Reasoning and Trends:

When we look at the percentages among different categories and we sum them all up, shown in Figure 22, we can see a trend of negative sentiment on twitter increasing from March 2021 and onward. Between February and March of 2021, vaccines started being produced more and were offered to the public after passing the trails.

Using the negatively classified tweets we tried to extract the most frequent and relevant used words to extract different reasonings on why are people giving negative sentiment for the vaccine which leads to vaccine hesitation. Bellow we explore some of the negative frequent keywords showed and providing examples of a tweet as well.

1. Government: Concerns and criticism over government response to Covid-19 out break and how they handed the situation when it came to providing and manufacturing vaccines.
   1. turned it off heard absolutely nothing that makes me worried or concerned except possibly the government response the vaccine data shows it works against variants the amount of past covid infections amp vaccine data means outbreak would be near impossible enjoy weekend
2. Infections: Concerns over vaccines not preventing infections.
   1. “the covid cultists wants it both ways with the vaccines they say they are effective amp everyone has to get one amp they want vaccine passports but we can never ever go back to normal because the vaccines don prevent infections or transmission they only lessen symptoms”
3. Pregnant: Concerns over vaccines safety when it comes to pregnant women.
   1. I have written to Union Health Secretary advising to vaccinate the Pregnant Women(PW) &amp; Lactating Mothers (LM). Currently, they are excluded from the Covid-19 vaccination drive because of lack of clinical trials data on the effect of the Covid-19 vaccine on these two groups <https://t.co/flCEOCMMEQ>
   2. Brazil has suspended the use of AstraZeneca's COVID-19 vaccine in pregnant women nationally after the death of an expectant mother. The coordinator of the Health Ministry's vaccination program said the suspension was enacted as a precautionary measure <https://t.co/rUNsjGnoYL> <https://t.co/2wd2CTrNPF>
   3. not sure how to say this forcefully enough without being uncharacteristically profane but to be very clear the covid 19 vaccines do not shed it utter bollocks this idea that vaccinated person can somehow harm pregnant woman this isn rocket science URL
   4. early evidence shows that the mrna covid 19 vaccines do not have any obvious safety signals for people who are pregnant the study also shows that the majority of adverse events after vaccination were not pregnancy specific read the full study URL URL
4. Priority: Concerns over the priority and the eligibility of the vaccination drive.
   1. Updated statement from the JCVI: unvaccinated adults aged 30 to 39 years who are not in a clinical priority group at higher risk of severe COVID-19 disease, should be preferentially offered an alternative to the AstraZeneca COVID-19 (AZD1222) vaccine
5. Republicans: Concerns over republicans’ refusal to taking the vaccines.
   1. rachel maddow account of the dire need many countries have to get covid vaccines and how the Biden administration wants to break patents so these countries can get produce them who is opposed to that republican they are really sociopaths it global health crisis
6. Election: Enhancing people to vote for a specific part that doesn’t mandatory vaccination.
   1. Domestic vaccine passports won't be temporary and they won't stop at COVID. They are the thin end of the wedge. No Pass? No gym, no beer, no theatre... The elections tomorrow may be your last chance to be heard for a long time. Please use your vote wisely.
7. Safety: concerns over safety of the vaccine:
   1. “When I first wrote about COVID-19 in March, I said it appeared to be deadly but it was NOT a plague from the Book of Revelation. In the same spirit, while I cannot comment on the safety or efficacy of the new vaccine, I CAN say it is NOT the mark of the beast.”
   2. Why is our government pushing a partially tested vaccine which may have dangerous side effects versus using a safe, cheap, and extremely effective prophylaxis and treatment for covid-19 that is ivermectin?
   3. Bobby Kennedy's âconcern â that the Covid vaccine is potentially unsafe, and hasnât been properly tested â is widespread, and dangerously wrong,â writes @drkerrymeltzer, his niece, and a physician. <https://t.co/FN5cSMaIBK>
   4. Just a reminder that if someone has had the vaccine they are not safe yet. They can still get covid and wont be protected until a few weeks after dose 2.
8. Effectiveness: concerns over the effectiveness of the vaccine
   1. Just In:- .New strain of Covid-19 virus found in England. Vaccine seems to be not effective.
   2. This bad mouth @BJP4India minister had taken the dose of Covaxin last month but still got Covid infected.  
      It simply means Covid vaccine indigenously developed by Bharat Biotech is not effective &amp; Modi is yet again deceiving Indian's as he always does.

<https://t.co/vDM8CeMFhM>

* 1. Milwaukee pharmacist arrested for deliberately ruining coronavirus vaccine doses now admits knowingly allowing people to be injected with them in plot to convince people the vaccine is not effective this jerk deserves many years in prison URL
  2. South Africa has just rejected the AstraZeneca vaccine against COVID-19. It is not effective for the South African strain of the virus. Why should the rest of Africa receive millions of doses when virus strains are undetermined? 1/

1. Misinformation: misinformation regarding lies and conspiracies that are being spread.
   1. One of the biggest barriers standing in the way of ending the pandemic is not medical or logistical. It’s the misinformation about the COVID-19 vaccines. <https://t.co/oLReTaBHOF>
   2. Dear experts- doctors, scientists, politicians, MSM, etc., who are censoring covid and covid vaccine "misinformation",

Only liars and cheats feel the need to censor others. The only reason to censor and silence others is because your science can't hold up to scrutiny.

* 1. Federal Liberal MP Craig Kelly has been banned from posting on Facebook for one week after he violated the tech giantâs COVID-19 misinformation policy.
  2. People are dying like flies and the govt is busy with sheninegans to descredit the existance of covid 19  
     The president is busy with misinformation and theories on vaccines and existance of covid 19 which is purely against what science says  
     JK and your team you take the BLAMES

1. Mandatory, freedom and Covid Passport: freedom restriction and inability for movement without vaccination passport.
   1. Can anyone tell me do you think we will have COVID passports, I am against the untested vaccine and this news by blare and piers Morgan is so depressing, is there any hope left, I donât want to take this vaccine and will fight it, but have we lost the fight? So down right now
   2. We must take note of every politician of any party who expresses support for mandatory covid vaccination or âvaccine passportsâ or âdigital credentials.â They must never again be allowed to hold public office.
   3. You should not be getting the Covid vaccine just so that your life can get back to normal. Medical decisions should be made based on having analyzed the pros/cons of the vaccine and not the threat of having your freedoms restricted.

No to medical extortion.

1. Healthcare: Concerns over healthcare system and people lack of trust in it in the US.
   1. With 34% of South Dakotans having received at least one dose of a COVID-19 vaccine, the state's healthcare systems are left with thousands of tablets of hydroxychloroquine that former President Donald Trump claimed to be effective in preventing the... <https://t.co/UItHlFFdUK>
   2. The speed at which we got a vaccine for COVID-19 is what a quality market-driven health care system could do for America.   
      The slow pace the vaccine shots are being administered is what a bureaucratic government-run healthcare system would be like for America.
   3. The biggest Covid vaccine skeptics? Frontline healthcare workers.

ð 20-40% of LA County won't take it

ð 50% of Riverside County

ð 60% of Ohio nursing home workers

ð 50% of Swiss nurses

ð 50% of French care home workers

* 1. Despite pervasive warnings about a lack of healthcare access and heightened vaccine hesitancy, Americaâs COVID-19 vaccine drive is failing to reach Black and Hispanic communities, according to a study <https://t.co/Y107vDX8ec> <https://t.co/nsLruBfhFJ>

1. Kids:
   1. Pediatric infectious disease specialist Frank Esper, MD, explains the ins and outs of developing a vaccine for children and why the first COVID-19 vaccine likely wonât be approved for kids. <https://t.co/rHnibsVoyR>
   2. People worried about the COVID vaccine not being safe for kids, but will buy them amber teething necklaces, glorified dog beds to sleep in, âhomeopathicâ remedies completely unregulated by the FDA, feed them unpasteurized milk ð
   3. very clever we will just mix kids in large bubbles keep testing them that will nip covid 19 in the bud as it still circulates between them large bubbles and the communities where there is shortage of vaccine that appears to have no knowledge of it it still transmits
2. variant: concerns over ineffectiveness of vaccination against newly developed variants.
   1. Zero Covid deaths yesterday and a monumentally successful vaccine roll-out, these are the facts we need to look at, not lefty warnings of future waves and variants we cannot possibly predict (and by definition, not evidence-based).

b. My 2 worst fears as an ER doc

1) New variants of COVID-19 not protected by the vaccine

2) New variants that will kill infants &amp; children disproportionately

You know how we can overcome both?

1) Get vaccinated, if vaccines are available to you.

2) Make vaccines available 4 allð