

# EXAMINING DETERMINANTS OF COVID-19 VACCINE HESITANCY IN TOGO

## SUPPORTING THE TOGO PANDEMIC RESPONSE

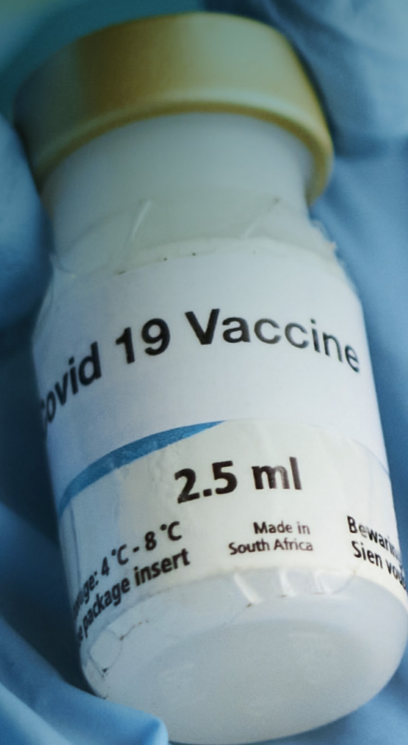
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# BACKGROUND

IN MARCH 2021, THE SUB-SAHARAN COUNTRY OF TOGO IN WEST AFRICA SAW STEADY INCREASES IN COVID-19 CASES. WITH 405 CASES RECORDED ON APRIL 1 2021 – TOGO'S HIGHEST EVER NUMBER OF CASES RECORDED IN A SINGLE DAY SINCE THE PANDEMIC BEGUN – IT IS VITAL THAT COVID-19 VACCINATIONS ARE RECEIVED BY THE DIVERSE POPULATIONS IN TOGO TO ENSURE THAT CASES DO NOT RISE TO THESE NUMBERS AGAIN. ACHIEVING HIGH OVERALL VACCINATION RATES WILL BE CRUCIAL FOR OVERCOMING THE PANDEMIC. GOVERNMENTAL, HEALTHCARE, AND POLICY GROUPS WILL REQUIRE URGENT AND TIMELY DATA TO GUIDE THEIR STRATEGIC VACCINATION CAMPAIGNS. IT IS THEREFORE FUNDAMENTAL THAT WE UNDERSTAND MORE ABOUT THE FACTORS THAT INFLUENCE PEOPLE'S WILLINGNESS TO BE VACCINATED SO AS TO INFORM STRATEGIES TO REACH VACCINE HESITANT POPULATIONS.

**According to the World Health Organization (WHO), vaccine hesitancy is defined as the delay in the acceptance or blunt refusal of vaccines, which has been identified as a growing trend in global health and Africa (Marti, de Cola, MacDonald, Dumolard, & Ducios, 2017). Previously, many experiences and rumours have challenged the success and effectiveness of vaccination programs in sub-Saharan African countries. For example, the polio vaccine boycott in Northern Nigeria in 2003-2004 was prompted by distrust and misconceptions of their religious leaders (Jegede, 2007).**

This policy brief analyses data collected in Togo shortly before vaccines were officially approved. We conducted a nationally representative telephone survey in Togo (N = 1,558) throughout December 2020, prior to COVID-19 vaccines arriving in Togo. In our analyses, we operationalised vaccine hesitancy as respondents who answered 'no'

and 'I don't know' to the question: "When a COVID-19 vaccine becomes available to you, would you like to get vaccinated?" We hope that our findings provide useful insight into the socioeconomic and psychological factors associated with COVID-19 vaccine hesitancy in Togo.



# KEY FINDINGS

- Rates of vaccine hesitancy were fairly high. **67.7%** of the Togolese respondents said that they were willing to be vaccinated against COVID-19 when offered the opportunity, **25.7%** said they were not, and 6.6% were undecided (**32.3%** overall hesitancy).
- **Among the 25.7% of respondents who reported unwillingness to be vaccinated**, we asked further questions about their reasons for this. Within this hesitant population, reasons included believing the vaccine to be **dangerous** (90.6%), **government mistrust** (40.7%), **pharmaceutical mistrust** (15.6%), believing that **COVID-19 is not severe enough** (7.8%), and other reasons such as **not having enough information about the vaccine** (25.5%).
- **Gender** may be a barrier to achieving high vaccination rates in Togo. Using multivariate methods in a binary regression model controlling for other factors, females were 34% more likely to express hesitancy than males. Of males in our sample (n = 972), 31.5% (n = 306) expressed hesitancy toward receiving the vaccine, but for females in our sample (n = 506), 34.6% (n = 175) expressed hesitancy.
- **Community type** may be an additional barrier to achieving high vaccination rates in Togo. Respondents who lived in urban communities were 37% more likely to express vaccine hesitancy compared to respondents residing in rural communities – the strongest predictor in our model.
- **Governmental trust and satisfaction.** Respondents who reported greater trust and satisfaction in how the Togolese government responded to the COVID-19 pandemic expressed lower vaccine hesitancy.
- **Negative impact of COVID-19 on finances.** Respondents who reported being financially harder hit by the pandemic in Togo indicated greater hesitancy to be vaccinated.
- **Perceptions of COVID-19 as dangerous** predicted lower vaccine hesitancy.
- **COVID-19 prevention measures.** Respondents who reported **greater hygiene measures** (conceptualised as regular hand washing practices, regular disinfecting of home surfaces, regular mask wearing when in public, and regular use of hand sanitizer) were associated with lower vaccine hesitancy. Furthermore, respondents who practiced higher **limiting of contact with others** to prevent the spread of COVID-19 was associated with lower vaccine hesitancy.
- **Media sources.** Reliance on social media outlets, mass media outlets, and official governmental or health outlets to receive new information about COVID-19 was not associated with the willingness to be vaccinated. However, respondents who reported getting COVID-19 news from **Internet webpages** (e.g., news websites, blogs) were 48% more likely to express vaccine hesitancy compared with people who reported not using the Internet as a source of COVID-19-related information.
- In our model, **differences in age, education, employment status, or religion** were not associated with vaccine hesitancy, suggesting that the predictors reported in this policy briefing occur across age groups, education levels, employment levels, and religions.







# POLICY RECOMMENDATIONS

**These findings emphasise the need for strategies to increase COVID-19 vaccination rates in Togo. Given the relatively higher levels of vaccine hesitancy (32%), providing more education about the safety and efficacy of the COVID-19 vaccine aimed at men and women, people residing in urban communities, and communities who were hard hit by the pandemic financially will be especially critical to achieving high vaccination rates in Togo, and thus will be important to alleviate the effects of the pandemic. While some measures will involve governmental strategies (e.g., district, regional, or national), others will require multi-stakeholder collaboration and solutions.**

## Short-term measures

- Develop targeted programs via multiple channels in Togo, such as community outreach and media campaigns, in order to educate women, people living in urban communities, and low income communities, with the goal to increase knowledge and trust in the safety of vaccines. Engage trusted local leaders in each of those regions to support the delivery of good public health messaging.
- Boost efforts via multiple channels, such as social media outlets, mass media outlets, and official government and health outlets to reach a broader range of people with clear information about vaccine safety. Official health and information articles should target people nationally via media campaigns – especially on news websites and Internet blog pages. Case studies using photos of real people and other trusted “voices” who are associated with the hesitant cohort (e.g., women, people residing in poor and/or urban communities) may be effective in inducing confidence in the COVID-19 vaccines.
- Promote measures nationally that increase the share of accurate and reliable medical/scientific information available about the pandemic and the safety and efficacy of vaccines. For example, information that is released by official sources, such as the government or Togo Health Service, could also be promoted on news websites and mass media channels, such as radio, newspapers, and TV, as well as by using Facebook Ads.

## Medium-term measures

- Facilitate initiatives among traditional media and online information providers to develop measures to assist consumers in discerning the quality of sources and of information content. For example, citizens could be taught to trust information that is released by “official” sources, such as the government or Togolese Health Service.
- Promote information and scientific literacy. It would be beneficial for Togolese citizens to learn more about scientific methods, such as measures of risk and probability, and how scientific breakthroughs such as vaccines are created and tested. Furthermore, many respondents reported reservations about the vaccine being developed in Western countries such as the US and the UK. Thus, there could be approaches to show how international research can be adapted and adopted for local populations.

# ANALYSES AND DISCUSSION

**Data collection for this telephone survey took place shortly before vaccines were officially approved. We conducted a nationally representative telephone survey in Togo (N = 1,558) throughout December 2020, prior to COVID-19 vaccines arriving in Togo. Respondents were 1558 Togolese citizens residing in all 6 regions of Togo (64.5% male; Age Range = 18–84, Mean age = 36.20, Standard Deviation = 12.41). Margin of error (MOE) was 3%.**

The majority of respondents lived in Lomé (49.2%), Maritime (16.2%), and Plateaux (12.3%) regions. Further, 23.7% had completed higher education, 25.7% had completed senior secondary, and 30.2% had completed junior secondary. Approximately 69% of respondents reported living in an urban community (vs. rural; 31%); 21.6% reported being unemployed (59.7% were self-employed); and 69.9% reported being Christian (vs. Muslim; 16.4%). Finally, 63.6% reported being married (vs. single; 26.5%).

We asked respondents basic demographic questions, measured COVID-related attitudes and health behaviours, and assessed how respondents obtained new information about the COVID-19 pandemic (i.e., sources and channels). Most crucially, we assessed their willingness to adopt the appropriate response to COVID-19 – that is, to receive the vaccine. To do this, we asked the basic question: **“When the vaccine for COVID-19 becomes available to you, would you like to get vaccinated?”** Overall, rates of vaccine hesitancy were fairly high compared with other sub-Saharan countries (e.g., Ghana; Brackstone, Akinocho et al., 2021); 67.7% of the Togolese respondents said that they were willing to be vaccinated against COVID-19 when a vaccine becomes available to them, 25.7% said they were not, and 6.6% were undecided (32.3% overall hesitancy).

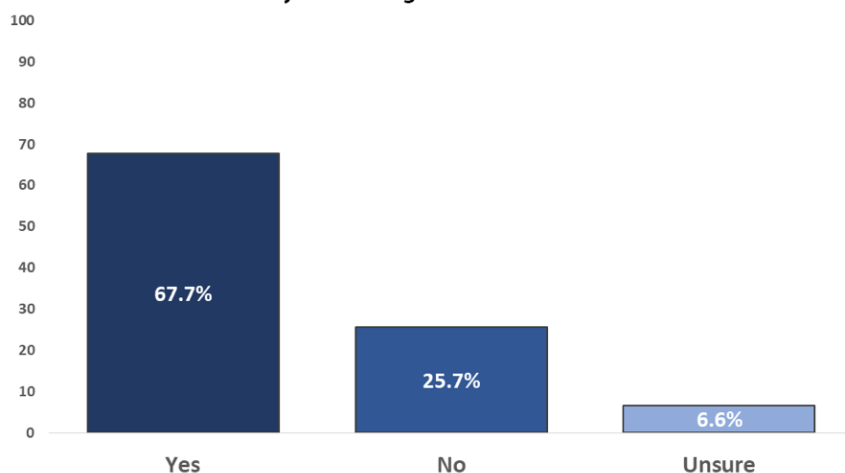
Gender was a strong predictor of vaccine hesitancy in our model. Using multivariate analyses that controls for other socioeconomic and psychological factors, we found that females were 34.1% more likely to express vaccine hesitancy than males. Based on raw percentages, 68.5% of male respondents answered that they would be willing to receive the vaccine, 6.2% were undecided, and 25.3% were unwilling (31.5% hesitancy). Among female respondents, 65.4% indicated a willingness to be vaccinated, 7.7% were undecided, and 26.9% were unwilling (34.6% hesitancy).

We also found that urban communities were 35% more likely than rural communities to express vaccine hesitancy. This corroborates research by Samarasakera (2021), who recently surveyed 15,000 adults in fifteen African countries across five regions of the continent and found that respondents living in rural areas were more likely to take the COVID-19 vaccine compared with respondents living in urban settings. This association was also found in a recent nationwide survey which assessed the socioeconomic drivers of vaccine hesitancy in Ghana, whereby urban communities were 64% more likely to express vaccine hesitancy compared to respondents residing in rural communities (Brackstone, Akinocho et al., 2021).

Further, respondents who perceived COVID-19 as dangerous (i.e., to themselves, to their family, and to their society), and respondents who reported regularly carrying out COVID-19 prevention measures (i.e., undertaking hygiene practices and limiting contact with others) indicated lower vaccine hesitancy. Thus, respondents who are anxiously proactive in preventing the spread of COVID-19 are more likely to willingly receive the vaccine. Our data also suggests an association between negative impact of COVID-19 on finances and vaccine hesitancy; respondents who reported more negative effects of COVID-19 on their finances (i.e., “To what extent has COVID-19 negatively impacted your finances?” 1 = not at all; 5 = extremely) were more likely to be vaccine hesitant. Further research should seek to explain why those who were harder hit financially express hesitancy toward the vaccine.

In terms of sources of COVID-19-related information, our data showed that the mass media (e.g., newspapers, radio, TV; 97.2%) was the main source of COVID-19-related information for Togolese citizens, followed by family members and friends (76.2%), and the Internet (73.6%).

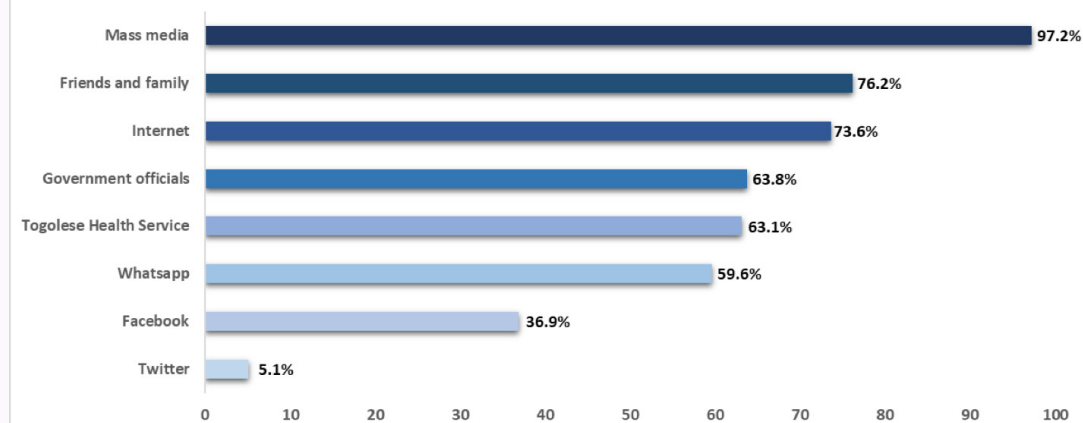
**“When the COVID-19 vaccine becomes available to you, would you like to get vaccinated?”**



**Figure 1.**  
Percentage of recipients' responses to the vaccine question



**Sources of COVID-19 information**



**Figure 2.** Percentage of sources in which respondents typically retrieve COVID-19-related information.

Respondents who reported the Internet (e.g., Google, news websites, blogs) as a source of COVID-19-related information were more likely to be vaccine hesitant compared to respondents who reported not consulting the Internet. Our analyses appear to suggest trends – albeit nonsignificant – that respondents who received news from government sources and Facebook

expressed lower vaccine hesitancy compared to respondents who reported not consulting these sources, suggesting that these sources are “on the right lines” in terms of vaccine-relevant information and content, and therefore should be honed further (see Policy Recommendations).

Table 1. Expressed hesitancy to the COVID-19 vaccine in Togo		%	p-value	95% CI
<b>Age in years</b>		-0.3	.580	0.986 – 1.008
<b>Female</b>		34.1	.029	1.030 – 1.746
<b>Urban community</b>		36.9	.044	1.009 – 1.858
<b>Education</b>	Upper secondary and lower	22.0	.214	0.891 – 1.6715
<b>Being unemployed</b>		21.1	.191	0.900 – 1.696
<b>Religion</b>	Christianity	9.8	.698	0.686 – 1.758
	Islam	12.5	.663	0.662 – 1.913
<b>Number of people in household</b>		2.6	.268	0.980 – 1.075
<b>Governmental trust and satisfaction</b>		-34.2	.000	0.569 – 0.761
<b>Negative impact of COVID-19 on finances</b>		20.7	.002	1.073 – 1.359
<b>Perceived danger of COVID-19</b>		-26.1	.006	0.596 – 0.822
<b>COVID-19 prevention</b>	Hygiene (composite)	-16.7	.061	0.757 – 1.006
	Limiting contact with others (composite)	-31.1	.000	0.596 – 0.822
<b>Channels of COVID-19 information</b>	Facebook	-24.4	.128	0.543 – 1.080
	Whatsapp	4.6	.780	0.753 – 1.452
	Twitter	14.6	.637	0.651 – 2.017
	Mass media (e.g., radio, newspapers, TV)	-37.0	.207	0.307 – 1.292
	Togolese Health Service or health workers	24.4	.131	0.937 – 1.653
	Government officials	-19.8	.115	0.610 – 1.055
	Family members or friends	11.9	.489	0.814 – 1.539
	Internet (e.g., Google, news websites, blogs)	48.5	.021	1.062 – 2.076
<b>Number of participants</b>				<b>1,524</b>
<b>R<sup>2</sup></b>				<b>0.147</b>

**Notes:** Multivariate methods were used to identify the contribution of specific factors, controlling for other factors. Predictors of vaccine hesitancy were examined using a binary regression model. The column labelled “%” is the percent change in the dependent variable for a one-unit change in the independent variable. Dummy variables were used to estimate the effect of categorical variables. Reference categories are male, rural community, higher education, employed, and no religion. p-values indicate the level of significance. p-values below 0.05 indicate significance at the 95% confidence level; p-values below 0.01 indicate significance at the 99% confidence level; p-values below 0.001 indicate significance at the 99.9% CLs



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## Ethics

The study was reviewed and approved by the Psychology Ethics Committee, University of Southampton, UK (ref: 57267). We also extend gratitude to Aleza Mazabalo, Togolese Bioethics Committee, Ministry of Health, for supporting this project's ethics application in Togo.

## Peer Review

The findings reported in this policy brief have been reviewed by study group members but have yet not undergone external peer review. A manuscript is currently being prepared.

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