



Carnegie Mellon University

Public Opinion of

Democracy in Africa

Andy Ouyang

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Data Analysis of Public Opinion Data

Afrobarometer Data Gathering

1. Finding relevant questions in the Afrobarometer survey codebook
2. Matching questions across the different years the survey has been distributed over

Data Visualization in R

- Recoding data into numerics from words
- Removing unnecessary data (missing, refused to answer, don't know responses to questions)
- Making bar graphs showing the mean response and most recent survey response distribution

Improving Visualizations

- Over time visualizations improved through using stacked bar graphs to show distributions changing over time

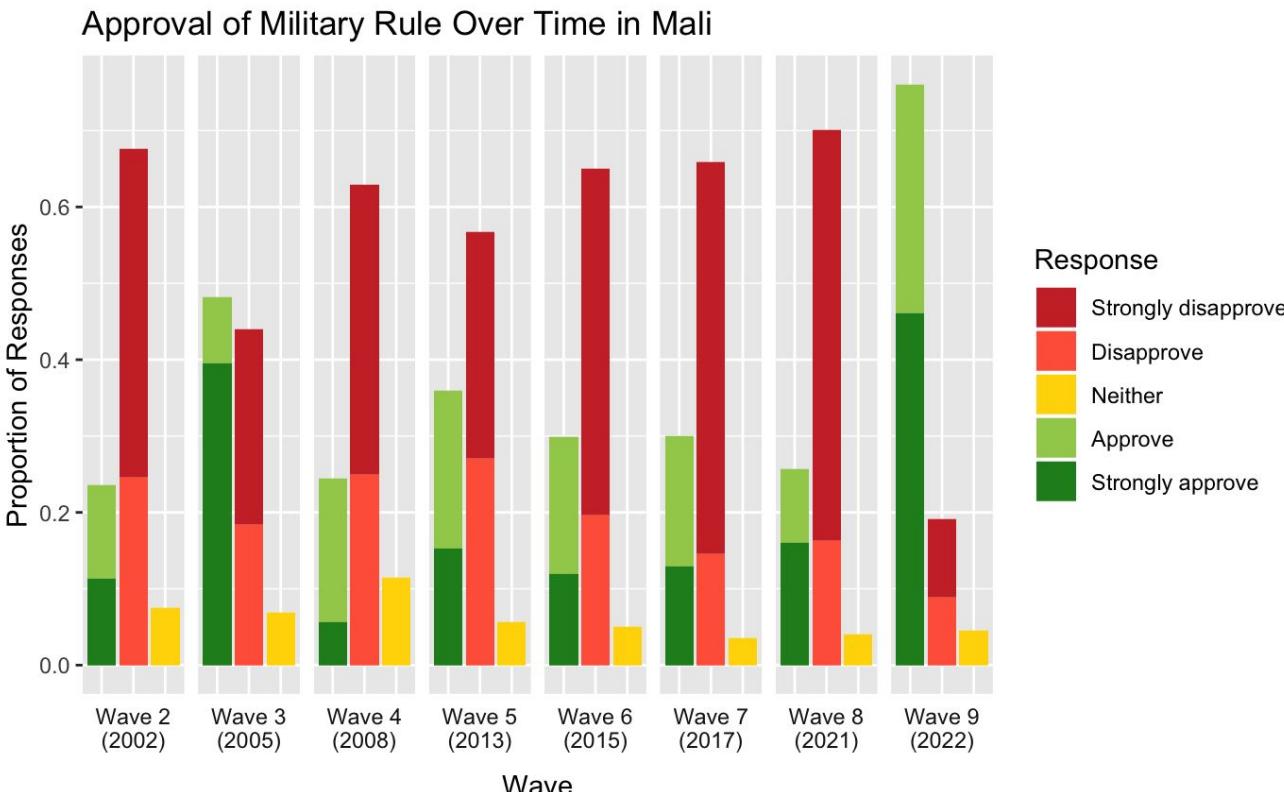
R Code

```
281 ## extent of democracy
282
283 ````{r}
284 r9_dupe <- subset(r9, !Q30 %in% c(8,9,98,-1))
285 r8_dupe <- subset(r8, !Q36 %in% c(8,9,98,-1))
286 r7_dupe <- subset(r7, !Q35 %in% c(8,9,98,-1))
287 r6_dupe <- subset(r6, !Q40 %in% c(8,9,98,-1))
288 r5_dupe <- subset(r5, !Q42 %in% c(8,9,98,-1))
289 r4_dupe <- subset(r4, !Q42A %in% c(8,9,98,-1))
290
291 wave4 = table(r4_dupe$Q42A) / sum(table(r4_dupe$Q42A))
292 wave5 = table(r5_dupe$Q42) / sum(table(r5_dupe$Q42))
293 wave6 = table(r6_dupe$Q40) / sum(table(r6_dupe$Q40))
294 wave7 = table(r7_dupe$Q35) / sum(table(r7_dupe$Q35))
295 wave8 = table(r8_dupe$Q36) / sum(table(r8_dupe$Q36))
296 wave9 = table(r9_dupe$Q30) / sum(table(r9_dupe$Q30))
297
298 wave <- c("Wave 4 (2008)", "Wave 5 (2012)", "Wave 6 (2015)", "Wave 7 (2018)", "Wave 8 (2021)", "Wave 9 (2022)")
299
300 one <- c(as.numeric(wave4["1"]), as.numeric(wave5["1"]), as.numeric(wave6["1"]),
301           as.numeric(wave7["1"]), as.numeric(wave8["1"]), as.numeric(wave9["1"]))
302 two <- c(as.numeric(wave4["2"]), as.numeric(wave5["2"]), as.numeric(wave6["2"]),
303           as.numeric(wave7["2"]), as.numeric(wave8["2"]), as.numeric(wave9["2"]))
304 three <- c(as.numeric(wave4["3"]), as.numeric(wave5["3"]), as.numeric(wave6["3"]),
305           as.numeric(wave7["3"]), as.numeric(wave8["3"]), as.numeric(wave9["3"]))
306 four <- c(as.numeric(wave4["4"]), as.numeric(wave5["4"]), as.numeric(wave6["4"]),
307           as.numeric(wave7["4"]), as.numeric(wave8["4"]), as.numeric(wave9["4"]))
308
309
310 rejone <- data.frame(Wave = character(), One = double(), Two = double(), Three = double(), Four = double())
311 for (i in 1:length(wave)) {
312   rejone <- rbind(rejone, data.frame(Wave = wave[i], One = one[i], Two = two[i], Three = three[i], Four = four[i]))
313 }
314
315 rejone_melt <- reshape2::melt(rejone, id.vars = "Wave")
```

R Code

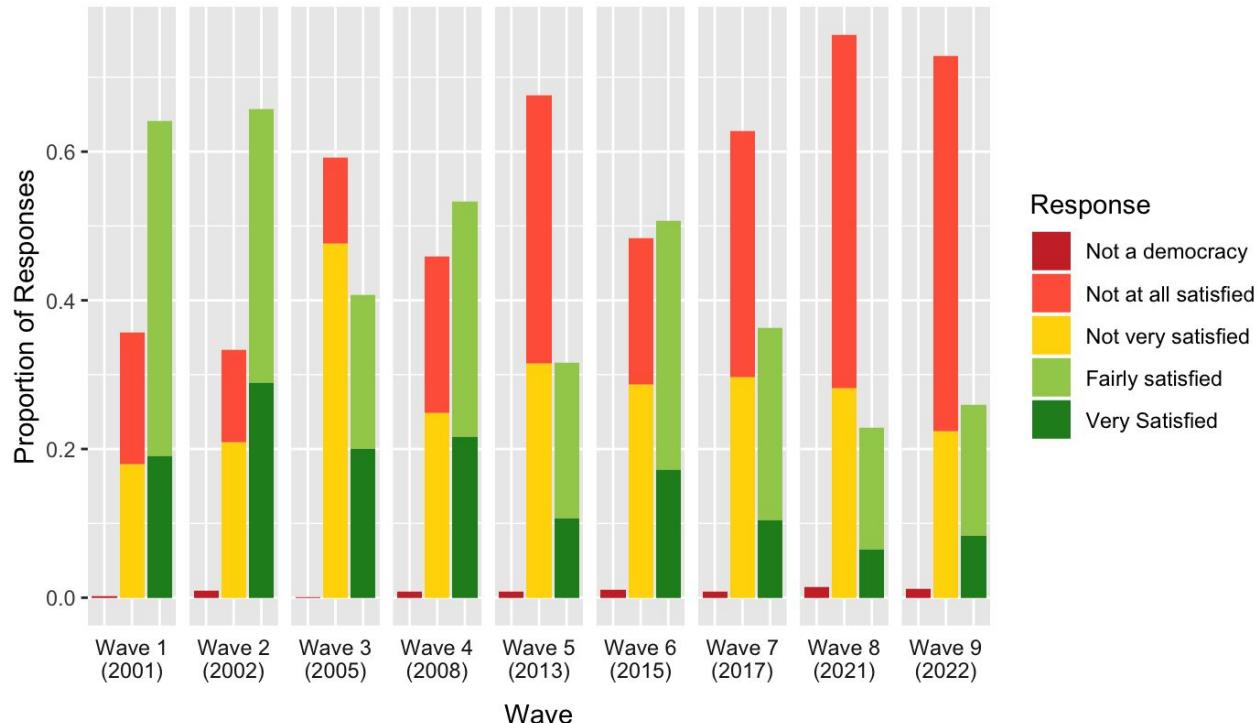
```
317 rejone_melt$Response <- ''  
318 rejone_melt[rejone_melt$variable == 'One',]$Response <- "No"  
319 rejone_melt[rejone_melt$variable == 'Two' | rejone_melt$variable == 'Three' | rejone_melt$variable == 'Four',]$Response <- "Yes"  
320  
321 rejone_melt %>%  
322   ggplot(aes(x = Response, y = value, fill = variable)) +  
323     geom_bar(stat = 'identity', position = 'stack') +  
324     facet_grid(~Wave, switch = "both", labeller = label_wrap_gen(width = 10)) +  
325     theme(legend.key = element_blank(), strip.background = element_rect(colour="white", fill="white"),  
326           axis.text.x = element_blank(), axis.ticks.x = element_blank()) +  
327     scale_fill_manual(labels = c("Not a democracy",  
328                               "A democracy with\\nmajor problems",  
329                               "A democracy with\\nminor problems",  
330                               "A full democracy"),  
331     values = c("tomato", "gold", "darkolivegreen3", "forestgreen")) +  
332     guides(fill=guide_legend("Response")) +  
333     labs(title = "Extent of Democracy Over Time in Burkina Faso",  
334           y = "Proportion of Responses",  
335           x = "Wave")  
336  
337 suppressMessages(ggsave("extent_of_democracy_over_time.png", bg = "white", dpi=700))
```

Mass support for military rule has exploded in Mali.

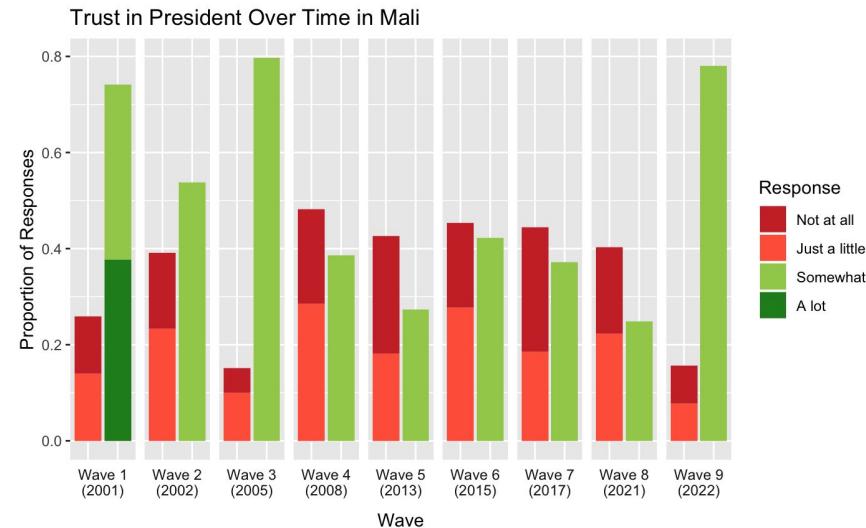
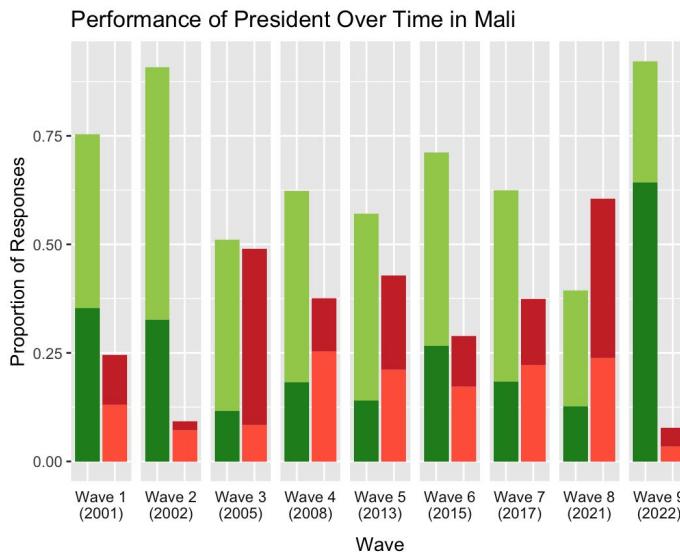


Increasing dissatisfaction with democracy but...

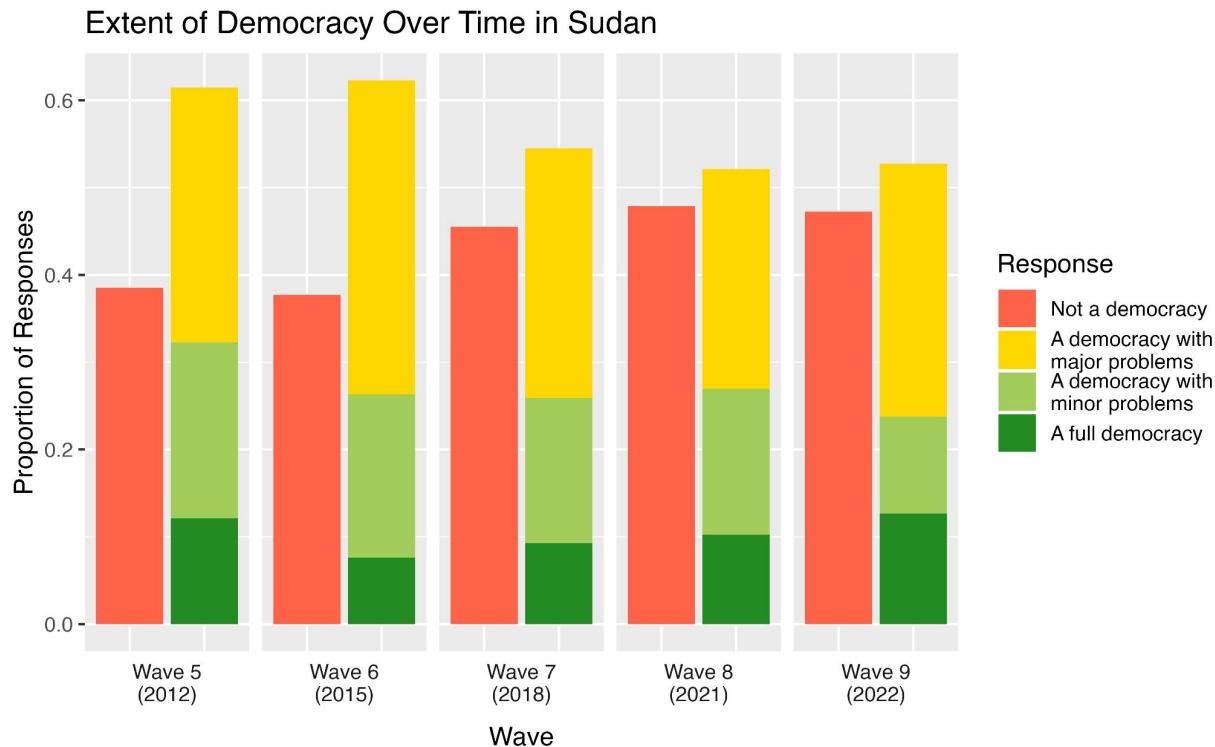
Satisfaction with Democracy Over Time in Mali



... increasingly positive opinions regarding president

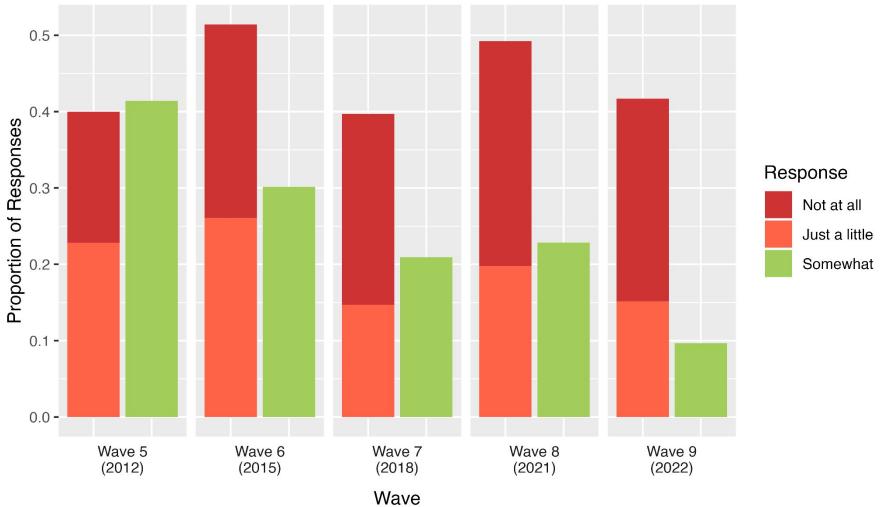


Sudan is becoming more and more undemocratic

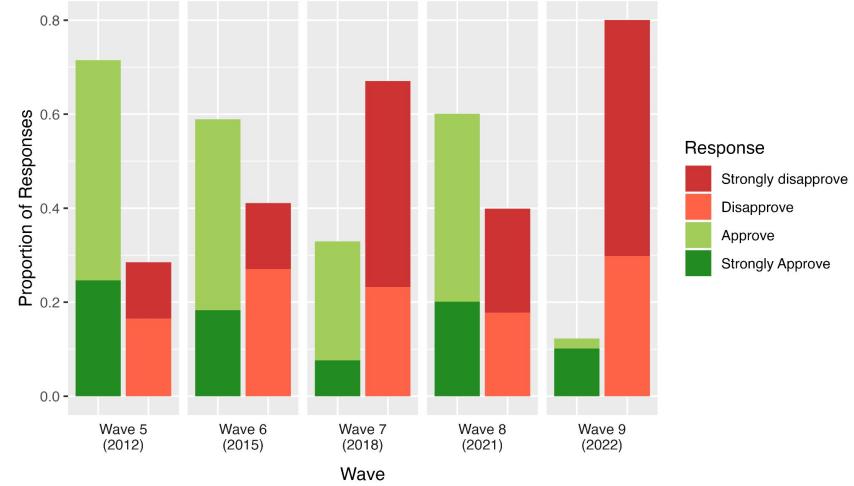


Trust in president and approval of performance decreasing

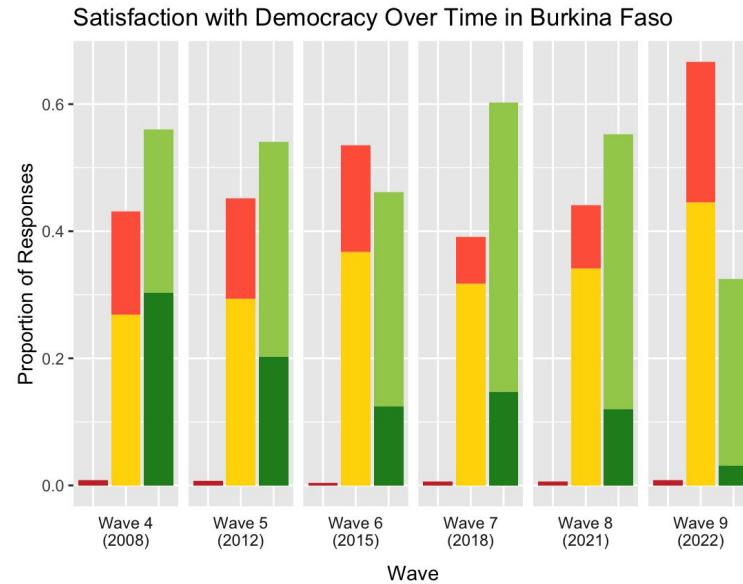
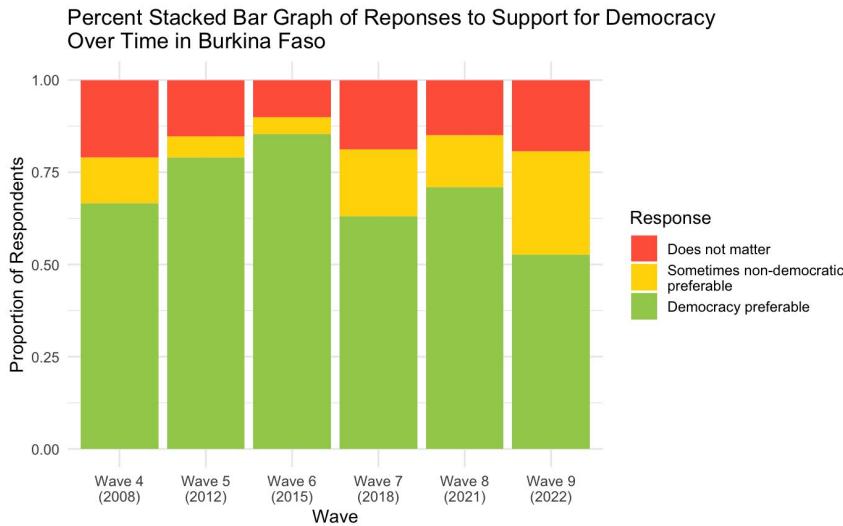
Trust in President Over Time in Sudan



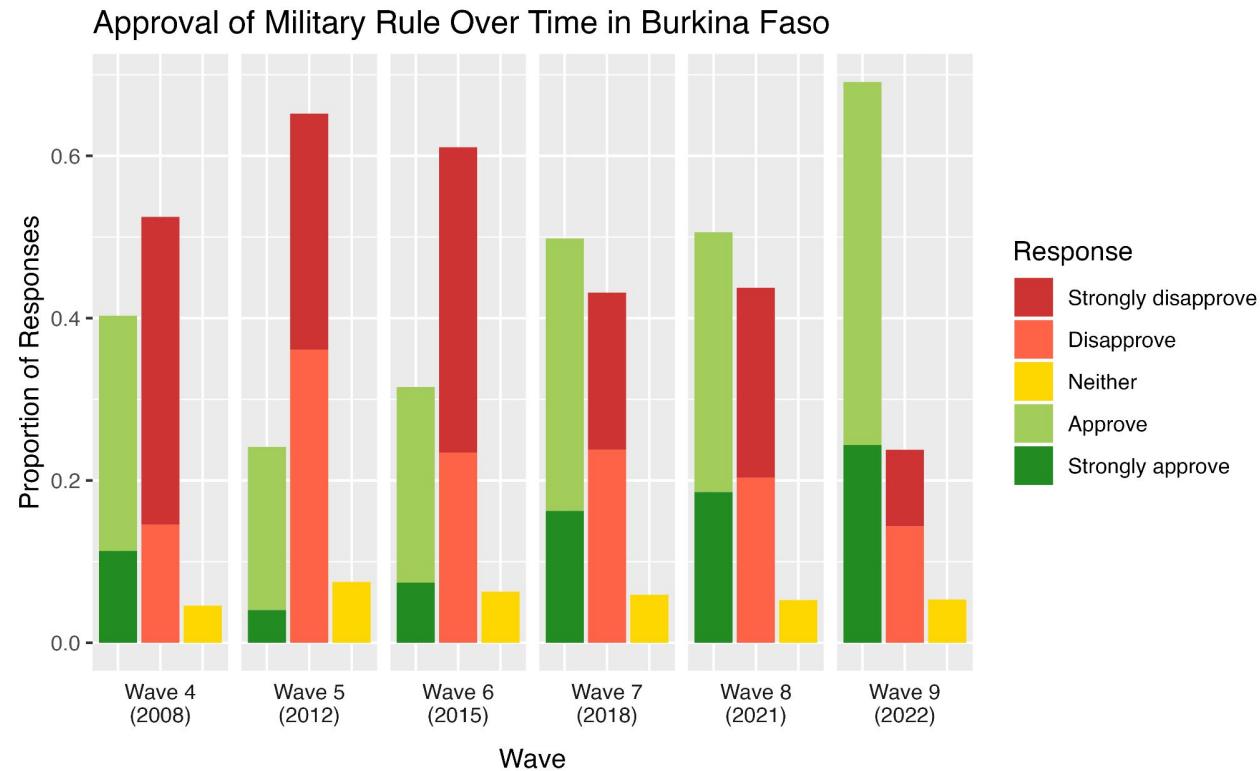
Performance of President Over Time in Sudan



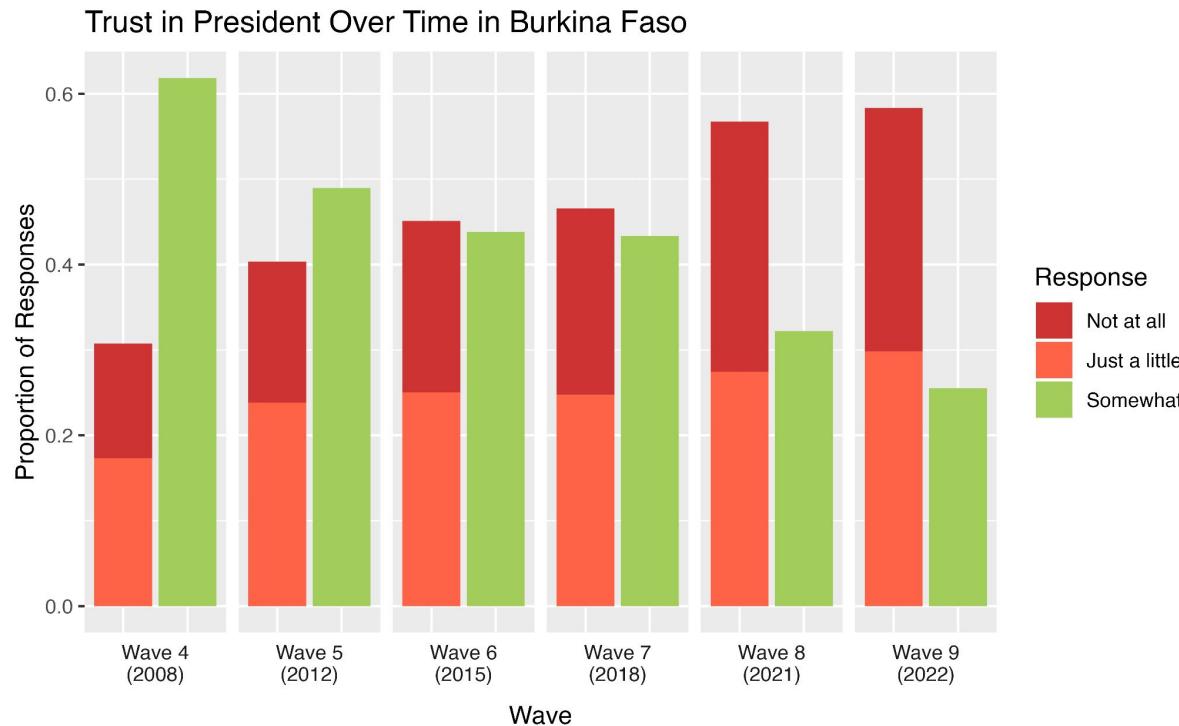
People are less satisfied with democracy and are starting to prefer democracy less in Burkina Faso



Approval for military rule on the rise since 2012



Rising negative and falling positive opinions of trust in president



Tuki's Study on Niger's Opinions of a Military Govt

Original Study

- Wave 9 of Afrobarometer survey data
- Linear regression analysis through 7 models
- Three key variables:
 - corruption index
 - deprivation index
 - political instability
- Nigerians do not have a strong aversion towards military rule
- Positive correlation with political instability and negative correlation with socioeconomic deprivation

Extension of Study / Replication

- Apply original study to Mali
- Cleaning all initial data
- Gathering all external data
 - political instability data
 - nighttime light data (QGIS)
- Performing linear regression analysis

Linear Regression Results

Table 1. Correlates of support for military intervention

Military intervention	Signif. codes: 0 '****' 0.001 '***' 0.01 '**' 0.05 '*' 0.1 '.' 1						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Corruption index	-0.05737*** (2.14e-05)			-4.945e-02 *** (0.000262)	-3.289e-02* (0.01558)	-3.634e-02 ** (0.00885)	-1.211e-02 * (0.01684)
Deprivation Index		-0.022671*** (0.000234)		-1.885e-02** (0.003760)	-1.925e-02** (0.00336)	-1.790e-02 * (0.01068)	-5.054e-03 * (0.04783)
Political instability			-2.190e-04*** (0.000324)	-1.549e-04 * (0.016928)	-1.683e-04* (0.01023)	1.396e-05 (0.98726)	2.781e-05 (0.93058)
Trust in military					2.105e-01*** (1.38e-07)	2.070e-01 *** (8.00e-07)	7.056e-02 *** (4.06e-06)
Age					-2.302e-03 (0.29514)	-1.371e-03 (0.54083)	-4.480e-04 (0.58420)
Gender					1.019e-01 (0.11754)	9.523e-02 (0.14716)	1.613e-02 (0.50083)
Education level					-1.135e-02 (0.43757)	-1.772e-02 (0.23845)	-5.955e-03 (0.27675)
Nighttime light					-4.421e-03* (0.01708)	9.224e-04 (0.71323)	8.837e-04 (0.33520)
Constant	3.60101*** (< 2e-16)	3.539490*** (< 2e-16)	3.449e+00*** (< 2e-16)	3.753e+00*** (< 2e-16)	3.226e+00*** (< 2e-16)	4.053e+00 *** (7.18e-05)	9.882e-01 ** (0.00791)
Estimation method	OLS	OLS	OLS	OLS	OLS	OLS	LPM
Region FE	No	No	No	No	No	Yes	Yes
Ethnic group FE	No	No	No	No	No	Yes	Yes
Observations	1047	1164	1166	1045	1040	1040	1042
R-Squared	0.01715	0.01159	0.01105	0.03382	0.0722	0.1007	0.09035
AIC statistic	3024.051	3363.849	3368.754	3005.903	2957.898	2979.447	886.5018

My case study has three key implications

1

Opinions of democracy are changing for worse, possibly tied to the opinions of presidents in recent years

2

Mali and Burkina Faso experienced increasing support for military rule

3

Perceived corruption and socioeconomic deprivation are notably negatively correlated with support for military intervention