

Who Do People Trust When It Comes to Climate Change? A confirmatory Factor Analysis

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Introduction

- The scientific community agrees that climate change is largely due to human activity and poses great danger to both ecosystems and human societies. If we fail to adequately address its causes and effects, its severe effects may become catastrophic and/or irreversible. Over the next 6 years, 50% reductions in greenhouse gases are needed.
- However, the public's view on climate change has been polarized. Not all people trust scientists and not all trusted sources endorse urgent climate action.
- The current study examines people's trust for different social group's remarks about climate change and these groups' capability to address climate change.

Method

Participant

- 500 US MTurk workers were recruited through CloudResearch.
- 15 climate change deniers were excluded.
- 14 multivariate outliers (with Mahalanobis distance's having $p < .001$) were excluded.
- 471 participants remained, including 201 female, 268 male, and 2 non-binary.
- Ages ranged from 19 to 79 years ($M = 39.76$, $SD = 11.96$).
- 390 participants identified as Caucasian/White, 41 as African American/Black, 24 as Asian, 4 as Native American, and 12 as other.

Measures

- The Climate Change Trust Scale (Barchard, Hoffman, Okagawa, & Odents, 2021) assesses trust of business leaders, community leaders, farmers, politicians, scientists, and environmentalists
 - The groups' remarks regarding climate change
 - The groups' ability to address climate change's negative effects

Procedure

- Participants were paid \$3 to fill out a 10-minute online questionnaire.

Data Analysis

- 1-, 2-, and 6-factor models were examined using R (4.2.2.) with the *lavaan* package.
- To ensure the identifiability of the 6-factor model, we constrained loadings to be equal.
- Because our Likert-type data violated the assumption of normality, we estimated models using Diagonally Weighted Least Squares (DWLS).
- To access the model fit, we used the Chi-Square test (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).
- For each of the six groups, we calculated mean trust as the average of the two trust items.

Results

- The one- and two-factor models fit poorly, while the six-factor model had excellent fit. See Table 1.
- Participants trust scientists and environmentalists the most, business leaders and politicians the least. See Table 2.

Discussion

Implication

- If a person trusted what a social group says about climate change, they tended to believe this social group is capable of addressing climate change as well. However, each individual was likely to trust some groups more than others.
- Our participants trusted scientists and environmentalists the most. These two groups in particular should lend their expertise and voice to fight the climate crisis.
- Each group was trusted by some participants. Therefore, influential people from all social groups should use their influence to spread awareness of climate change and advocate for pro-environmental actions.

Table 1
Fit-Indices of the Three Models

Fit-Indices/Models	6 Factor	2 Factor	1 Factor
χ^2	0.35	0.00	0.00
CFI	.999	.831	.831
TLI	.999	.790	.794
RMSEA	.012	.160	.159
SRMR	.041	.178	.178

Table 2
Mean Scale Scores of the Social Groups

Business Leaders	Politicians	Community Leaders	Farmers	Environmentalists	Scientists
1.83	1.94	2.40	2.71	3.86	3.99

Figure 1
One-Factor Model

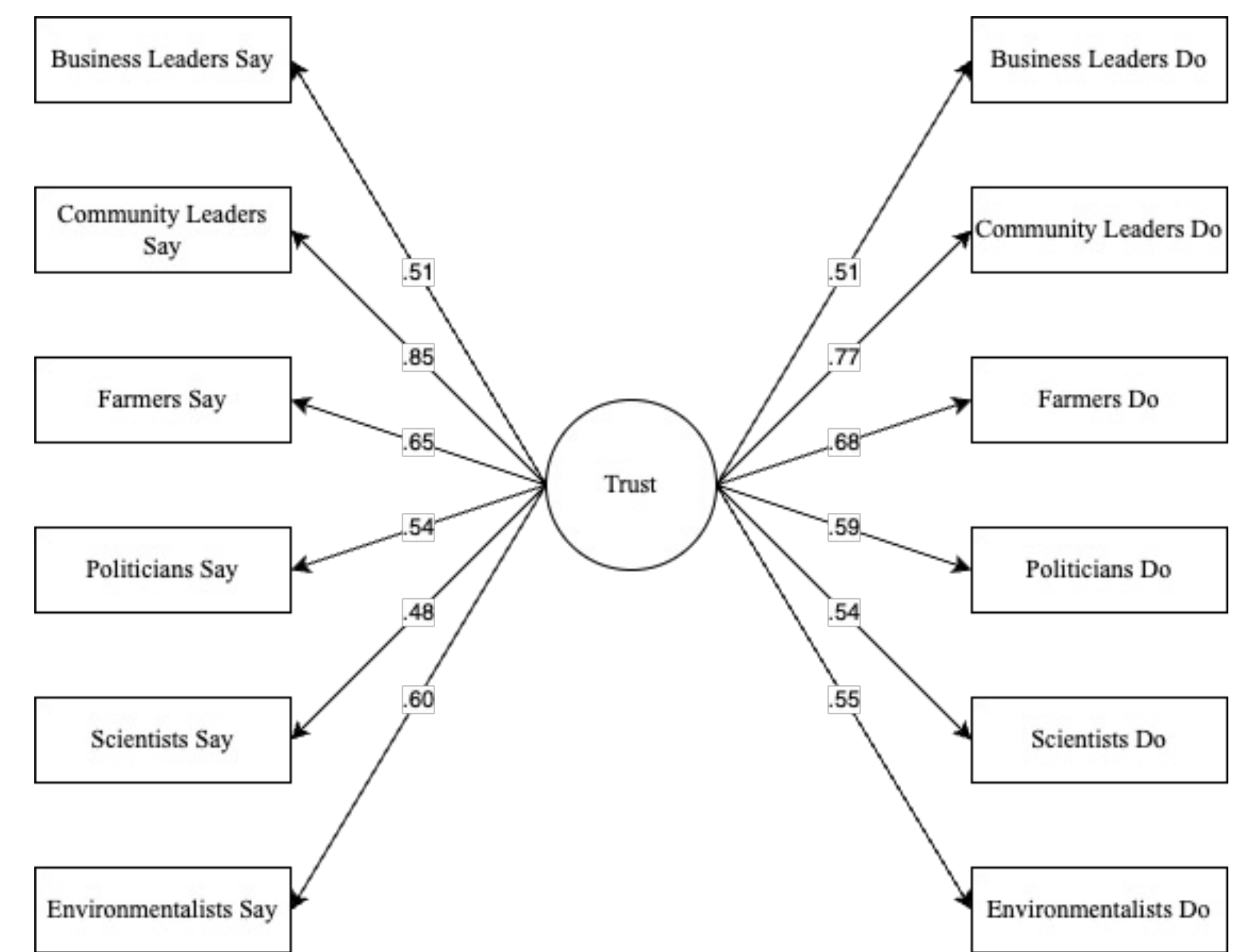


Figure 2
Two-Factor Model

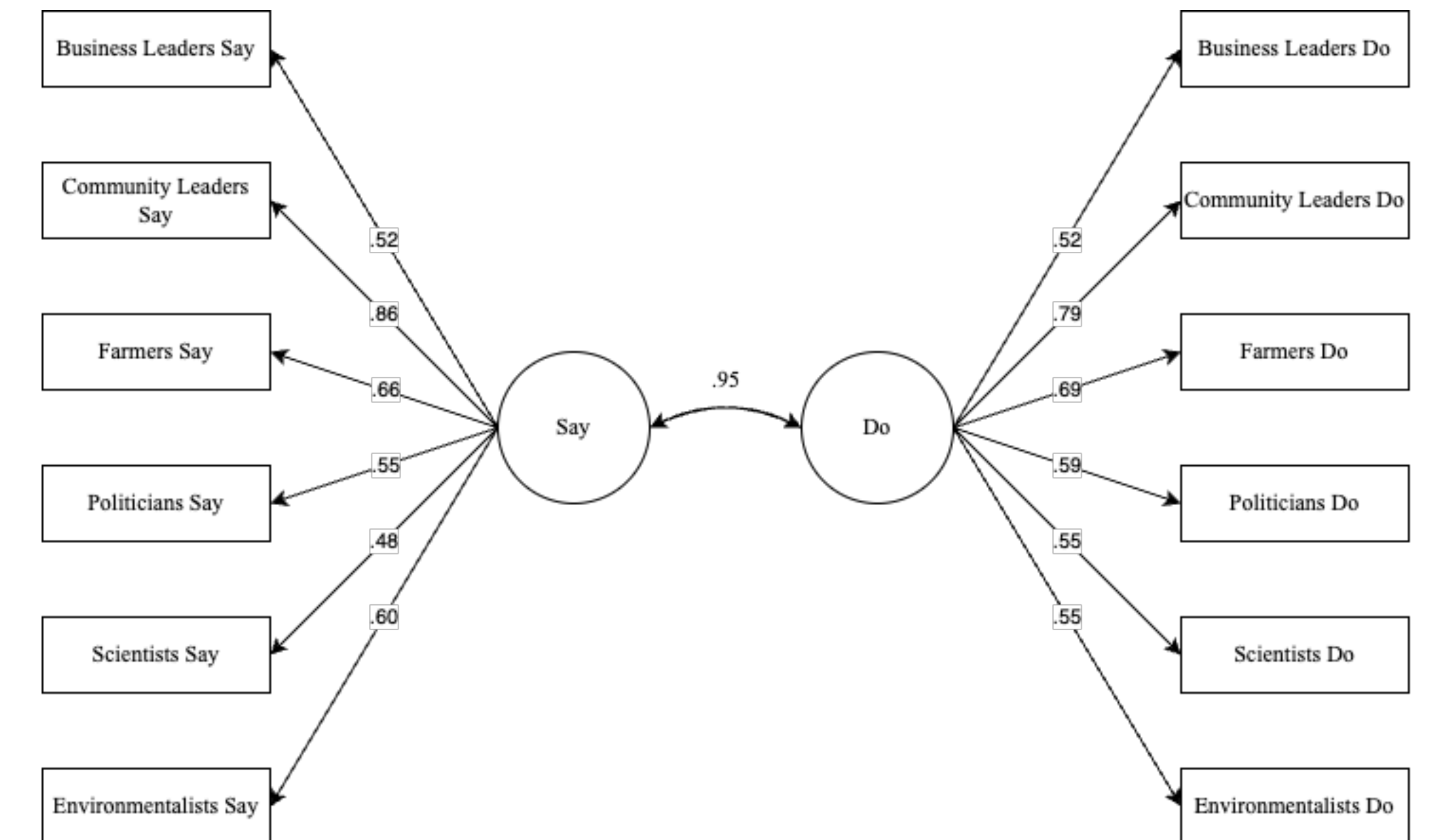
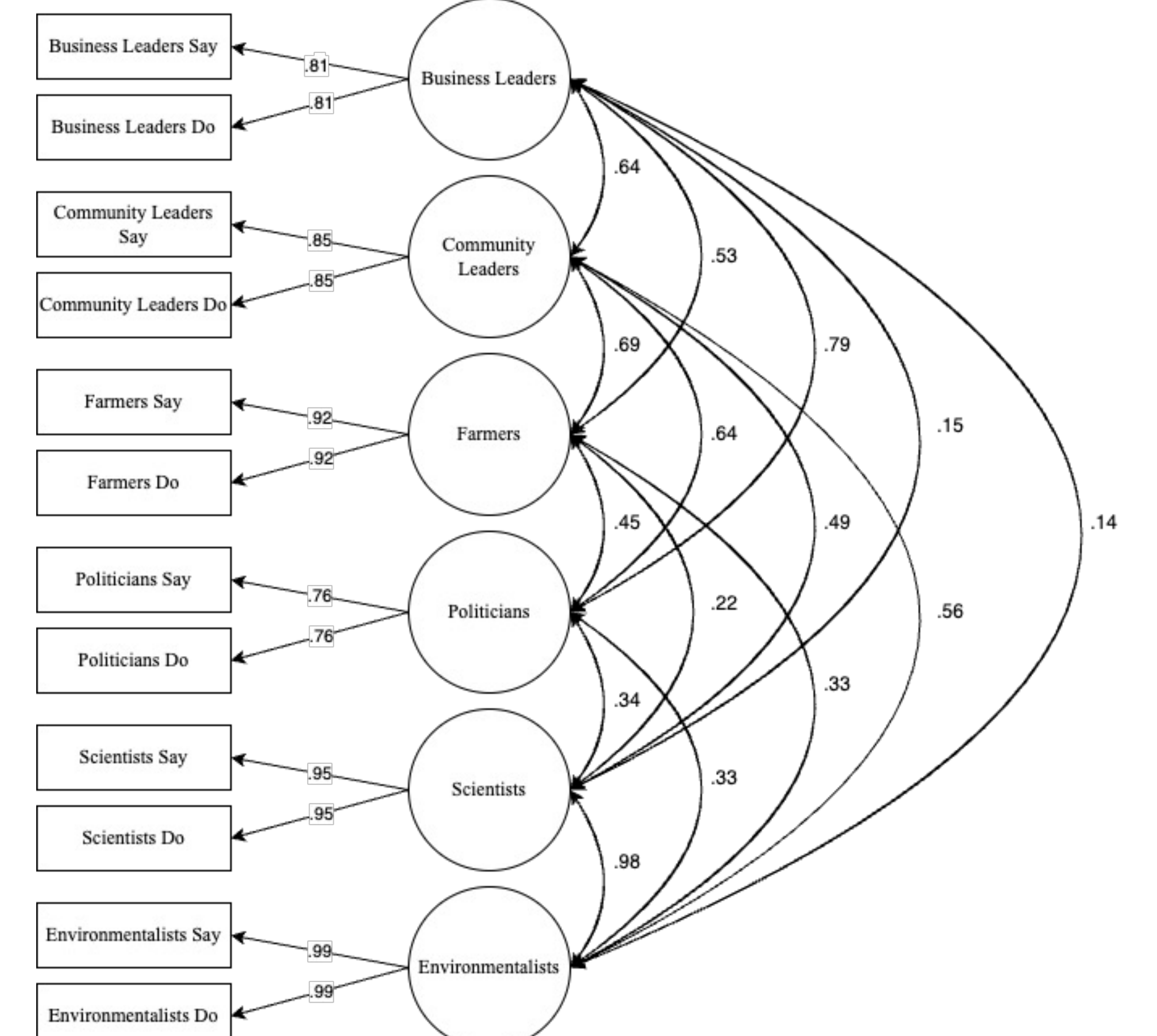


Figure 3
Six-Factor Model



Regarding climate change,
each social group is trusted
by some people, but
scientists are trusted the most.