

# The Multifaceted Nature of Climate Change Trust: A Confirmatory Factor Analysis Study

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## INTRODUCTION

- The adverse impact of climate change has been increasing and urgent action is needed.
- Misinformation about climate change can cause confusions in people and lead to hesitations in pro-environmental actions.
- Thus, it is important to understand people's trust regarding climate change.
- The Climate Change Trust Scale (CCTS) is developed by Barchard et al. (2022) to measure people's trust for six social groups' statements and actions about climate change.
- This study aims to understand climate change trust by exploring the factor structure of the CCTS using CFA.

## METHODS

- 500 CloudResearch approved participants were recruited from Amazon's Mechanical Turk (MTurk) in the United States. 15 climate change deniers were removed from the data set. 14 outliers were identified using the Mahalanobis distance.
- We were left with 471 participants.
  - Gender: 268 male, 201 female, and 2 non-binary
  - Age range: 19 to 76 (M = 39.75, SD = 11.86).
- We conducted our analysis in R (4.3.1.) using the lavaan package.
  - We constructed three CFA Models to find the best fitting model: six-factor, two-factor, and one-factor.

## RESULTS

- Six-factor model fits the data best. See Table 1.
  - CFI and TLI were > .95 (excellent fit)
  - RMSEA= .01, lowest and below the criteria (excellent fit)
  - SRMR=.04, lowest and below cut-off (acceptable fit)
- Mean factor scores.
  - Scientists most trusted

## DISCUSSION

- People trust different groups differently regarding climate change.
- Our participants trust scientists the most and business leaders the least.
- Limitations
  - Participants are only from United States
  - Participants are less diversity in culture and racial background

**Table 1**  
*Fit Indices Of The Three Models*

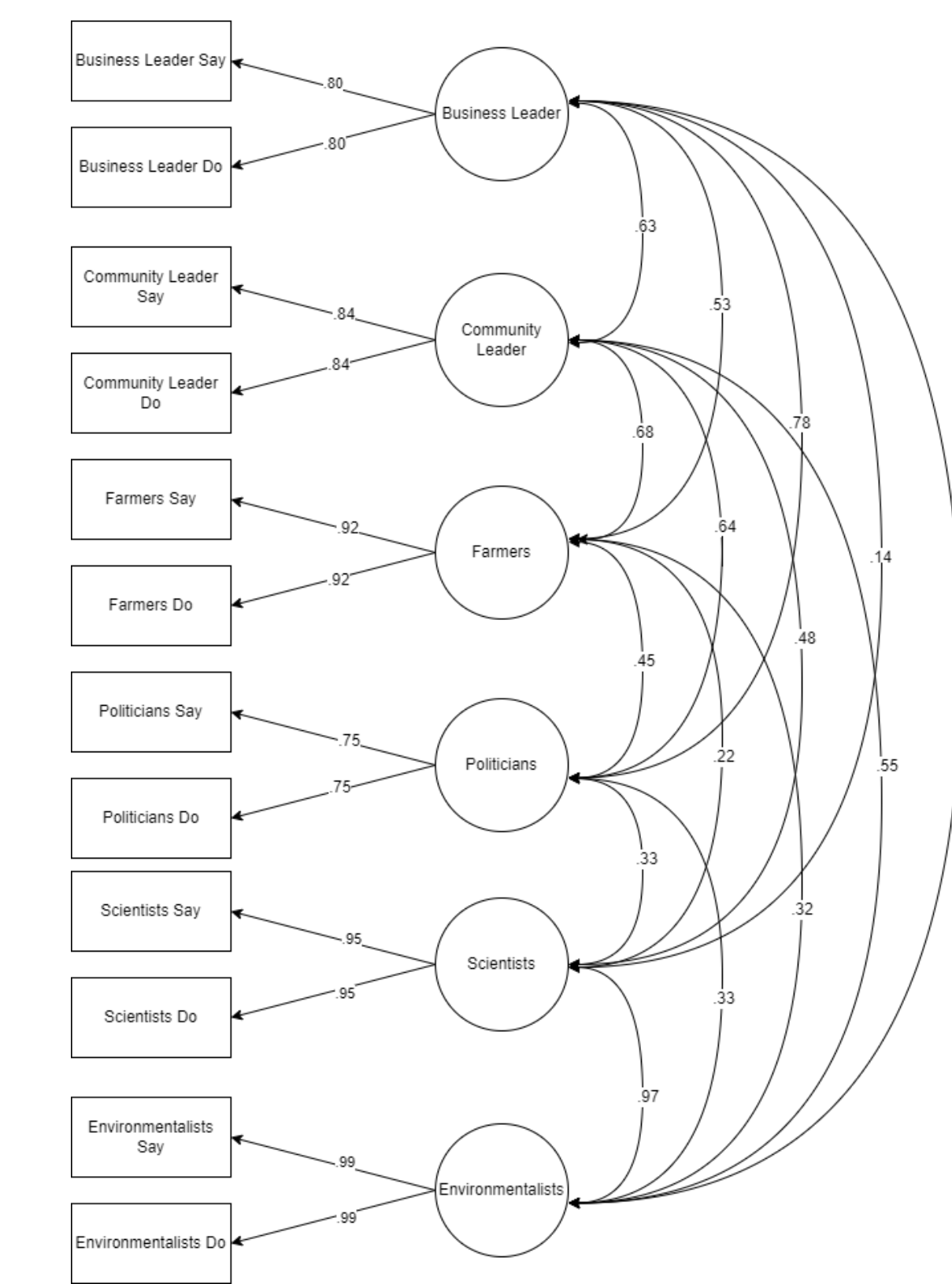
Confirmatory Factor Analysis Models	CFI	TLI	RMSEA	SRMR
Six-Factor Model	<b>.999</b>	<b>.999</b>	<b>.01</b>	<b>.04</b>
Two-Factor Model	.83	.79	.16	.18
One-Factor Model	.83	.79	.16	.18

Notes: These are the fit indices for our models. For CFI (Comparative Fit Index),  $\geq .90$  for it to be acceptable or  $\geq .95$  for it to be excellent (Hu & Bentler, 1999). For TLI (Tucker-Lewis Index),  $\geq .90$  for it to be acceptable or  $\geq .95$  excellent (Schumacker & Lomax, 2004). While RMSEA (Root Mean Square Error of Approximation)  $\leq .08$  to be acceptable or  $\leq .05$  to be excellent. Lastly, SRMR (Standardized Root Mean Square Residual)  $\leq .08$  for the model to be acceptable (Byrne, 1994).

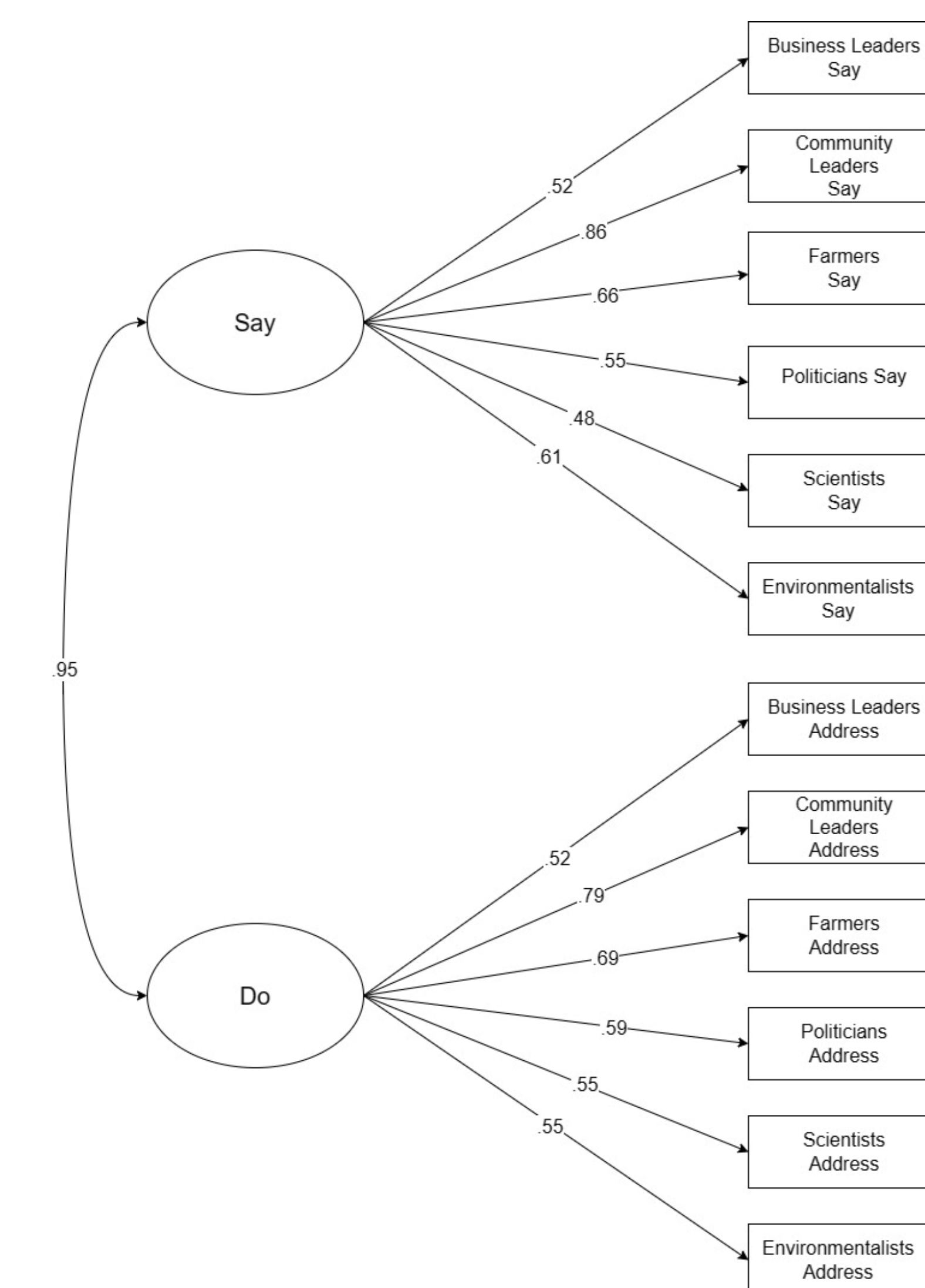
People trust certain groups of people, like scientist, the most regarding climate change information.



Six-Factor Confirmatory Factor Analysis Model



Two-Factor Confirmatory Factor Analysis Model



One-Factor Confirmatory Factor Analysis Model

