towards waste management of University students, it is because they will influence, with their actions and example, the overall society. This proposition (not yet hypothesis) must be endorsed with previous literature, and, luckily, with a model to guide the research. You should order the literature to sustain your proposition, and try to focus in recent studies that have covered, just about, a context similar to the one of Nigeria, or are closer to it (f.i. Latin American countries) than the European or North American ones. Specially, I will try to endorse the leading role of University students (and the overall university community) in changing the habitus and defining the field (sociologists as Bourdieu use to be a good help in this cases). On the other hand, you can focus in educational or legislation efforts promoted by national, regional or city governments. Context matters and when talking about waste the relation with Earth in rural communities is sometimes very illustrating in what we in modern times named as Circular Economy. Urban people have lost this idea of using and reusing everything, so, you find in the area of urban waste management room to improve. And here, the link among environmental consciousness, and waste management, must be endorsed. This is not simply to say (in the conclusion "The results of this study show that waste segregation is a practicable and sustainable approach for more effective solid waste management in communities, especially in the university environment, fostering a cleaner

environment"... and? what about disposal of these "separated" rubbish?. Previous studies show that multiple actions must be done to ensure that segregation in the origin (households) is really giving that result. Therefore, you should explain better why are you focusing in the education and attitude of students to this part of the process. In any research, the reason why it is relevant for the science, and for the community, is important and must be well fundamented.

We do literatures review to guide our research, we want to go a step ahead of current knowledge. Seminal studies must be complemented with recent ones, favouring those that cover similar contexts.

Second, once you have stated the main objectives, propositions or research question, is time to word them as hypotese. Here you need a model, that can be the one of the Planned Behavior, but why?. An intention (I) to do something is not yet a behavior but you can "hypothesize" that a good knowledge of something gives a better perceived behavioral control (PBC), and this will influence an intention to act. But in addition to PBC, Intention is influenced by the subjective norm (SN) and the personal attitude (PA) of the subject. Concentrating "only" in PBC is risky, specially when one can suspect that PA towards environmental protection of Health, Safety and Environmental Education (HSE) students is (or could be) higher than the one of Human Kinetics. Thus, your sample can be biased and therefore, a t-test of the attitude (Table 6) of students before the experiment is necessary. Also, it is fair to understand how the experiment works. What I have understood is that a group of student receives education in waste management (HSE) and the other (HK), not. Measuring the importance of that in terms of hours, for instance, is important. When you see the evolution of Attitude (table 6) of Experimental group from 14.24 to 21.30 (maximum scoring is ?) and Control group from 13.83 to 17.30, something has happened in both of them, that has raisen their attitude towards waste segregation, in the first case more than in the second. Reasons (tertiary education, as you state in the Discussion of findings) could be if you compare pre-education (test) attitude of HSE and HK students, to demonstrate that they start just about from the same level.

Then, variables and its measures matter. If you measure knowledge with a scale, are there different components of this scale? If it is a scale, where the items come from? Is it consistent and coherent (Crombach alpha and so on). Take some time to explain that, it is important (you can offer details in an addendum). Also, techniques do matter. I challenge the assumption of normality in convenience samples, as yours, and I reccomend to use some non-parametric tools to complement the t-test. Furthermore, if you want to link knowledge with attitude to waste management, a kind of relational technique, for instance a Chi square test, could be useful, but... again, explain your variables, discuss the measures, and then, justify the technique.

Explain the model (your guide), the variables and their measures. Take time to discuss the sample and present the tool (questionnaire). Discuss the most suitable technique and, or, compare results among them.

Finally, when reading the Discussion of Findings and specially the Conclusions, I felt that you were endorsing your initial thesis. This is not the place to do that, here what we do is a fair and honest comparison with other studies, explain what has been found, and what has not, and state the limitations of our study (all studies have limitations). In your case, you offer some reccomendations for policy makers, educators and societal players. Again, anything you offer as a result of your findings must be linked with it; I am afraid that is not the case of some of them, it has been difficult to see where is the basis for reccomendations 3 to 6. This does not mean that they are not important, but, if they are the result of

comments with other experts, your own observations, or any other source, you better explain it.

Conclude with honest, fair and sensitive summary of your findings. State what has been your contribution, your learnings. Do not hesitate to point out limitations and failures. And when offering suggestions, be clear about its origin.

I hope this helps you, regards.