

International Development and Global Conflict Policy Lab
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Individual data analysis assignment – Yuna Baek

This memo analyzes the correlation between two dependent variables of the Afrobarometer Wave VIII dataset. The dependent variables of interest are Q550A and Q551A, where Q550A asks respondents to rate how essential each pillar is in human dignity, and Q551A asks respondents to select a main pillar of human dignity. This memo focuses on the following four pillars: (1) Equality under the law; (2) Absence of corruption; (4) Ability to freely choose political leaders in elections; (6) Basic civil rights are guaranteed. Both variables are ordinal, and Spearman correlation has been conducted to observe correlation between the two dependent variables, as well as validity in creating a summary index to evaluate the validity in grouping pillars together. In order to investigate further, several independent variables have been identified to conduct a preliminary Spearman correlation analysis in addition to the dependent variables.

Distribution and descriptive summaries

The distribution of responses in Q550A shows that respondents generally consider all four pillars to be essential, with basic necessities (42.1%) ranked highest, followed by equality under the law (40.5%), and free election choice lowest at 32.9% (Chart 1 in Appendix). However, the small range (9.2 percentage points) suggests respondents see these pillars as interconnected rather than distinct constructs of human dignity. In Q551A, when selecting a single most important pillar, basic necessities remain the top choice, but the order shifts (Chart 2). The lack of alignment between Q550A rankings and Q551A choices suggests that while all pillars are valued, there may be external factors that influence prioritization when respondents must choose only one.

Spearman Correlation Analysis between Q550A and Q551A

Pillar		Sample Size (n)	Spearman Correlation (p)	df	p-value	Significance	Effect Size
df...1	Equality under law	6607	0.096	6605	0.0000	*	0.096
df...2	Absence of corruption	6603	0.069	6601	0.0000	*	0.069
df...3	Free election choice	6596	0.039	6594	0.0014	*	0.039
df...4	Civil rights	6605	0.011	6603	0.3603		0.011

To examine whether respondents' ratings of pillar importance in Q550A correlate with their selection of a single pillar in Q551A, a Spearman correlation analysis was conducted. The results reveal that all correlations between the pillars in Q550A and the single-choice responses in Q551A are weak ($p < 0.1$), indicating that how respondents rank a pillar's importance does not strongly predict whether they select it as the most important. There are statistically significant

correlations for equality under the law ($\rho = 0.096$), absence of corruption ($\rho = 0.069$), and free election choice ($\rho = 0.039$). However, the effect sizes remain small. Meanwhile, civil rights ($\rho = 0.011$, $p = 0.3603$) do not have a statistically significant relationship. These weak correlations suggest that respondents do not strongly distinguish between different pillars, reinforcing the minimal variation observed in the Q550A distributions. The findings indicate that other external factors likely shape how respondents choose a single most important pillar beyond their general perceptions of importance.

Correlation Using Summary Index among Dependent and Independent Variables

Given the moderate correlations among the four pillars ($\rho \approx 0.4\text{--}0.5$), a summary index was constructed using mean aggregation. The index is moderately to highly correlated with individual pillars ($\rho \approx 0.66\text{--}0.81$) but has a weak correlation ($\rho = 0.07$) with Q551A, reinforcing that perceived importance does not strongly predict pillar selection. To evaluate the summary index's effectiveness, a preliminary analysis was conducted with identified independent variables (Table 1 in Appendix). Chart 4's correlation matrix suggests weak relationships, questioning the utility of a summary index for dependent variables. Further refinements may improve the grouping of independent variables.

A key issue in aggregation is the scaling and direction of independent variables. According to Table 2 in Appendix, variables like Q303A and Q303B (political leadership perceptions) differ in scale (three vs. four points), requiring standardization before inclusion. Further analysis, such as PCA or weighting, may determine whether certain variables hold more conceptual weight. Potential biases also affect results. As Q550A and Q551A were randomized, only half the sample responded to each, limiting statistical power to analyze its correlation with independent variables such as political leaders that show 18.5% missingness after accounting for the randomized sample (Table 1). Additionally, social desirability bias may inflate support for pillars like equality under the law, and cultural differences in interpretation—particularly for concepts like corruption—could introduce inconsistencies.

Moving Forward

The analysis suggests that while respondents value all four pillars, they do not differentiate strongly between them, resulting in weak correlations between Q550A rankings and Q551A choices. The summary index effectively captures shared perceptions across pillars but does not strongly predict pillar selection (Q551A), suggesting it is useful for analyzing overall perceptions but not for explaining individual prioritization. This supports the hypothesis that dignity is multidimensional and these pillars cannot be reduced into a single metric. Further research, including regression models and PCA is needed to better understand how people conceptualize human dignity. To present findings effectively, correlation heatmaps (ggplot) will be used to illustrate correlations and scatter plots with regression lines.

Appendix

Chart 1: Q550A - Distribution of Responses for Different Pillars of Human Dignity

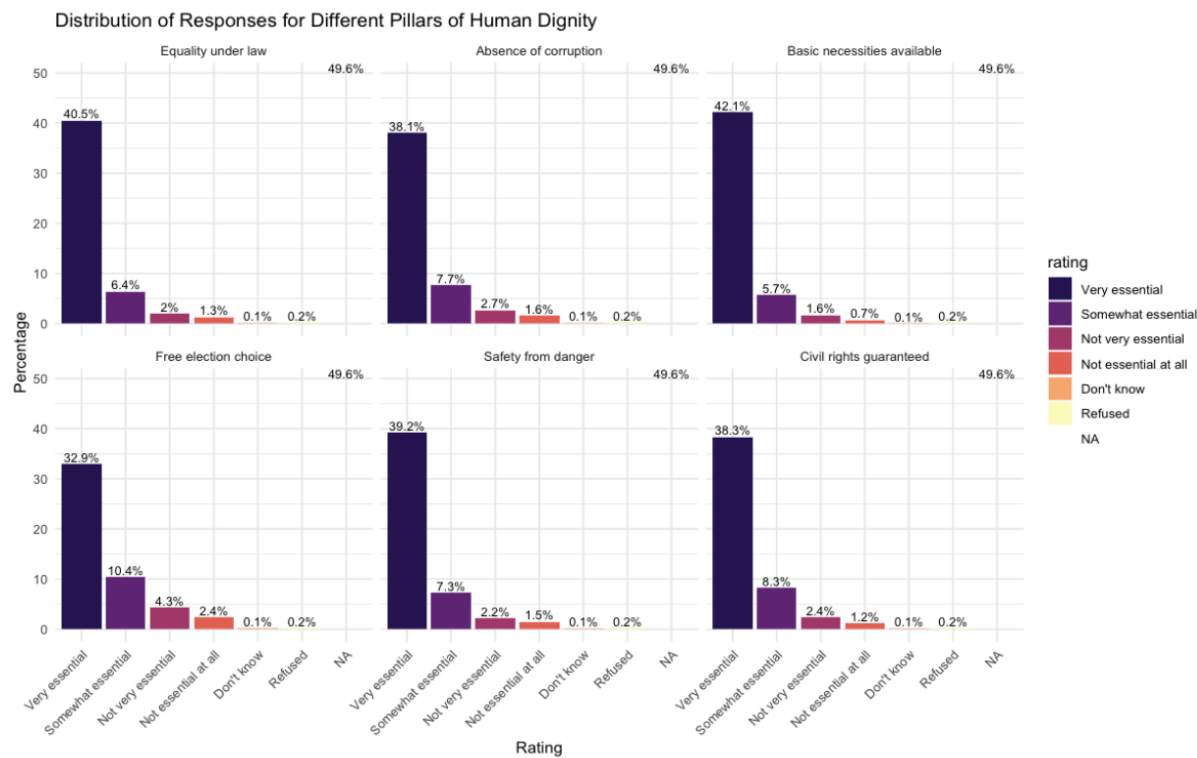


Chart 2: Q551A - Distribution of Main Pillars of Human Dignity

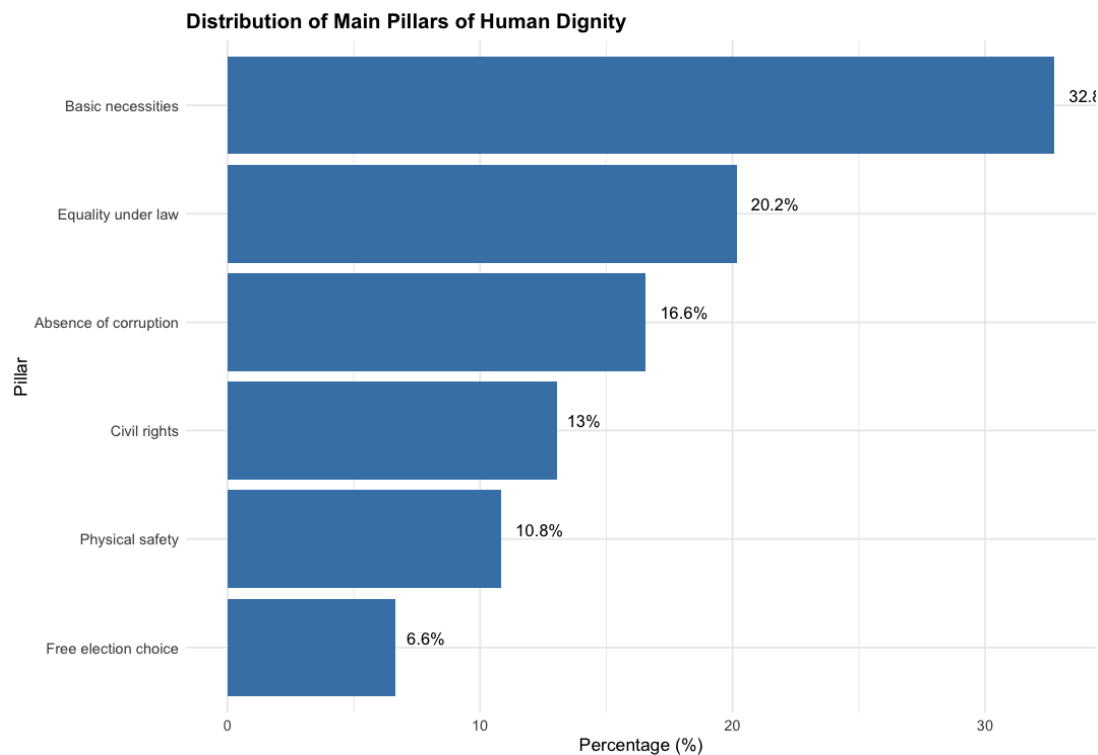


Chart 3: Spearman Correlation - Dependent variables and Summary Index

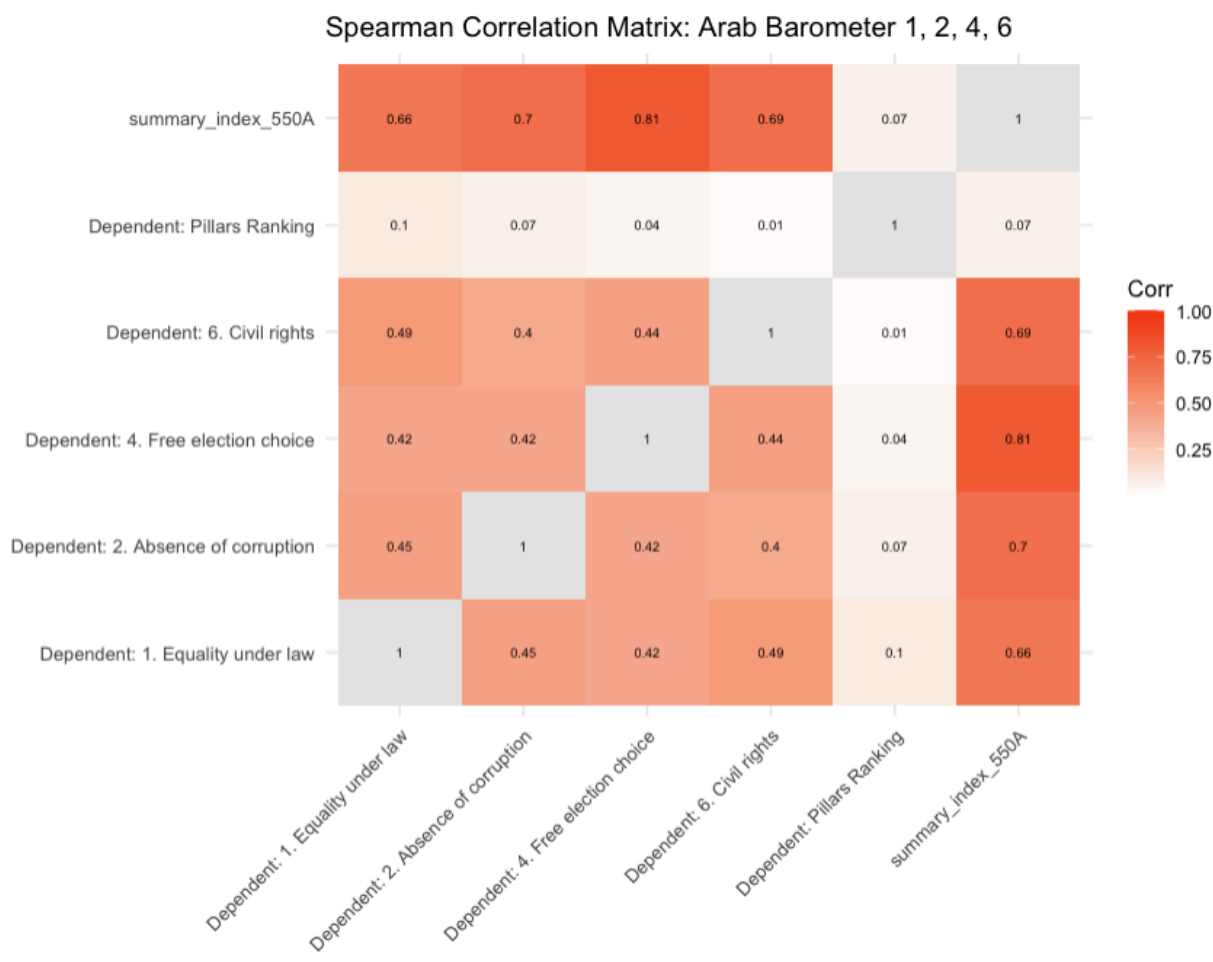


Chart 4: Spearman Correlation - Dependent and grouped independent variables

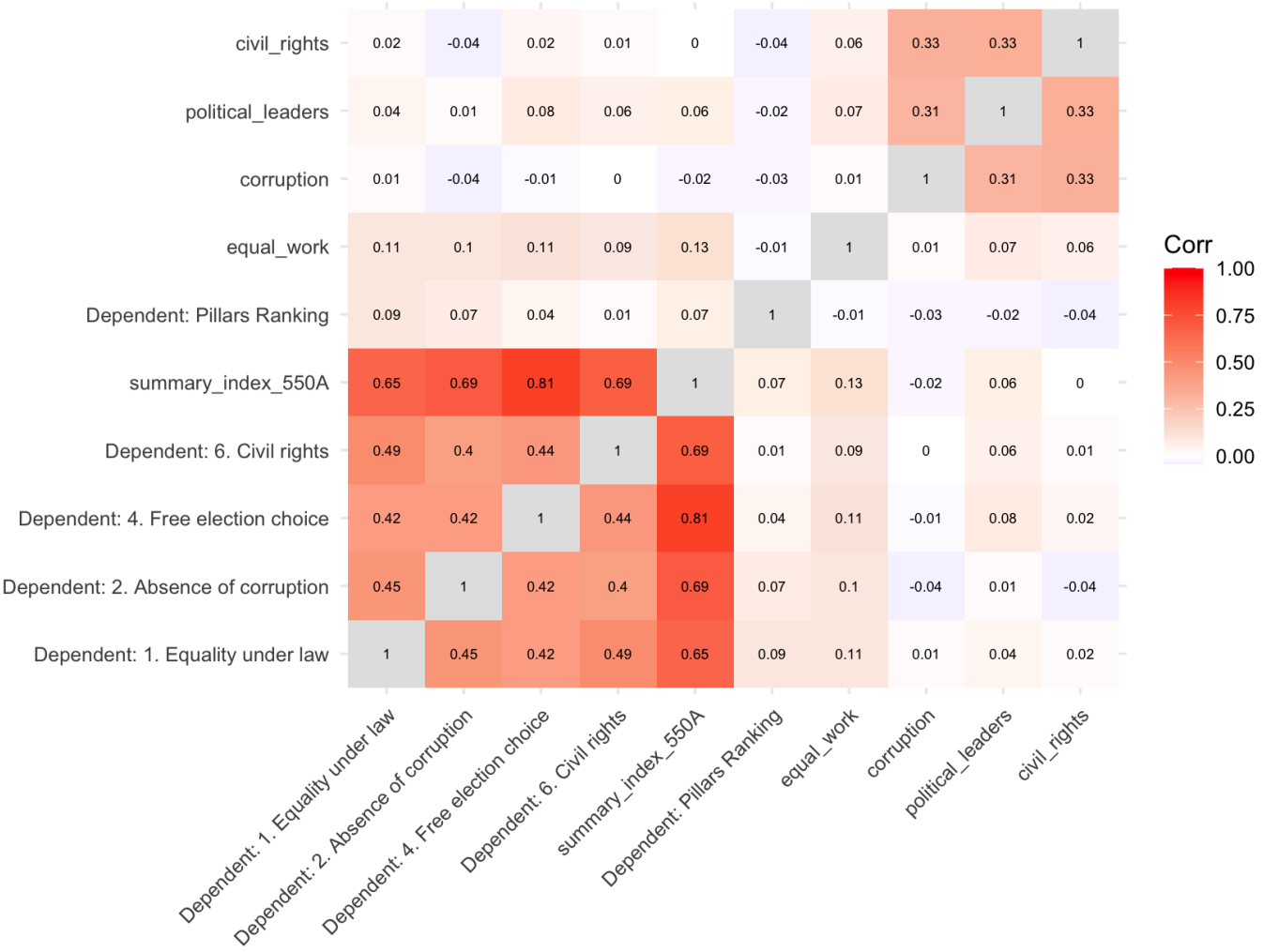


Table 1: Missingness of Dependent and Independent Variables

Variable	Missing Count	Percentage (%)
Dependent: 1. Equality under law	0	0.00
Dependent: 2. Absence of corruption	0	0.00
Dependent: 4. Free election choice	0	0.00
Dependent: 6. Civil rights	0	0.00
summary_index_550A	0	0.00
Dependent: Pillars Ranking	23	0.35
equal_work	22	0.33
corruption	782	11.85
political_leaders	1221	18.51
civil_rights	1	0.02

Table 2: Independent Variables Under Each Pillar

Pillars	Variable	Arab Barometer Questions	Answer Choices
1. Equality under the law	Q601_5	For each of the statements listed below, please indicate whether you agree strongly, agree, disagree, or disagree strongly with it. 5 - Men and women should have equal work opportunities.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
2. Absence of corruption	Q211B	How widespread do you think corruption is in local government/your municipality/your local council? Would you say..	1. Hardly anyone is involved 2. Not a lot of officials are corrupt 3. Most officials are corrupt 4. Almost everyone is corrupt
4. Ability to freely choose political leaders in elections	Q303A	In general, how would you evaluate the last parliamentary elections? Was it...	1. Free and fair 2. Free and fair with minor problems 3. Not free or fair
	Q303B_1	In your opinion, do the following occur during the elections in [YOUR COUNTRY] ? 1- Votes are counted fairly	1. Frequently 2. Sometimes 3. Rarely 4. Never
6. Basic civil rights are guaranteed	Q204A_1	How satisfied are you with the following? 1 - The educational system in our country	1. Completely satisfied 2. Satisfied 3. Dissatisfied 4. Completely dissatisfied
	Q204A_2	2 - The healthcare system in our country	1. Completely satisfied 2. Satisfied 3. Dissatisfied 4. Completely dissatisfied
	Q521_1,4,6,2B,2A	To what extent do you think that the following is guaranteed in [your country]? 1. Freedom to express opinions. 4. Freedom to participate in peaceful protests and demonstrations. 6. Freedom of religion 2B Freedom of the press 2A Freedom of the media to criticize the things government does.	1. Guaranteed to a great extent 2. Guaranteed to a medium extent 3. Guaranteed to a limited extent 4. Not guaranteed at all