



DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE MALAYSIAN HOUSEHOLDS' INTENTION TO PRACTICE SOLID WASTE SEGREGATION-AT-SOURCE

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*Peer-review under responsibility of 3rd Asia International Multidisciplinary Conference 2019 editorial board
(<http://www.utm.my/asia/our-team/>)*

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Research Highlights

The growth of public awareness about environmental concerns is triggered since the late 1960s. Today, it becomes an international highlight on the importance of protecting the natural environment by developing the environmental consciousness and awareness to society. Besides that, there is an increasing trend in the daily generation of municipal solid waste due to the human consumption patterns lately. Therefore, the best way to manage this public health issue should be started from the waste segregation-at-source. Ultimately, by realising the scarce knowledge and research within the field, this research can provide a platform to investigate the knowledge gap and its literature by building a good dataset with respect to the intention to practise solid waste segregation-at-source for the Malaysian government bodies, consumers, and non-governmental organisations. So that, they can raise their environmental concern and inculcate their sense of responsibility to protect the cleanliness of the environment among Malaysian households.

Research Objectives

Malaysia is a transition nation which is now experiencing fast population growth (Begum, Siwar, Pereira, and Jaafar, 2007; Bong, Ho, Hashim, Lim, Ho, Tan, and Lee, 2017), rapid changing lifestyle (Sakawi, 2011), great urbanisation (Manaf, Samah, and Zukki, 2009; Bong et al., 2017) along with aggressive economic development (Budhiarta, Siwar, and Basri, 2012) and consumption rates (Abas and Wee, 2014). As a result, these changes at the national level have raised several severe environmental concerns (Jeong, Jang, Day, and Ha, 2014) in terms of energy security, volume rate of municipal solid waste (Murad and Siwar, 2007) and daily solid waste generation in Malaysia. Unfortunately, the research on solid waste segregation-at-source receives less attention due to several underestimating factors. Therefore, this research is aimed to investigate the relationship between households' attitude, descriptive norm and injunctive norm with the intention to practise solid waste segregation-at-source and to ascertain the mediating effect of environmental concern and moderating effect of environmental knowledge between households' attitude, descriptive norm and injunctive norm with the intention to practise solid waste segregation-at-source.

Methodology

The instrument was set in both open and closed format which consists of eight sections. Section A(I), was on respondent's particulars, Section A(II), was general questions on solid waste segregation-at-source, Section B, C, and D comprised of measurement to measure the independent variables (namely attitude, descriptive norm, and injunctive norm), Section E and F, were for environmental concern and environmental knowledge which act as mediating variable and moderating variable in this research respectively, and Section G was the measurement for dependent variable, i.e. intention to practise solid waste segregation-at-source. Meanwhile, a good measurement must meet the tests of validity and reliability. Hence, the instrument was then validated from four main aspects: face validity, content validity, convergent validity as well as discriminant validity. After the validation process, the pre-test was conducted from 1st January 2019 to 15th January 2019. In the pre-test section, a total of thirty Malaysian households regardless of races, religions, and ages were chosen randomly to complete the bilingual self-administrated instrument. There is a 100.0 per cent response rate in which the researcher received good feedback from the surveyed respondents. Prior to the actual data collection, all the statements have been adjusted after reliability and validity test.





Results

The reliability of all constructs has been tested by using composite reliability test in order to assess the inter-item reliability for each of the multi-item constructs (Vellido, Lisboa, and Meehan, 2000). Composite reliability is a closer approximation under the assumption that the parameter estimates are accurate (Chin, 1998). It will provide an evaluation of how accurate and reliable the measures are before proceeding to the next stage of data analysis. As a result, composite reliability statistic was considered as a more accurate measurement to be computed by almost all Structural Equation Modelling (SEM) and Partial Least Squares (PLS) software (Fornell and Larcker, 1981).

The composite reliability coefficients for the six constructs in the current research instrument were found in the range of 0.779 to 0.940. For preliminary research, composite reliability coefficients with the range of 0.50 to 0.60 were still tolerable as the minimum requirement (Peterson, 1994) for further data analyses. As a conclusion, it can conclude that the internal consistencies of all constructs are acceptable for actual data collection since each reliability testing exceeds the suggested threshold of 0.70 (Christie and Higgins, 2012; Nunnally and Bernstein, 1994). Hence, the measurement instrument for this present research is reliable.

Findings

Some modifications were considered to further strengthen the instrument, especially in relation to the measurements that did not exceed the suggested threshold of 0.70. After the validation and composite reliability testing, the final version of the instrument consists of eight sections: respondent's particulars (11 items), general questions on solid waste segregation-at-source (7 items), attitude (14 items), descriptive norm (12 items), injunctive norm (12 items), environmental concern (three sub-parts and 12 items), environmental knowledge (25 items), and intention to practise solid waste segregation-at-source (8 items). The instrument can further be used to examine other similar research areas such as sustainable consumption, recycling as well as solid waste management.

Acknowledgement

The authors would like to thank all the residents, enumerators, and any other parties who are involved directly or indirectly in the data collection.

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