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ROUND 4

UJ-HSRC COVID-19 DEMOCRACY SURVEY

Self-reported explanations for vaccine acceptance and hesitancy

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NRF National Research Foundation
HSRC Human Sciences Research Council
DCES Developmental, Capable & Ethical State

Summary of key findings

- This report presents an analysis of the reasons South Africans provided for their willingness or hesitancy to vaccinate, based on a coding of open-ended responses in Round 4 of the UJ/HSRC Covid-19 Democracy Survey, which was conducted between 25 June and 20 July 2021.

- Amongst those that are **accepting of a Covid vaccine**, the most common explanations are the desire to protect oneself or to protect society.

- Amongst those that are **hesitant about taking the Covid vaccine**, concerns over side effects, concerns that the vaccine will be ineffective, and distrust of the vaccine and/or government are the most common self-reported explanations.

- Explanations for vaccine hesitancy related to social media and/or rumours only make up a small proportion of explanations, 5%. Reasons related to religious objections or to conspiracy theories, similarly, make up a minority of explanations, 2% respectively.

- On **age**, while younger people are more vaccine hesistant, their explanations for their hesistancy are largely consistent with that of older people, primarily they are concerned with the side-effects and the effectiveness of the vaccine. However, our findings also reveal that a lowered perception of risk in relation to the virus and a higher level of general uncertainty about vaccination may also be factors.

- Across **population groups**, side-effects and and concerns about the effectiveness of the vaccine are the most predominant concerns. These concerns are particularly pronounced amongst White adults, who have lower levels of vaccine acceptance compared to other population groups.

- The analysis demonstrates that there are few **gendered differences** in the explanations for vaccine hesitancy. However, women appear to be more concerned about side-effects compared to men, mentioned by 37% of women compared to 19% of men.

- As for **educational differences**, those with a post-matric education are significantly more concerned with the effectiveness of the vaccine. This was raised by 46% of hesitant adults with a post-matric qualification, compared to 21% of those less than a matric-level education.

- Turning to **poverty status**, side-effects are a more prominent concern for the hesitant non-poor adults compared to others, mentioned by 39% compared to 29% of those just getting by, and 28% of those that are poor.

- There are important differences in the reasons given for vaccine hesitancy between **urban and rural residents**. Side effects are a much more prominent concern for vaccine hesitant respondents in urban areas (32%) compared to rural residents (13%). Similarly, hesitant urban residents are also much more concerned about the effectiveness of the vaccine, 26% compared to 7% of the explanations provide by rural residents.

- People in rural areas are more likely to explain their hesitancy with regards to their distrust of the vaccine and/or institutions. They also explain their hesitancy more frequently in relation to a general uncertainty and a need for more information compared to urban residents.

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Introduction

This report provides an analysis of the self-reported explanations that participants in Round 4 of the UJ/HSRC Covid-19 Democracy Survey provided to explain their willingness or hesitancy to vaccinate. Participants were asked, 'If a Covid-19 vaccine became available to you, would you take it?' Participants could then respond with one of the following pre-coded answers, 'I've already had the vaccine', 'yes, I would definitely get the vaccine', 'I would probably get the vaccine', 'I would probably not get the vaccine', 'No, I definitely would not get the vaccine' and 'Don't know'.

This question was then followed by a question that asked them to provide, in their own words, an explanation for their answer. These questions were fielded in Round 3 (29 December 2020 - 6 January 2021) and Round 4 (25 June 2021 - 20 July 2021) of the UJ/HSRC Covid-19 Democracy Survey. Given the importance of the issue, we felt it was valuable to provide participants an opportunity to express themselves freely rather than present a pre-coded list of reasons. In Round 4, a total of 7,889 people fully competed the survey.

The analysis in this report is based upon a random sample of 2,370 self-provided explanations taken from the English-language responses, the language in which the majority (73%) of participants undertook the survey. In the future, we intend to code all of the explanations we received however, in the interests of releasing this data into the public domain timeously we present findings from this sample.

This report should be read in conjunction with the accompanying report, *Vaccine acceptance and hesitancy: Findings from the UJ/HSRC Covid-19 Democracy Survey*, which presents an analysis of the overall levels of vaccine acceptance and hesitancy and patterns of difference based on a range of demographic and attitudinal factors.

This report is structured as follows. We first provide an explanation of the survey methodology and the methods through which the qualitative explanations were coded. The report then provides an analysis of the explanations provided for vaccine acceptance and hesitancy. This analysis is then taken further with a consideration of how age, race, gender, education, subjective poverty status, and geographical location influence the explanations for the willingness or reluctance to vaccinate.

Survey methodology

The online survey was conducted using the #datafree Moya Messenger App. The Moya Messenger app, which is operated by Datafree (formerly biNu), has 5 million monthly users, 800,000 of whom use the app every day. The survey was available in six languages: English, Afrikaans, isiZulu, isiXhosa, Setswana and Sesotho. English was the most common language used. The survey was fully completed by 7,631 participants. Most people undertaking the survey did so using a smartphone, access to which has increased rapidly in recent years. However, there is a skew in terms of who has access to smartphones, particularly between older and younger people.

In this round, we addressed the coverage gap amongst older people by fielding a telephone survey that was conducted by Ask Afrika. The telephone survey was conducted between 14 July and 20 July and provided an additional 258 responses from those aged 60 and above. Ask Afrika was provided with key criteria regarding the demographic, social and geographic characteristics of this supplement. These cases were integrated with the Moya sample to produce an overall sample size of 7,889 respondents for the round. All of the data was weighted to match Statistics South Africa data on race, education and age, and can be regarded as broadly representative of the adult population at large.

Analysing self-reported explanations for vaccine acceptance and hesitancy

The explanations provided by participants were coded thematically. The coding framework was developed from the analysis of a sample of responses collected in Round 3 of the survey. A research briefing based on these findings was released on 25 January 2021. Since then, we have undertaken a complete analysis of all the explanations provided in Round 3. As a result, we have developed and refined the coding framework and therefore, although there are similarities, there are also some differences between the coding schema presented in that report and in this one. The preliminary analysis of the Round 4 data also necessitated the creation of some new coding categories to capture emergent ideas in the data and new developments as a result of the start of the vaccine roll-out.

Table 1. Thematic explanations for vaccine acceptance and hesitancy

ACCEPTING	
Protect self	Explanation discusses protecting the self.
Protect society	Explanation discusses protecting people such as family, community or society at large.
Conditional acceptance	Where doubt or a condition is placed on willingness to vaccinate.
Trust science/government	Explanation discusses trust in science and/or government
Back to normal	Explanation discusses a desire to get back to normal
Other accepting	Other ideas not captured in the coding scheme.
HESITANT	
Ineffectiveness	Explanations that are concerned with the general effectiveness and safety of the vaccine, excluding side effects.
Side effects	Explanations concerned with side-effects
Distrust	Explanations that indicate a lack of trust in the vaccine or with government or other institutions.
Religious objection	Explanations that provide a religious reason for being unwilling to vaccinate.
Conspiracy	Explanations that doubt the existence of Covid-19 or attribute the virus and/or vaccine to powerful groups with vested interests.
Not at risk	Explanations that express the belief that the individual is not at risk of Covid-19.
Alternative remedies	Explanations that express a preference for alternative treatments for Covid-19 including other drugs and/or traditional medicines.
Social media/rumours	Explanation discusses seeing social media stories or hearing rumours that have made them hesitant.
Unsure	Explanation expresses uncertainty about their willingness or unwillingness to vaccinate.
Other hesitant	Other ideas that express hesitancy.
NEUTRAL	
Access/Cost	Explanation expresses a concern about the ability to afford or access the vaccine
Need more information	Explanation expresses a desire to have more information or expresses that they feel uninformed about the vaccine
See others	Explanation uses the example of seeing others take the vaccine to justify their willingness or unwillingness to vaccinate.

In total, 50 codes were developed to explain vaccine acceptance and hesitancy.[1] As this would be too complex to represent in this report, this coding schema was collapsed into a total of 19 codes, which

[1] The full coding schema can be found in appendix A

are presented in Table 1 below. Six provide explanations for vaccine acceptance, 10 for vaccine hesitancy, and three that can be regarded as neutral. However, in Round 4 we have found that the distinctions between these acceptance and hesitancy explanations have blurred, with vaccine accepting respondents sometimes providing hesitant explanations and vice versa. This illustrates the complexity of understanding vaccine acceptance and hesitancy, as well as the value of conducting an analysis of qualitative responses rather than pre-coded data.

The explanations were read and then coded against this coding scheme. Up to six explanations could be recorded per respondent.

Explanations for vaccine acceptance

In our Round 4 findings, 72% indicated that they either had already been vaccinated, or that they definitely or probably would take a vaccine. In this section of the report we explore the reasons that those that are willing to be vaccinated provided.

Of those that are accepting of a Covid-19 vaccine, the two most common explanations were the desire to protect oneself (64%) and to protect society (28%) (Table 2). Reasons that also featured, but to a lesser degree, were trust in science and or government (5%) and the positive influence of seeing others take the vaccine featured in 4% of responses. A desire to get 'back to normal' featured in 2% of the explanations among the vaccine accepting.

These findings are largely consistent with what we found in Round 3. However, in Round 4, we found in some there was an increased use of 'hesitant' explanations used to explain the willingness to vaccinate. These concerns included the ability to access to vaccine (2%) as well as concerns about side-effects or the effectiveness of the vaccine, 1% respectively.

Table 2. Thematic explanations for those willing to vaccinate (%)

Explanation	Total accepting
Protect self	64
Protect society	28
Trust science/government	5
See others	4
Other accepting	4
Back to normal	2
Access/Cost	2
Conditional acceptance	2
Side effects	1
Ineffectiveness	1
Distrust	1
Need more information	1
Unsure	1
Social media/rumours	1

Breaking this analysis down further, Table 3 illustrates that the majority of these hesitant explanations were amongst those who indicated that they would probably get the vaccine. In the group, while the desire to protect oneself and society were still the most frequent explanations, this group also had a higher proportion of hesitant explanations. At least 10% of the explanations from the probably group indicated their conditional acceptance of the vaccine. This group also had a higher degree of concern about side-effects and the effectiveness of the vaccine, mentioned by 8% and 6% respectively. This

illustrates that while people may be willing to vaccinate, they may also have some fears or concerns that need to be addressed.

Table 3. Thematic explanations for the total vaccine accepting explanations versus those who will probably get the vaccine (%).

	Total accepting	I would probably get the vaccine
Protect self	64	39
Protect society	28	27
Trust science/government	5	1
See others	4	5
Other accepting	4	5
Back to normal	2	2
Access/Cost	2	3
Conditional acceptance	2	10
Side effects	1	8
Ineffectiveness	1	6
Distrust	1	5
Need more information	1	4
Unsure	1	4
Social media/rumours	1	3

Explanations for vaccine hesitancy

While our Round 4 findings indicate that a majority of the population is willing to take a vaccine, 28% of the population is vaccine hesitant. That is, they indicated that either don't know if they will take a vaccine, or that they probably or definitely would not take a vaccine.

Table 4. Thematic explanations of those unwilling to vaccinate (%)

	Total hesistant
Side effects	30
Ineffectiveness	24
Distrust	21
Unsure	9
Protect self	7
Alternative remedies	6
Need more information	5
Social media/rumours	5
See others	4
Other hesitant	4
Not at risk	4
Religious objection	2
Access/Cost	2
Conspiracy	2
Protect society	1
Conditional acceptance	1

Of the explanations given for hesitancy (Table 4), the most prominent were a concern about side-effects and the effectiveness of the vaccine, 30% and 24% respectively. Distrust was the third most

common explanation, accounting for 21% of explanations. The category of distrust spans both distrust and fear of the vaccine itself, and distrust of institutions such as the government or international institutions like the World Health Organisation (WHO). A total of 6% of hesitant adults indicated that they believed in alternative remedies to vaccines. These alternative remedies ranged from the use of drugs like Ivermectin to traditional medicines. Some of the explanations reflected a general uncertainty (9%) or a need for more information (5%).

As we saw above, seeing other people vaccinate can positively reinforce the willingness to vaccinate. Amongst those that are hesitant, it may also have the opposite effect. Vaccine hesitant people were most often concerned about seeing someone they know experience side-effects after taking the vaccine, contributing to their overall apprehension about taking the vaccine.

Social media and rumours about the vaccine do contribute towards vaccine hesitancy, but to a small degree, with only 5% of hesitant adults discussing social media or other rumours. Reasons related to religious objections or to conspiracy theories similarly make up a minority of explanations, 2% respectively. What this illustrates is that, for most people, hesitancy is related to understandable and rational concerns about the vaccine.

Interestingly, while people may have indicated their hesitancy to vaccinate, some explanations also acknowledged the benefits of vaccination, with 7% providing explanations indicating the importance of protecting oneself and 1% discussing the importance of protecting society.

Table 5. Thematic explanations per vaccine hesitant category (%).

HESITANT	Total hesitant	I would probably not get the vaccine	No, I would definitely not get the vaccine	(Don't know)
Side effects	30	24	29	29
Ineffectiveness	24	25	16	16
Distrust	21	29	22	16
Unsure	9	7	2	20
Protect self	7	4	4	11
Alternative remedies	6	3	9	4
Need more information	5	6	2	9
Social media/rumours	5	9	3	6
See others	4	4	4	4
Other hesitant	4	5	5	2
Not at risk	4	7	5	1
Religious objection	2	3	3	0
Access/Cost	2	6	2	1
Conspiracy	2	1	3	1
Protect society	1	2	1	0
Conditional acceptance	1	0	0	0

Taking this analysis further, Table 5 provides the explanations provided by each of the hesitant categories, which reveals some differences in the concerns between these three groups. Amongst those that said they would probably not get the vaccine, distrust was the most common explanation (29%), which was slightly higher than either of the other two hesitant groups. This group also referenced social media or rumours that they had heard more than other categories, 9% compared to 3% for those who said they definitely would not take the vaccine. Furthermore, the probably would

not take category also had a slightly higher degree of concern about access or cost of the vaccine, 6% compared to 2% for the total hesitant group. This group also had a slightly higher belief that they were not at risk of catching Covid-19 or suffering ill-health as a result, 7% compared to 4% of the total hesitant group.

Amongst those that definitely would not take a vaccine, side-effects were the most prominent concern, followed by distrust. This group also indicated their higher belief in alternative remedies 9% compared to 3% for the probably would not and 4% for the don't knows.

Amongst the don't knows, side-effects were the most common concern (29%) followed by an indication that they were generally unsure about taking the vaccine (20%). Concerns that the vaccine is ineffective and distrust were the next most common explanations, 16% respectively. Compared to the other hesitant groups, the don't knows were more concerned about protecting oneself from the virus, 11% compared to 4% of the probably and definitely will not vaccinate groups. As we may expect, this group also had a larger concern to acquire more information before making a decision about vaccination.

Overall, what these findings reveal is that the majority of the concerns from the vaccine hesitant are related to side-effects and the effectiveness of the vaccine, rational and legitimate concerns. Explanations related to social media, religious objections and conspiracy theories feature in a minority of explanations. What this illustrates is that the vaccine hesitant, in general, are not anti-science but are, in fact, mostly concerned to learn more about the vaccine in order to make informed choices about their health.

Factors shaping explanations for vaccine acceptance and hesitancy

In the following sections of the report, we analyse how a selection of demographic variables influence the explanations given for vaccine acceptance and hesitancy. It is hoped that this analysis can assist in targeting public health messaging towards the concerns of particular groups.

Age

Our analysis of the Round 4 data illustrates that vaccine acceptance increases with age. The following analysis will consider whether explanations for vaccine acceptance or hesitancy appear to be strongly associated with particular age categories.

Among those who are vaccine accepting, the primary motivation is to protect oneself and this motivation is slightly higher amongst the over-60s compared to younger age cohorts (Table 5). Interestingly, the desire to protect society is considerably lower amongst the over-60s, 13% compared to 37% for the youngest cohort, 18-34 years. Trust in science and/or the government is used more by the over 60s and the 35-49 age group to explain their willingness to vaccinate.

Based on our research, we have shown that vaccine acceptance increases with age. At present, 62% of 18-34 year olds are willing to be vaccinated, considerably lower than the over-60 age group (86%). This difference is of particular concern given the planned extension of the roll-out to this age cohort, planned for 1 September 2021. Furthermore, there has also been some concern in the decline in the rate of vaccination amongst those who are currently eligible to receive the vaccine.

The data provided in Table 6 provides some insights but also poses some puzzles. Those aged over 60 are less concerned about side-effects compared to all the younger age cohorts. The 50-59 age group appear to have a particular concern that the vaccine may be ineffective, mentioned by 63% and more than double of any other age group. Interestingly, while the over 60s are the most willing to vaccinate,

amongst those that are hesitant, levels of distrust are higher than that of younger people, 29% compared to 21% of 18-34 year olds.

Explanations related to uncertainty are more prominent in the two youngest age cohorts, 11% for 18-34 year olds and 10% amongst the 35-49 year olds, markedly higher than the other two older age cohorts. This is despite the fact that the desire for more information is strongest amongst the 35-49 and over-60 age groups.

Table 5. Thematic explanations amongst the vaccine accepting by age (%).

	AMONG ACCEPTING				
	18-34	**35-49**	**50-59**	**60+**	**Total**
Protect self	62	56	58	69	64
Protect society	37	42	35	13	28
Trust science/government	2	6	2	7	5
Other accepting	2	4	6	5	4
See others	2	0	2	7	4
Conditional acceptance	5	1	0	0	2
Back to normal	3	4	7	0	2
Access/Cost	2	2	8	1	2
Ineffectiveness	1	2	0	0	1
Side effects	2	2	0	0	1
Distrust	2	1	0	0	1
Need more information	2	2	0	0	1
Social media/rumours	1	1	0	0	1
Unsure	1	2	0	0	1

Table 6. Thematic explanations amongst the vaccine hesistant by age (%).

	AMONG HESITANT				
	18-34	**35-49**	**50-59**	**60+**	**Total**
Side effects	30	32	36	22	30
Ineffectiveness	18	22	63	29	24
Distrust	21	19	16	29	21
Unsure	11	10	2	0	9
Protect self	5	7	2	20	7
Alternative remedies	5	8	15	4	6
Need more information	4	11	0	8	5
Social media/rumours	6	7	1	0	5
See others	5	6	1	0	4
Not at risk	6	1	1	0	4
Religious objection	2	1	0	8	2
Access/Cost	1	3	0	4	2
Conspiracy	2	2	1	0	2
Protect society	1	0	2	0	1
Conditional acceptance	0	0	6	0	1
Other hesitant	6	1	2	0	4

Alternative remedies to vaccination, are more frequently found in the explanations of 50-59 year olds, 15% compared to 6% of the total hesitant explanations. Religious objections to vaccination are most prominently found amongst the over-60s. Younger people (18-34), more frequently use the explanation that they are not at risk of contracting Covid-19 than other age groups, 6% compared to 1% for the 35-49 age group and the 50-59 age group.

While this provides some insight, it does not clearly explain why young people are more vaccine hesistant. Their concern about side-effects is largely consistent with other age groups, apart from the over-60s. While their concern about the effectiveness of the vaccine is lower than other age cohorts. Similarly, while distrust is a factor it is not as prominently mentioned as amongst the other age groups. Two explanations, perhaps, hold part of the key. Younger people, both those aged 18-34 and 35-49, are more generally uncertain about taking a vaccine, discussed 11% and 10%, respectively, much higher than the older age groups. Furthermore, 18-34 year olds were much more likely to mention that they were not at risk, 6% of their explanations compared to 1% of the 35-49 age group and 50-59 age group. While important, these factors, do not provide a necessarily clear answer as to why younger people are more likely to be vaccine hesistant.

Maybe next year I will take the vaccine. I just feel this one is rushed not thoroughly researched. I'll wait and see if people don't get sick with vaccines then I will take it definitely (Black African man, 18-24 years).

I'm not sure if the vaccine actually works I heard the side effects are too bad (Coloured woman, 18-24 years).

What's the point in getting vaccinated if it doesn't protect you from contracting the virus. It's a no brainier and a waste of time (Black African person, 25-29 years).

The quotations above help to provide some further insight into the problem. While the concern about side-effects may be largely similar to other groups, as the first quotation suggests, perhaps young people feel that they can afford to 'wait and see'. The other concerns expressed are very similar to what older people say when they express concerns about side-effects and the effectiveness of the vaccine. This, perhaps, demonstrates that young people's concerns are not necessarily distinctive and suggests that public health messaging may need to target the platforms that young people most engage in for information, details of which are provided in the accompanying report to this one.

Race

Our findings in Round 4 demonstrate that vaccine acceptance is highest amongst Black Africans. In contrast, White people have a much lower level of acceptance, 52% compared to 75% of Black Africans. The analysis in Table 7 provides an analysis of the explanations given for vaccine acceptance by race.

The desire to protect oneself and protect society is the most common explanation provided by Black African, Coloured and White adults. For Indian and Asian adults, the most common explanation for

vaccination is the desire to protect society, the second most common explanation for the other population groups.

Among White adults, seeing others vaccinate has had a slightly stronger influence on the willingness to vaccinate, mentioned by 9% compared to 4% of Black Africans and Indian and Asian adults. White adults also more frequently explain their willingness to vaccinate as part of a desire for things to return to normal.

Table 8 provides an analysis of the explanations for hesitancy by race. As stated above, White adults are the most vaccine hesitant group, and an analysis of their concerns indicates that they have some distinctive concerns about vaccination compared to other population groups.

White adults have much higher levels of concern about side-effects and the effectiveness of the vaccine, as illustrated in the quotations below. The results show that 52% of White adults raised concerns about side-effects, slightly more than double than by Black African adults. Concerns that the vaccine may be ineffective, referred to by 60% of White adults, are considerably higher than among Black African or Coloured participants. Indian and Asian adults also seem to share higher levels of concern (44%) about the effectiveness of the vaccine.

Because I do not believe in the vaccine as it has not been tried & tested over a period of time and the risk of side effects is not known in the immediate or long term (White woman, 70-74 years old).

This vaccine has not gone threw [sic] proper testing. And it has been developed to quickly. Also the government has signed a no liability clause. So why would I want something injected into my body. Where if it damages me. I have to pa all the bills to try and reduce the side affect . Or I would have to live with a bad side affect for the rest of my life. For a sickness I've had and didn't even know I had (White man, 45-49 years old).

Reasons related to distrust were most commonly provided by Black Africans (25%), followed by White adults (19%). Coloured adults had a comparatively lower level of distrust (11%). Explanations that reveal uncertainty about taking the vaccine were more common amongst Black African and Coloured adults, 11% and 10% respectively, compared to 1% of White adults.

Among Indian and Asian adults, the third most common explanation for hesitancy is the desire to protect oneself, a reason that we had initially classed as a vaccine accepting explanation. This illustrates the complexity of understanding vaccine hesitancy, where explanations for vaccine hesitancy can combine positive evaluations of vaccination alongside negative perceptions. It may also suggest that this group may be more open to positive messaging about the benefits of vaccination.

Table 7. Thematic explanations amongst the vaccine accepting by race (%).

	AMONG ACCEPTING				
	Black African	Coloured	Indian or Asian	White	Total
Protect self	65	64	32	58	64
Protect society	27	29	54	31	28
Trust science/government	5	0	7	7	5
Other accepting	4	5	0	2	4
See others	4	1	4	9	4
Conditional acceptance	2	4	4	1	2
Back to normal	2	0	2	10	2
Access/Cost	2	5	4	3	2
Ineffectiveness	1	1	4	2	1
Side effects	1	4	0	3	1
Distrust	1	2	0	0	1
Need more information	1	1	2	1	1
Social media/rumours	1	1	0	0	1
Unsure	0	3	0	0	1
Religious objection	0	0	2	0	0

Table 8. Thematic explanations amongst the vaccine hesitant by race (%).

	Black African	Coloured	Indian or Asian	White	Total
Side effects	24	33	39	52	30
Ineffectiveness	15	23	44	60	24
Distrust	25	11	0	19	21
Unsure	11	10	6	1	9
Protect self	6	7	22	1	7
Alternative remedies	6	3	0	14	6
Need more information	7	6	4	0	5
Social media/rumours	6	10	3	0	5
See others	5	7	4	0	4
Other hesitant	4	4	0	5	4
Not at risk	5	6	0	0	4
Religious objection	3	2	0	0	2
Access/Cost	2	1	0	0	2
Conspiracy	2	1	0	1	2
Protect society	1	2	0	0	1
Conditional acceptance	1	2	0	0	1

Other explanations that are noteworthy to consider include that White adults more frequently mentioned their preference for alternative remedies to vaccination, mentioned in 14% of explanations compared to 6% of Black Africans and 3% of Coloured adults. Many of these explanations amongst White adults mentioned their preferences for alternative drugs, such as Ivermectin, as demonstrated

in the quotation below. Coloured adults more frequently provided explanations related to social media or rumours about the vaccine, 10% compared to 6% of Black African adults and 3% of Indian adults. Black African and Coloured adults were more likely to consider themselves not at risk of contracting Covid-19 than Indian or White adults.

> *I support and trust my immune system to deal with it with the help of ivermectin (White woman, 60-64 years old).*

What this analysis reveals is that side-effects and concerns about the effectiveness of the vaccine are the most predominant concerns across population groups. Both Black African and White adults are more likely to be distrustful of the vaccine and of institutions. Beyond this, the data highlights that there may be particular areas of concern that public health messaging could target. For White adults, it may be important to further popularise why alternative drugs, like Ivermectin, are not as effective as vaccination. For Coloured adults, countering inaccurate information circulated on social media may also be valuable.

Gender

Our analysis has demonstrated that there is little difference between the levels of vaccine acceptance between men and women, 74% of men are vaccine accepting compared to 70% of women. Table 9 demonstrates that there are some differences between men and women in the explanations provided for vaccine acceptance.

Table 9. Thematic explanations amongst the vaccine accepting by gender (%).

	Male	Female	Total
Protect self	57	69	64
Protect society	32	25	28
Trust science/government	7	3	5
See others	3	4	4
Other accepting	4	3	4
Back to normal	3	2	2
Access/Cost	3	2	2
Conditional acceptance	2	1	2
Side effects	1	1	1
Ineffectiveness	1	1	1
Distrust	1	1	1
Need more information	1	1	1
Unsure	0	1	1
Social media/rumours	0	1	1

Women more frequently explain their willingness to vaccinate based upon their desire to protect themselves relative to men (69% versus 57%). Men motivate their willingness to vaccinate through a desire to protect society slightly more than women, 32% compared to 25%. Men also indicate a slightly higher level of trust in science and/or government than women (7% versus 3%).

Analysing the reasons for vaccine hesitancy (see Table 10) illustrates that there are few gendered differences in the reasons given for hesitancy. However, one area of difference appears to be related to concerns around side-effects. Women seem to be more concerned about side-effects compared to men, stated by 37% of women compared to 19% of men.

Table 10. Thematic explanations amongst the vaccine hesistant by gender (%).

	AMONG HESITANT		
	Male	**Female**	**Total**
Side effects	19	37	30
Ineffectiveness	22	25	24
Distrust	23	19	21
Unsure	8	10	9
Protect self	6	8	7
Alternative remedies	6	7	6
Need more information	4	6	5
Social media/rumours	5	6	5
See others	4	4	4
Other hesitant	6	3	4
Not at risk	6	2	4
Religious objection	2	3	2
Access/Cost	2	2	2
Conspiracy	3	1	2
Protect society	1	0	1
Conditional acceptance	1	0	1

Education

In our Round 4 results, we found a curvilinear pattern in vaccine acceptance by education. With the highest levels of acceptance amongst those with less than matric (76%), declining amongst those with matric (66%) and rising again amongst those with post-matric qualifications (72%).

Table 11 reveals that explanations for vaccine acceptance are largely consistent across the differing levels of educational attainment. However, it is interesting to note that those with less than matric are slightly more concerned to protect themselves, mentioned by 67% of this group compared to 59% of those with matric, and 60% of those with post-matric qualifications. Those with post-matric qualifications are more concerned to protect society than those with less than matric (43% versus 21%).

Analysing the reasons for vaccine hesitancy by educational attainment similarly reveals that the motivations provided are largely consistent. However, there are some differences that are important to note.

Those with a post-matric education are significantly more concerned with the effectiveness of the vaccine than those with less than matric (46% compared to 21%). The use of alternative remedies is also slightly more frequent in the explanations provided by those with matric compared to those with less than or more than matric.

Table 11. Thematic explanations amongst the vaccine accepting by education (%).

	Less than matric	Matric	Post-matric	Total
Protect self	67	59	60	64
Protect society	21	38	43	28
Trust science/government	5	4	4	5
Other accepting	5	3	2	4
See others	5	1	3	4
Conditional acceptance	1	3	2	2
Back to normal	1	4	5	2
Access/Cost	2	3	5	2
Ineffectiveness	0	1	4	1
Side effects	1	1	2	1
Distrust	1	1	0	1
Need more information	1	1	2	1
Social media/rumours	0	1	0	1
Unsure	0	1	0	1

Table 12. Thematic explanations amongst the vaccine hesitant by gender (%).

	AMONG HESITANT			
	Less than matric	Matric	Post-matric	Total
Side effects	24	35	37	30
Ineffectiveness	21	23	46	24
Distrust	18	25	17	21
Unsure	10	8	8	9
Protect self	8	6	1	7
Alternative remedies	4	9	3	6
Need more information	5	6	6	5
Social media/rumours	4	6	5	5
See others	4	4	6	4
Other hesitant	4	4	3	4
Not at risk	2	4	4	4
Religious objection	3	2	0	2
Access/Cost	2	1	0	2
Conspiracy	3	0	3	2

Subjective poverty status

From our analysis of vaccine acceptance and hesitancy, we have seen that there is little difference between subjective poverty status and the willingness to vaccinate.

Table 13 demonstrates that the explanations provided for vaccine acceptance are largely consistent across the differing groups. The desire to protect society is sentiment expressed somewhat more frequently in the non-poor and just getting by groups, 28% and 33% respectively, compared to those that are poor, 24%. Those that are not poor also more frequently motivate their willingness to vaccinate for a desire to get 'back to normal'.

Among the hesitant (table 14), there is some greater degree of variation in the reasons given for hesitancy. Side-effects are a more prominent concern for the non-poor (39%) compared to those just getting by (29%) and those that are poor (28%). While those that are just getting by seem to have greater concerns about the effectiveness of the vaccine. For example, 29% compared to 22% of those that are not poor, and 17% of those that are poor.

Those that are non-poor are less distrustful of the vaccine and institutions than those that are just getting by or are poor. However, this group is also the most likely to explain their hesitancy in relation to their belief in alternative remedies. Those that are not poor also seem to have a greater desire for more information compared to other groups.

Table 13. Thematic explanations amongst the vaccine accepting by subjective poverty status (%).

	AMONG ACCEPTING			
	Non-poor	**Just getting by**	**Poor**	**Total**
Protect self	67	62	64	64
Protect society	28	33	24	28
Trust science/government	5	4	6	5
Other accepting	1	3	5	4
See others	4	2	6	4
Conditional acceptance	0	3	1	2
Back to normal	5	1	2	2
Access/Cost	3	2	2	2
Ineffectiveness	2	1	1	1
Side effects	1	2	1	1
Distrust	0	1	2	1
Need more information	1	1	1	1
Social media/rumours	0	0	1	1
Unsure	0	1	0	1

Table 14. Thematic explanations amongst the vaccine hesitant by subjective poverty status (%).

	AMONG HESITANT			
	Non-poor	**Just getting by**	**Poor**	**Total**
Side effects	39	29	28	30
Ineffectiveness	22	29	17	24
Distrust	15	20	25	21
Unsure	9	10	8	9
Protect self	4	7	6	7
Alternative remedies	10	5	7	6
Need more information	12	5	5	5
Social media/rumours	5	5	5	5
See others	5	4	4	4
Other hesitant	2	4	4	4
Not at risk	2	4	5	4
Religious objection	1	2	3	2
Access/Cost	4	1	2	2
Conspiracy	0	2	1	2
Protect society	0	1	1	1
Conditional acceptance	0	0	1	1

Urban versus rural

Our analysis of the explanations for vaccine acceptance and hesitancy between those who live in urban areas compared to those that live in rural areas yields some interesting findings. Table 15 provides the analysis of the reasons provided by geographical location.

While the desire to protect oneself is the most common explanation across urban and rural residents, the motivation to protect society is more frequently provided by those who live in urban areas (30%) compared to those in rural areas (21%).

Those that live in rural areas are more likely to indicate their trust in science and/or government as a motivation behind their willingness to vaccinate. Interestingly, urban residents who are vaccine accepting seem to have more concerns about access or cost compared to rural residents.

Examining the explanations for hesitancy between urban and rural residents similarly indicates some differences in the concerns expressed.. Side effects are a much more prominent concern for those in urban areas (32%) compared to rural residents (13%). Similarly, urban residents are also much more concerned about the effectiveness of the vaccine, 26% compared to 7% of rural residents.

While, as we saw above, vaccine accepting residents of rural areas were more likely to trust in government and/or science, if they are vaccine hesitant they are more likely to explain their hesitancy with regards to their distrust of the vaccine and/or institutions. 28% of the vaccine hesitant rural residents mentioned distrust compared to 21% of urban residents. This illustrates that trust overall appears to be a more important factor in rural areas than in urban areas. Rural residents also explain their hesitancy more frequently in relation to a general uncertainty and a need for more information that urban residents.

Table 15. Thematic explanations amongst the vaccine accepting by geographical location (%).

	AMONG ACCEPTING		
	Urban	**Rural**	**Total**
Protect self	63	68	64
Protect society	30	21	28
Conditional acceptance	2	0	2
Trust science/government	3	10	5
Back to normal	3	1	2
Other accepting	4	4	4
Ineffectiveness	1	0	1
Side effects	1	0	1
Distrust	1	1	1
Access/Cost	3	0	2
Need more information	1	0	1
See others	4	5	4
Social media/rumours	1	0	1
Unsure	1	0	1

Table 16. Thematic explanations amongst the vaccine hesitant by geographical location (%).

	AMONG HESITANT		
	Urban	**Rural**	**Total**
Side effects	32	13	30
Ineffectiveness	26	7	24
Distrust	20	28	21
Unsure	8	15	9
Protect self	7	4	7
Alternative remedies	7	5	6
Need more information	4	12	5
Social media/rumours	5	8	5
See others	5	1	4
Other hesitant	3	8	4
Not at risk	4	5	4
Religious objection	2	2	2
Access/Cost	2	0	2
Conspiracy	2	2	2
Protect society	1	0	1
Conditional acceptance	1	0	1

Conclusion

This report has analysed the self-reported explanations for vaccine acceptance and hesitancy based on a sample of 2,370 responses to Round 4 of the UJ/HSRC Covid-19 Democracy Survey. For those willing to take the vaccine, the most common explanations are related to the desire to protect oneself and society and this is the case regardless of race, class, gender and geographical location. However, as this report has demonstrated, the willingness to vaccinate is not necessarily unqualified. Those that indicated that they would probably take the vaccine more often expressed some doubts or uncertainties about vaccination, with particular concerns around side-effects and the effectiveness of the vaccine. While these uncertainties do not appear to have dissuaded them entirely from vaccination, they may contribute to delays in the uptake of vaccination. This suggests that public

health messaging needs to continue to provide information that may reassure this group about side-effects and the effectiveness of the vaccine.

Amongst the vaccine hesitant, there were three primary concerns: side-effects, the effectiveness of the vaccine, and distrust of the vaccine and/or institutions. Explanations related to social media or other forms of rumours, conspiracy theories and religious objections make up a small proportion of self-reported explanations, mentioned by less than 10% of hesitant South African adults.

Overall, the analysis presented in this report confirms what we found in Round 3, namely that vaccine hesitancy is largely driven by concerns about side-effects and the effectiveness of the vaccine. While it remains important to debunk rumours and other false information circulating on social media, this is not the main source of concern expressed by participants in the survey. What this analysis has demonstrated is that the majority of those that express hesitation about taking the vaccine are not anti-science, but are expressing rational and legitimate doubts about a new vaccine. By analysing a selection of socio-demographic variables, we were able to provide insight into which groups held particular concerns about the vaccine.

On the issue of age, the analysis in this report cannot provide a definitive answer as to why younger people, 18-34 year olds in particular, are more vaccine hesitant. Their three most mentioned explanations included side-effects (30%), distrust (21%) and ineffectiveness of the vaccine (18%). But this did not differ significantly from the explanations offered by older age cohorts. Two explanations, that were mentioned less frequently may, partially, hold the answer. Younger people, both those aged 18-34 and 35-49, are more generally uncertain about taking a vaccine, discussed 11% and 10%, respectively, much more frequently than the older age groups. Furthermore, 18-34 year olds were much more likely to mention that they were not at risk, 6% of their explanations compared to 1% of the 35-49 age group and 50-59 age group. While this provides some insight it is also clear more research will need to be done to understand the concerns of younger people better in relation to vaccination.

Our findings provide more clarity on why White adults are more vaccine hesistant. The report demonstrates that White adults have prominent concerns about side-effects (52%) and the effectiveness of the vaccine (60%). White adults are also more likely to favour alternative treatments to vaccination.

In our other report, we demonstrated that there were no significant differences in the levels of vaccine acceptance between men and women. Issues relating to the lower uptake of the vaccine among men are likely related to problems around access and a wider tendency amongst men to delay in seeking healthcare. Similarly, this report demonstrated that there were few gendered differences in the reasons for acceptance and hesitancy. However, women do appear to be much more concerned about side-effects than men.

Those with post-matric education have particular concerns about the effectiveness of the vaccine, and those who live in urban areas have higher concerns with side-effects and effectiveness compared to those living in rural areas.

This report provides some guidance on the areas of concern raised by the vaccine hesistant. It is hoped that this information can assist in helping to produce targeted public health messaging that may allay these concerns and increase the willingness to vaccinate.

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Appendix A

Table 17. Complete coding list for vaccine accepting explanations

Theme	Explanation	Collapsed coding
Back to normal	Explanation discusses a desire to get back to normal.	Back to normal
Conditional support	An explanation where doubt or a condition is placed on the willingness to vaccinate.	Conditional acceptance
General support without explanation	Answer restates their willingness to take a vaccine but does not provide an explanation why.	Make missing
Response not related to the question	Respondent provides a response but it is not related to the question.	Make missing
Already registered/vaccinated	Explanation indicates respondent is already vaccinated or registered to vaccinate.	Make missing
Will be required to	Explanation expresses the idea that they will be required to vaccinate for the purposes of travel or employment.	Other
Other - accept	Other ideas not captured in the coding scheme expressing the willingness to vaccinate.	Other
Protect self	Explanation discusses protecting oneself.	Protect self
Only if I have Covid	Explanation mentions that they will only take the vaccine is they are sick or test positive for the virus.	Protect self
Personal experience/infection	Explanation makes mention of personal or direct experience with the virus.	Protect self
Health concern	Explanation makes mention of a particular health concern	Protect self
Protect society	Explanation discusses protecting people such as family, community or society at large.	Protect society
Social responsibility	Explanations expresses the idea that taking the vaccine is 'the right thing to do' or a social responsibility to take it.	Protect society
Prioritise others	Explanation mentions that they believe other people should receive the vaccine before themselves.	Protect society
Family responsibility	Explanation makes specific mention of care giving role as a reason to take the vaccine.	Protect society
For herd immunity	Answer explicitly mentions the need for herd immunity	Protect society
Prevention	Explanation makes explicit mention of the idea of prevention and/or wanting to prevent the transmission of the virus.	Protect society
Public health measures necessary	Explanation discusses the need to still use other public health measures, such as masks, in addition to vaccination.	Protect society
Trust in science and/or government	Explanation discusses trust in government and/or science or scientists/vaccines in general.	Trust science/govt

Table 18. Complete coding list for vaccine hesitant explanations

Code	Explanation	Collapsed code
Alternative treatments	Explanation expresses a preference for alternative treatments to vaccination.	Alt treatments
Conspiracy concerns	Explanations that doubt the existence of Covid-19 or attribute the virus and/or the vaccine to powerful groups with vested interests.	Conspiracy
Not a guinea pig	Explanation states that they do not want to be tested our experimented on.	Distrust
Only if South African	Explanation discusses only wanting to take a vaccine manufactured or developed in South Africa.	Distrust
Vaccine distrust	Explanation states they do not trust the vaccine.	Distrust
Vaccine fear	Explanation expresses fear of the vaccine.	Distrust
Fake vaccine	Explanation expresses concerns that there may be a fake vaccine in circulation	Distrust
Distrust of institutions	Explanation raises concerns about the ability to trust institutional powers such as the government, 'the system' or the WHO.	Distrust
Vaccine effectiveness	Explanations that are concerned with the general effectiveness and safety of the vaccine, excluding side effects.	Ineffectiveness
Concerns about testing	Explanation mentions a specific concern with the testing of the vaccines.	Ineffectiveness
New strains	Explanation expresses doubt about the effectiveness of the vaccine in being able to protect against new strains.	Ineffectiveness
No vaccine for other conditions	Explanation expresses doubt about the effectiveness of the vaccine because other conditions, like HIV, do not have vaccines.	Ineffectiveness
Can still get Covid if vaccinated	Explanation expresses doubt at the effectiveness of the vaccine as it it is still possible to contract Covid-19 when vaccinated.	Ineffectiveness
Mentions different types of vaccines	Explanation mentions a preference for a particular type of vaccine due to perceived ineffectiveness of other vaccines.	Ineffectiveness
General anti-vax	Explanation states that the participant generally does not support vaccination.	Make missing
General hesitancy	Explanation reiterates unwillingness or uncertainty about vaccination but does not provide an explanation	Make missing
Not at risk	Explanations that express the belief that the individual is not at risk of contracting Covid-19.	Not at risk

Covid not a risk/unnecessary	Explanation expresses the belief that the risks from Covid are exaggerated.	Not at risk
Other - hesitant	Explanation expresses an idea of hesitancy that is not captured in the rest of the coding scheme.	Other
My right/my choice	Explanation expresses the idea that it is their right not to take it. Or it is their choice what happens to their body.	Other
Religious objection	Explanations that provide a religious reason for being unwilling to vaccinate.	Religious objection
Vaccine side-effects	Explanation mentions side-effects of vaccination.	Side effects
May cause people to get sick/death	Explanation specifically mentions that the vaccine may cause illness or death.	Side effects
Concern about vaccine ingredients	Explanation expresses concerns about what the vaccine is made of.	Side effects
Social media/rumours	Explanation discusses seeing social media stories or hearing rumours that have made them hesistant.	Social media/rumours
Unsure	Explanation expresses uncertainty about their willingness or unwillingness to vaccinate.	Unsure

Table 18. Complete coding list for neutral explanations

Code	**Explanation**	**Collapsed code**
Affordability	Explanation expresses concern about the affordability of the vaccine.	Access/Cost
Access	Explanation raises concerns about the inability to access the vaccine	Access/Cost
Need more information	Response states a need for more information about the vaccine.	Need more information
See others - general	Explanation discusses seeing other people as a reason for either their willingness or unwillingness to vaccinate.	See others
See others – leaders	Explanation discusses wanting to see or having seen leaders take the vaccine as influencing their own decision.	See others