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An Exploratory Factor Analysis of Climate Friendly Purchasing Choices

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**By Susan E. Gutierrez, Fred Vincent Y. Margallo,
and Zihan Gong**

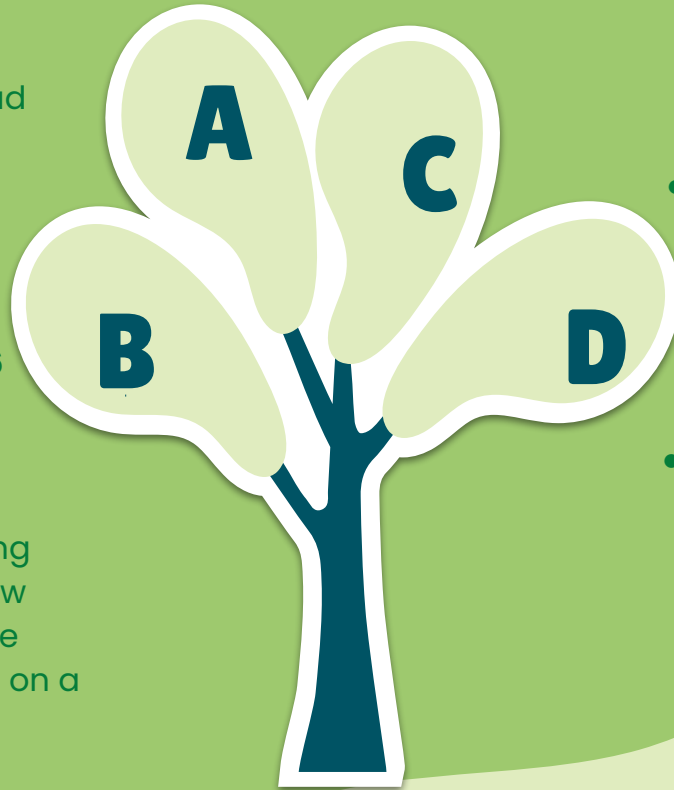


Introduction

- Climate change is negatively affecting the environment and all its inhabitants.
- People's increased awareness have made them more willing to adopt more climate friendly purchasing choices.
- The Climate Change Action Inventory measures how often individuals take actions that can reduce climate change. We focused on the Climate Friendly Purchasing Choices Domain.
- We conducted an exploratory factor analysis of the Climate Friendly Purchasing Domain to help us examine the factor structure.



Method



- 500 Mturk workers were recruited as research participants from among Cloud Research.
- After filtering out 15 climate change deniers and 24 multivariate outliers, 461 participants remained, between the ages of 19 and 76 ($M = 39.61$, $SD = 11.86$).
- The Climate Friendly Purchasing Choices Domain measures how often participant's take climate change actions using 14 items on a nine-point frequency scale

- All participants completed the Climate Change Action Inventory and demographic questions online.
- We determined the number of factors based upon the scree test, parallel analysis, and minimum average partial test.
- The best rotation that came closest to the ideal of simple structure using the criteria of number of complex items, hyperplanar count, and correlation among the factors. We selected the three-factor solution with a direct oblimin rotation.

Results



Table 1


Factor Analysis of the Climate-Friendly Purchasing Choices Domain

Item	Factor		
	1	2	3
8. Choose products that have less impact on climate change	.95	.00	-.02
6. Choose products that have less packaging	.91	-.04	.01
7. Choose products that are made locally	.89	-.09	.07
11. Encourage others to choose climate-friendly products	.56	.40	.05
12. Problem solve how to reduce the impact of purchases on climate change	.52	.44	.04
14. Give time or money to organizations working to reduce the impact of purchases on climate change (e.g., environmental regulations, environmental certifications, compostable packaging)	.01	.97	-.02
13. Give time or money to organizations working to reduce purchases (e.g., bike-share programs, book/music libraries, tool-lending libraries, clothing exchanges)	.02	.93	.01
5. Donate to charity in someone else's name (rather than buying a gift)	-.02	.78	.20
10. Encourage others to buy less	.41	.44	.12
2. Use borrowed, rented, or digital copies of books, music, and movies (rather than buying physical books, CD's, and DVD's)	-.02	-.18	.90
4. Buy used (from consignment stores, thrift stores, garage sales) rather than new	.00	.15	.76
1. Repair things rather than buying replacements	.03	.06	.76
3. Use borrowed or rented tools and equipment (e.g., laptops, skis, dress clothes, musical instruments, pressure washers, carpet cleaners, party tents) rather than buying them	.10	.21	.62
9. Donate or sell your old possessions (rather than throwing them away)	.22	.27	.46
Factor Intercorrelations	1	2	3
Factor 1	1.0	.59	.59
Factor 2	.59	1.0	.53
Factor 3	.59	.53	1.0


Note. Salient factor pattern matrix coefficients are in boldface. No items were reverse-scored for this analysis. Factor 1 = Purchasing Eco-Friendly Products. Factor 2 = Indirectly Reducing Purchasing Impacts. Factor 3 = Utilizing Secondhand Items.




Discussion




One limitation of our study was the lack of generalizability to other populations.



Attempts to reduce climate change by altering purchasing habits could target any one of these three areas.



The three factors had moderate to high intercorrelations, demonstrating that these three areas are highly related.



Future research could explore which factors best predict these three types of climate-friendly purchasing choices.



**Thank
You!**